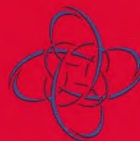


Program & Buyer's Guide

26th International Conference
on Computer Graphics and
Interactive Techniques

Conference 8-13 August 1999
Exhibition 10-12 August 1999

Los Angeles Convention Center
Los Angeles, California USA



SI99GRAPH

Los Angeles



ACM
1515 Broadway
New York, New York 10036 USA

Copyright © 1999 by the
Association for Computing Machinery, Inc. (ACM)

All product names printed in this publication are trademarks or
registered names of their respective companies.

Additional copies of the SIGGRAPH 99 Program & Buyer's
Guide may be ordered from:

ACM Order Department
Church Street Station
P.O. Box 12114
New York, New York 10277-0163 USA
800.342.6626 (US and Canada)
+1.212.626.0500 (international and New York metro area)
+1.212.944.1318 fax
orders@acm.org

SIGGRAPH 99 Program & Buyer's Guide
ACM Order Number: 428995
ISBN: 1-58113-172-0

Contents

2	Conference at a Glance	99	Attendee Services	103	Exhibition
4	Welcome		Airport Shuttle Desk	104	Exhibition Floor Plan
5	Conference		Audio/Visual Services	106	Exhibitors
8	Tracks		Automated Teller Machines (ATMs)	158	Startup Park
10	Creative Applications Lab: The Digital Cafe		Baggage Check	160	Product Index
12	Pathfinders		Banks/Currency Exchange	173	Advertiser Index
13	Courses		Bookstore	174	The SIGGRAPH Organization
36	Course Organizers		Child Care	176	Committees
37	Papers & Panels		Conference Management Office	177	SIGGRAPH 30th Year Anniversary Celebration
46	Panel Organizers/Paper Contacts		Exhibition Management Office	178	SIGGRAPH 2000
48	Sketches & Applications		Exhibitor Registration	180	Acknowledgements
63	Electronic Schoolhouse: Educators Program sigKIDS Community Outreach		First Aid Offices		Inside back cover Convention Center Map
72	Art Gallery: technOasis		Food Services		
77	Computer Animation Festival		Information Desks		
86	Emerging Technologies: The Millennium Motel		International Services		
90	The Studio		Internet Access Centers		
91	GraphicsNet		Los Angeles Convention Center		
92	Career Services		Accessibility		
93	Birds of a Feather/ Special Interest Groups		Business Center		
94	International Services Link International NYC		Parking		
96	Hotels/Hotel Map		Lost and Found Security		
98	Registration and Media Information		Merchandise Fulfillment Center		
			Technical Material Sold After the Conference		
			Message Center		
			Registration (Advance & Onsite)		
			Restaurant Information Desks		
			Shipping Desk		
			Shuttle Service		
			SIGGRAPH Store		
			Speaker Prep Room		
			Special Assistance Desk		
			Special Policies		
			Technical Session Lounge		
			Ticket Purchase and Exchange Counter		
			Electronic Theater Tickets		
			Reception Tickets		
			Telephone Numbers		

Conference at a Glance

Conference at a Glance

		SAT 7 AUG	SUN 8 AUG	MON 9 AUG	TUE 10 AUG	WED 11 AUG	THU 12 AUG	FRI 13 AUG		
Registration/Merchandise		6 - 8 pm	noon - 7 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 5 pm	8 am - 1 pm		
Exhibition/Startup Park	FC CS EP				10 am - 6 pm	10 am - 6 pm	10 am - 5 pm			
Courses	FC		1:30 - 5 pm	8:30 am - 5 pm	8:30 am - 5 pm					
Papers	FC					10:30 am - 6 pm	8:30 am - 6 pm	8:30 am - 5:30 pm		
Panels	FC					10:30 am - 6 pm	8:30 am - 6 pm	8:30 am - 5:30 pm		
Sketches & Applications	FC CS					10:30 am - 6 pm	8:30 am - 6 pm	8:30 am - 4 pm		
Electronic Schoolhouse: Educators Program sigKIDS Community Outreach	FC CS			8:30 am - 6 pm	8:30 am - 6 pm	9 am - 6 pm	8:30 am - 6 pm	8:30 am - 4 pm		
Art Gallery: technOasis	FC CS EP		5 - 7 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 1 pm		
Computer Animation Festival										
Electronic Theater-Evening	FC			7 - 9 pm	7 - 9 pm	7 - 9 pm	7 - 9 pm			
Electronic Theater-Matinée	FC CS				2 - 4 pm	2 - 4 pm				
Animation Theaters	FC CS EP		5 - 7 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 3 pm		
The Story of Computer Graphics	FC CS EP		8:30 - 10 pm	(Shown in Animation Theater throughout the week)						
Creative Applications Lab: The Digital Cafe	FC CS		1 - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 5:30 pm		
Emerging Technologies: The Millennium Motel	FC CS EP		5 - 7 pm 5 - 7 pm	9 am - 6 pm 9 am - 6 pm	9 am - 6 pm 1 - 6 pm	9 am - 6 pm 1 - 6 pm	9 am - 6 pm 1 - 6 pm	9 am - 1 pm 9 am - 1 pm		
Special Sessions/Daytime	FC CS					Star Wars 12:30 - 2 pm		Fiction 2000 12:30 - 2 pm		
Special Sessions/Evening	FC CS EP					Web3D RoundUP 8 - 9:30 pm	Animation Then and Now 6:30 - 8:30 pm			
The Studio	FC CS		1 - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 5:30 pm		

Technical Program

Conference Programs/Activities

Registration Categories **FC** - Full Conference **CS** - Conference Select **EP** - Exhibits Plus

		SAT 7 AUG	SUN 8 AUG	MON 9 AUG	TUE 10 AUG	WED 11 AUG	THU 12 AUG	FRI 13 AUG	
Birds of a Feather	FC CS EP	Throughout the week							Conference Programs/Activities
Career Center	FC CS EP	6 - 8 pm	noon - 7 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 3 pm	
Fundamentals Seminar	FC CS EP		2 - 5 pm						
International Services	FC CS EP	6 - 8 pm	noon - 7 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 5 pm	
Internet Access Centers	FC CS EP		noon - 7 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 5 pm	
Job Fair	FC CS EP					8 am - 6 pm			
Keynote Address/Awards	FC CS EP					8:15 - 9:45 am			
SIGGRAPH Organization Forum	FC CS EP						12:15 - 1:30 pm		
Special Interest Groups	FC CS EP	Throughout the week							
Welcome Reception	FC CS EP		5 - 7 pm						
Courses Reception	FC			8 - 11 pm					
Papers/Panels Reception	FC						8 - 11 pm		

Conference Programs/Activities

Receptions

Conference at a Glance

Welcome

to SIGGRAPH 99!

It's great to see you!

All of us on the SIGGRAPH 99 Committee are happy you're here. Back in January 1998, when we started planning this event, we couldn't predict exactly what it might become, or how many people might accept our invitation to get together in August 1999 in Los Angeles.

So we continued and enhanced the traditional programs that everyone in the worldwide computer graphics community enjoys and anticipates. We brainstormed, exchanged ideas, and talked with hundreds of you about what should be included in this year's conference. We adjusted some aspects. We added some new features. We selected and organized authors, speakers, animations, images, exhibits, presentation technologies, and collaborative opportunities.

And now that you're here, the final ingredient is in place.

Welcome to your conference! Welcome to Los Angeles! And welcome to the future of computer graphics and interactive techniques!

A handwritten signature in black ink, reading "Warren N. Waggenpack, Jr." in a cursive style.

Warren N. Waggenpack, Jr.
SIGGRAPH 99 Conference Chair

Conference

Keynote Address/Awards

SIGGRAPH 99's keynote speaker, Helaman Ferguson, reports on his "neolithic" adventures: communicating the beauty and power of art and science by carving theorems in stone and bronze with computer graphics and interactive techniques.

Immediately before the keynote address, SIGGRAPH presents two awards:

- Anthony D. DeRose, Pixar Animation Studios, receives the 1999 Computer Graphics Achievement Award.
- James F. Blinn, Microsoft Research, receives the 1999 Steven Anson Coons Award for Outstanding Creative Contributions to Computer Graphics.

Technical Program

Courses

SIGGRAPH's annual professional development offerings for everyone in computer graphics and interactive techniques, from first-job novices to 25-year veterans. Develop your skills and enhance your career in three days of courses offered in three formats: full-day courses, half-day courses, and two-hour tutorials.

Papers

The year's most significant, most provocative research and development results, selected by a rigorous international jury of scholars and scientists, and presented by the authors in three categories: research, systems, and applications.

NEW! for SIGGRAPH 99: visionary papers and impact papers, including a special session/course session on how their implications will shape the future.

Panels

Wide-ranging, free-flowing exploration of the art, science, and business of computer graphics and interactive techniques. Panelists argue, debate, and sometimes even agree on trends, technologies, claims, and controversies. The audience adds comments and questions. The result: surprising perspectives and important insights.

Sketches & Applications

Sketches: works in progress, tentative breakthroughs, and preliminary drafts. Applications: how new and traditional tools are used to produce practical, proven results. Three days of multimedia presentations in three categories: technical; art, design, and multimedia; and animation.

NEW! Electronic Schoolhouse: Educators Program | sigKIDS | Community Outreach

For the first time, SIGGRAPH 99 combines three traditional conference programs in the Electronic Schoolhouse. Schoolhouse areas include the Classroom for traditional presentation of papers and panels, the Workshop for hands-on activities, the Playground for stand-alone exhibits, and the Library for all kinds of interaction, networking, and curriculum information. The Electronic Schoolhouse reflects everyday life, where we are all students and teachers, exchanging, learning, sharing, and inspiring. Students teach what they know, seniors discover new worlds and imagine new visions, professionals enlighten generations.

Creative Applications Lab: The Digital Cafe

Hands-on, up-close interaction with the people and techniques presented in Papers, Panels, Courses, and Sketches & Applications. Apply your new knowledge and skills, share insights and interests with other attendees, and talk with speakers and presenters in informal breakout sessions.

Conference Programs/Activities

Art Gallery: technOasis

From its central gallery location, SIGGRAPH 99's aesthetic oasis extends to installations throughout the LA Convention Center. Experience turn-of-the-century digital art in all its variety: visual, interactive, animated, sculptural, installed, virtual, Web-based, telecommunicated, and participatory. **NEW!** Tours of the gallery by educated docents who offer insight into the processes and aesthetics of each work of art.

Conference Programs/ Activities

Computer Animation Festival

Stories and non-narrative works that reflect on the past and illuminate the future, in imagery and animations, film and video, live and interactive performances. The year's outstanding achievements in digital experience appear in the evening and matinée shows of the Electronic Theater and Animation Theaters.

NEW!

The Story of Computer Graphics

Celebrating the organization's 30th year, SIGGRAPH premieres its new feature-length documentary which captures some of the most compelling stories behind the striking graphics and technology which have become routine in today's imagery. The Story of Computer Graphics chronicles the history of the industry, its impact on society, and the excitement of future possibilities.

Emerging Technologies:

The Millennium Motel

The Millennium Motel is located between aesthetics and logic, where infrastructures of technology converge with the networks of desire. Check in and check out 1999's multi-modal interface design, intelligent autonomous agents, scientific visualization, conceptual electronic performance, and alternate realities.

NEW! The Studio

The former Guerilla Gallery teams technologists with artists to imagine, create, and collaborate in a hands-on state-of-the-art computer graphics studio. Artists, scientists, and engineers use the latest technologies in high-end printers and 3D desktop modelers to create and realize 2D and 3D output.

Birds of a Feather (BOFs)

Room 508A

Impromptu gatherings organized at the conference by attendees who post a notice on the BOFs schedule board at SIGGRAPH 99.

Career Center

Each year, thousands of experienced, qualified candidates connect with exceptional job opportunities in the Career Center, where attendees and exhibitors post résumés and job openings, schedule employment interviews, and consult with career mentors.

Fundamentals Seminar

Room 151

Sunday 8 August 2 - 5 pm

An essential, accessible introduction to computer graphics jargon, concepts, techniques, and technologies. The perfect orientation for novices on the fast track.

Presenters

Mike Bailey

University of California at San Diego and San Diego Supercomputer Center

Wayne Carlson

The Ohio State University

G. Scott Owen

Georgia State University

International Services

Join the worldwide computer graphics community in the International Center, where the multi-lingual SIGGRAPH 99 International Committee provides information, assistance, and translation services. All registered international attendees are invited to the International Welcome Reception on Wednesday evening from 6-8 pm at the Westin Bonaventure Pool, 4th floor.

Job Fair

Job seekers: explore how your skills and experience match a vast array of current job openings in a relaxed, informal setting at the day-long SIGGRAPH 99 Job Fair, Wednesday, 11 August. Employers: join hundreds of other leading computer graphics companies and explore how SIGGRAPH 99 attendees' skills and experience can benefit your organization.

Pathfinders

NEW! Is this your first SIGGRAPH conference? Welcome to Pathfinders, a volunteer mentoring program dedicated to the first-time attendee. Let us help you navigate through SIGGRAPH 99. Look for us at the conference in the South Lobby.

Receptions

The pressure's off and the fun kicks in when SIGGRAPH 99 adjourns for fine food, chilled libations, and relaxed networking in glittering LA locations. Meet and greet old friends and new as the international computer graphics community gathers for informal evenings of fun and collaboration.

Welcome Reception

Art Gallery: technOasis

Computer Animation Festival

Emerging Technologies: The Millennium Motel

Sunday 8 August 5 - 7 pm

Course Reception

Pershing Square

Monday 9 August 8 - 11 pm

Papers/Panels Reception

Westin Bonaventure Pool Deck

Thursday 12 August 8 - 11 pm

Special Interest Groups

Discussion groups scheduled in advance by attendees who think and work in similar technologies and environments.

T-Shirt Contest

Room 508A

The annual, underground T-Shirt Contest will be juried at noon on Thursday, 12 August at SIGGRAPH 99. Bring your unique, CG-designed t-shirt with a description of the process used to create it. For information, visit Conference Management, Room 304.

NEW! Pathways to the Future

ACM SIGGRAPH celebrates the organization's 30th year with an exhibit featuring its year-round activities throughout the world: educational and public policy initiatives, special projects, publications, small conferences and workshops on focused topics, professional chapters, and international relationships.

Special Sessions

- **The Story Behind the Digital Imagery of Star Wars: Episode I "The Phantom Menace"**

Wednesday 11 August 12:30 - 2 pm
West Hall A

A discussion of the scene behind the scenes of the making of the first in the prequel series of Star Wars. From concept artwork to the final render, peer into some of the behind the scenes details and stories from one of the most anticipated films of all time.

Panelists

Rob Coleman
Ned Gorman
John Knoll
Christian Rouet
Scott Squires
Industrial Light & Magic

- **Web3D RoundUP: Tomorrow's Visions of Web-Based Virtual Reality**

Wednesday 11 August 8 - 9:30 pm
West Hall B

A fun-filled evening featuring fast-paced demos of the latest real-time 3D graphics for the Internet. Don't forget to bring a noisemaker!

Organizer

Don Brutzman
Naval Postgraduate School

Master of Ceremonies

Timothy Childs
Oz

- **Animation Then and Now**

Thursday 12 August 6:30 - 8:30 pm
West Hall B

As digital technology demolishes creative barriers, character and story have become more important than ever. Creating memorable characters on the frontier of technology and developing stories that capture an audience's imagination are explored by distinguished film critic and unabashed animation fan Leonard Maltin and some of the leading animation talents in the world.

- **Fiction 2000: Technology, Tradition, and the Essence of Story**

Friday 13 August 12:30 - 2 pm
West Hall B

Can we use networked computers to tell each other stories that approach the complexity and power of the modern novel? This Special Session imagines the shape of fiction on the Internet over the next 10-15 years.

Organizer

Andrew Glassner
Microsoft Research

Moderator

Curtis Wong
Microsoft Research

Tracks

Animation & Special Effects **FX**

Producing and using computer graphics techniques for animation, special effects, and other entertainment applications.

Courses

- 19 3D Computer Animation Workshop
- 24 A Visual Effects Galaxy
- 27 Smart(er) Animated Agents
- 35 Motion Editing: Principles, Practice, and Promise
- 37 Subdivision for Modeling and Animation
- 43 Graphical Modeling and Animation of Brittle Fracture

Papers

- Animation Session
- Computational Fluid Dynamics in a Traditional Animation Environment
- Graphical Modeling and Animation of Brittle Fracture

Art **A**

New technologies and techniques for art and examples of artistic expression using computer graphics.

- 6 Fundamental Issues of Visual Perception for Effective Image Generation
- 13 A Survey of Color for Computer Graphics
- 15 Drawing on the Right Side of the Brain
- 19 3D Computer Animation Workshop
- 31 Why Does it Do That? 10 Mysteries of Computer Artmaking Revealed

- Modeling and Rendering of Weathered Stone
- Teddy: A Sketching Interface for 3D Freeform Design
- Multi-Color and Artistic Dithering
- Art-Based Rendering of Fur, Grass, and Trees
- View-Dependent Geometry

Interactive Techniques **IT**

Design, implementation, and application of advanced, intuitive human-computer communication.

- 8 Case Study: Scanning Michelangelo's Florentine Pietà
- 14 From Concept to Creation in Two Hours: The Advent of 3D Desktop Publishing
- 16 When All You Have is a Hammer, Everything Looks Like a Nail
- 20 Interactive Walkthroughs of Large Geometric Datasets
- 21 Internetworked 3D Computer Graphics: Overcoming Bottlenecks and Supporting Collaboration
- 34 Developing Shared Virtual Environments

- Virtual Reality Session
- Interactive Techniques Session

Modeling **M**

Creation and manipulation of graphics object representations.

- 4 Practical Generation of Models From Acquired Data
- 14 From Concept to Creation in Two Hours: The Advent of 3D Desktop Publishing
- 26 Simulating Nature: From Theory to Application
- 33 Modeling Techniques for Medical Applications
- 36 Physically Based Modeling
- 37 Subdivision for Modeling and Animation

- Modeling Session
- Data Captures Inverse Modeling Session
- Meshes & Morphing Session

Rendering **R**

Creation of realistic images from models, by computing the interaction of light with surfaces.

- 1 Rendering and Visualization in Parallel Environments
- 7 A Practical Guide to Global Illumination Using Photon Maps
- 25 Advanced RenderMan: Beyond the Companion
- 41 Volume Graphics

- Efficient Lighting Session
- Texturing Session
- Image-Based Rendering Session

SIGGRAPH 99 programs capture five broad technical themes. In this publication, symbols identify which Courses, Papers, Panels, Sketches & Applications, and Electronic Schoolhouse sessions are associated with these thematic tracks.

Panels	Sketches & Applications	Electronic Schoolhouse
<p>CG Crowds: The Emergence of the Digital Extra</p> <p>3D Tracking in FX Production: Blurring the Line Between the Virtual and the Real</p> <p>Visual Effects: Incredible Effects vs. Credible Science</p> <p>Visual Storytelling</p> <p>Function and Form of Visual Effects in Animated Films</p>	<p>Animation</p> <p>Commercial Successes</p> <p>Looking Death in the Face</p> <p>Dimensional Painting</p> <p>Star Wars Episode I Creature Development</p> <p>Star Wars Episode I Technical Animation Challenges</p> <p>Technical</p> <p>Special Effects</p> <p>Behavior and Flight</p> <p>Motion Hacks</p> <p>Extracting and Editing Motion</p> <p>Simulation for Animation</p>	<p>An Introduction to Digital Effects</p> <p>Creating 2D Animation</p> <p>Creating 3D Animation</p> <p>Art Before Technology or Technology Before Art? That is the Question!</p> <p>Teaching & Creating Animatics</p> <p>Visual Effects Through Adaptive Technologies</p> <p>When Children Draw in 3D</p> <p>Museums and Computer Games</p> <p>Educators Workshop in 3D Computer Graphics</p> <p>Math and Computer-Generated Effects</p> <p>Hands-On Animation</p>
<p>Experiential Computer Art</p>	<p>Art, Design, and Multimedia</p> <p>New Directions in Visual and Audio Expression</p> <p>Community and Communications</p> <p>Technique as Muse</p>	<p>Art Before Technology or Technology Before Art? That is the Question!</p> <p>A Creative Journey</p> <p>Developing Creativity</p> <p>Drawing & Learning</p> <p>Art and Technology</p> <p>Integrating Art and Technology in a State-Wide Curriculum</p> <p>Digital Design Education at UCLA</p> <p>Walking the Tightrope</p> <p>High-End Interactive Media in the Museum</p> <p>Incorporating Principles and Examples from Art/Design and Film/Video Into a CS Computer Graphics Course</p> <p>Creative Programming</p>
<p>How to Cheat and Get Away With It: What Computer Graphics Can Learn from Perceptual Psychology</p> <p>Natural and Invisible Human Interfaces</p> <p>Mixed Reality: Where Real and Virtual Worlds Meet</p>	<p>Art, Design, and Multimedia</p> <p>Interaction and Navigation</p> <p>Community and Communications</p> <p>Technical</p> <p>Virtual Reality</p> <p>Haptic Feedback Techniques</p> <p>Novel Projection Methods</p>	<p>Computer Camp: For Girls Only!</p> <p>The Round Earth Project</p> <p>SP3D and The Lighthouse</p> <p>Web Pages, Interactive Interfaces, and Worm Holes</p> <p>Hands-On Universe</p> <p>Visual Effects Through Adaptive Technologies</p> <p>Museums and Computer Games</p> <p>The Interactive Learning Environment</p> <p>High-End Interactive Media in the Museum</p>
	<p>Animation</p> <p>Commercial Successes</p> <p>Star Wars Episode I Creature Development</p> <p>Technical</p> <p>Medical Models and Mummies</p> <p>Hard Core Modeling</p>	
<p>Natural and Invisible Human Interfaces</p> <p>Get Real! Global Illumination for Film, Broadcast, and Game Production</p> <p>Mixed Reality: Where Real and Virtual Worlds Meet</p>	<p>Animation</p> <p>Dimensional Painting</p> <p>Star Wars Episode I Technical Animation Challenges</p> <p>Technical</p> <p>Imaginative Rendering</p> <p>Non-Realtime Rendering</p> <p>Real-Time Rendering</p> <p>Image-Based Rendering</p>	

Creative Applications Lab: The Digital Cafe

Hands-on, up-close interaction with the people and techniques presented in Papers, Panels, Courses, Sketches & Applications, Electronic Schoolhouse and Art Gallery: technOasis. Apply your new knowledge and skills, share insights and interests with other attendees, and talk with speakers and presenters in informal breakout sessions.

When the Creative Applications Lab: The Digital Cafe is scheduled for specific technical sessions, it may not be available for use by other attendees. Throughout the Program & Buyer's Guide, this symbol designates presentations that include CAL activities: 



Chair
Gudrun Enger
SGI

Location
West Hall A

Days	Hours
Sunday 8 August	1 - 6 pm
Monday 9 August	9 am - 6 pm
Tuesday 10 August	9 am - 6 pm
Wednesday 11 August	9 am - 6 pm
Thursday 12 August	9 am - 6 pm
Friday 13 August	9 am - 5:30 pm

Committee

Stuart Anderson
Metro Link, Inc.

Anthony Baylis
National Center for Supercomputing Applications

Kevin Glueck
Texas A&M University

Rob Lembree
SGI

David Long
Compaq Computer Corporation

Michael Miller
The Ohio State University

Jeff Sass
Adobe Systems, Inc.

Courses

- 2 2D and 3D Image Registration and Image Warping
- 3 Java Advanced Imaging Tutorial
- 4 Model Building Techniques Demonstration
- 8 Case Study: Scanning Michelangelo's Florentine Pietá
- 12 Lighting and Shading Techniques for Interactive Applications
- 14 From Concept to Creation
- 17 Image Processing for an Impressionist Effect
- 19 3D Computer Animation Workshop
- 21 Internetworked Graphics: Capture the Flag with DIS-Java-VRML
- 23 Virtual Worlds/Real Sounds
- 26 Fractal Terrain Models in Bryce 4.0
- 26 Procedural Volumetric Clouds
- 29 Advanced Graphics Programming Techniques Using OpenGL
- 30 An Interactive Introduction to OpenGL Programming

Papers

- ArtDefo: Accurate Real Time Deformable Objects
- Creating a Live Broadcast from a Virtual Environment
- Interactive Motion Editing System
- Real-time Acoustic Modeling for Distributed Virtual Environments
- Realistic, Hardware-Accelerated Shading and Lighting
- Rendering with Concentric Mosaics
- Six Degree-of-Freedom Haptic Rendering Using Voxel Sampling
- Stable Fluids
- Teddy: A Sketching Interface for 3D Freeform Design
- The VolumePro Real-Time Ray-Casting System
- Tracing Ray Differentials Demonstration

Panels

SoftScene Automated 3D Camera Tracking/3D Modeling System

Sketches & Applications

- 3D Facial Reconstruction and Visualization of Ancient Egyptian Mummies Using Spiral CT Data
- An Interface for Transcribing American Sign Language
- Computer Animation of Bird Flight
- Hyper 3D Paintings in QuickTime VR
- Image Re-Composer
- Interactive Insertion of Synthetic Objects into a Video Stream
- LiveWeb: Visualizing Live User Activities on Web
- Modeling HIV
- Notes on Non-Periodic Tiling Patterns
- OpenGL Texture-Mapping With Very Large Datasets and Multi-Resolution Tiles
- Pequot Museum Interactives
- Phene-: Creating a Digital Chimera
- Physically-based, Anatomic Modeling for Construction of Musculoskeletal Systems
- Prototype System of Mutual Telexistence
- Real-Time Translation of Human Motion from Video to Animation
- SaltoArte: Explorations in Spatial Interactive Multimedia
- The Holodeck Interactive Ray Cache
- The Nature of Noise
- Virtual Music Reproduction
- WorldBoard: Demonstrations and Mini Workshop on Authoring with our Tools

Electronic Schoolhouse

- The Atmosphere: Incorporating Interactive Multimedia into the Classroom
- Education Delivered Through Story-telling using Virtual Reality
- FELIX 3D Display: A Tool for Volumetric Imaging
- Students Projects in Rhino
- The Interactive Learning Environment Project
- Why is the Mona Lisa Smiling?

Art Gallery: technOasis

- Emerging Structures in Artificial Societies
- Nagasaki
- Photoshop Tricks: Jewel-like Patterns
- Trnava Synagogue: Development of a Compositing Memory

Pathfinders

SIGGRAPH 99 Pathfinders is a volunteer conference mentoring program dedicated to improving the first-time experience through the wisdom and support of experienced conference attendees.

In the past, mentoring happened only occasionally between close groups of friends with prior experience. Most newcomers faced the overwhelming number of options and people entirely alone.

To fill this important void, the principles of the Pathfinders program are simple. The program is a convenient, rewarding outlet to return volunteer service to the conference and community. It serves a continuum of today's newcomers and tomorrow's leaders. By helping to channel first-timers to programs appropriate for them, the overall quality of the conference is maximized for its participants.

Pathfinders offers customized attendee support both before and during the conference.

Before the conference, attendees can browse the online "Pocket-Pathfinder" Series for select advice and insights about the SIGGRAPH conference and its culture. These brochures are mini-digests ranging in topic from "Surviving Your Day at SIGGRAPH" to "Looking for Jobs at SIGGRAPH" to "SIGGRAPH on a Budget." Look for them on the SIGGRAPH 99 conference Web site.

At SIGGRAPH 99, Pathfinders focuses on direct contact with volunteer mentors. One-on-one counseling is offered in the South Lobby booth throughout the conference week. Student volunteers meet Pathfinders at their conference orientation meeting and at informal roundtable discussions. The light-hearted "Specials of the Day" bulletin board recommends fresh slices of the conference that can help make a significant difference to a visitor's experience. Look for our mentors with the blue badges and ribbons anytime you have a question – they will be happy to help.

We are pleased to invite you to the Pathfinders continuum – an evolving experience where the joy of learning comes from everyone playing both student and mentor at SIGGRAPH.

Committee

Barb Helfer
The Ohio State University

Scott Senften
SGI

Kristen Stratton
Warner Bros.

Location

South Lobby

Days

Saturday 7 August

Sunday 8 August

Monday 9 August

Tuesday 10 August

Wednesday 11 August

Thursday 12 August

Hours

6 - 8 pm

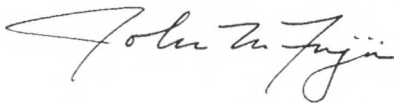
noon - 7 pm

8 am - 6 pm

8 am - 6 pm

8 am - 6 pm

8 am - 5 pm



Chair

John Fujii
Hewlett-Packard Company

Courses

Professional development in every aspect of computer graphics and interactive techniques, offered in **three formats: full-day courses, half-day courses, and two-hour tutorials.**

Full Conference registration allows attendees access to all SIGGRAPH 99 Courses. A course level indicator below each course title presents a refined indication of course level, as derived from the course reviewers.

Attendees who select the Full Conference registration option receive access to all SIGGRAPH 99 Courses and the Course Notes CD-ROM. Individual and full sets of printed course notes can be purchased at SIGGRAPH 99. Full sets ordered in advance are shipped to purchasers after the conference.



Courses Chair

Barb Helfer
The Ohio State University

Location

See pages 14 - 35

Days

Half Day am

Monday 9 August	8:30 am - noon
Tuesday 10 August	8:30 am - noon

Half Day pm

Sunday 8 August	1:30 - 5 pm
Monday 9 August	1:30 - 5 pm
Tuesday 10 August	1:30 - 5 pm

Full Day

Monday 9 August	8:30 am - 5 pm
Tuesday 10 August	8:30 am - 5 pm

Tutorial

Sunday 19 July	1:30 - 3 pm
	3:15 - 5 pm

Committee

Steve Anderson
SGI

Kathy Kershaw Barshatzky
Walt Disney Feature Animation

Lou Harrison
North Carolina State University

Alyce Kaprow
the new studio

Steve May
Pixar

Harry Smith
University of North Carolina at Wilmington

1 Rendering and Visualization in Parallel Environments

R Rendering



The continuing commoditization of the computer market has precipitated a qualitative change. Increasingly powerful processors, large memories, big hard disks, high-speed networks, and fast 3D rendering hardware no longer require a large capital outlay. A new class of computers (the personal workstation) has joined the traditional technical workstation as a platform for 3D modeling and rendering.

In this course, attendees learn how to understand and leverage both technical and personal workstations as components of parallel rendering systems. Topics include: parallel polygon rendering; parallel volume rendering; workload characterization; workload partitioning; and static, dynamic, and adaptive load balancing. These concepts are applied to characterize various parallelization strategies reported in the literature for polygon and volume rendering. The course does not dwell on actual implementation of these strategies but focuses instead on a comparison of their benefits and drawbacks. Case studies provide additional material to explain the use of these techniques.

Organizer

Dirk Bartz
Universität Tübingen

Lecturers

Dirk Bartz
Universität Tübingen

Bengt-Olaf Schneider
Claudio Silva
IBM T.J. Watson Research Center

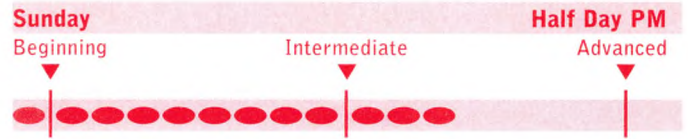
Room 502A

Schedule

1:30	Introduction Bartz
1:35	Personal Workstations Schneider
2:05	Technical Workstations Bartz
2:35	Parallel Programming Bartz
3	Break
3:15	Parallel Programming (continued)
3:35	Parallel Polygonal Rendering Schneider
4:15	Parallel Volume Rendering Silva
4:55	Questions and Answers Barz/Schneider/Silva

2 2D and 3D Image Registration and Image Warping

CALP



Methodologies for warping and blending images, and for automatically determining the desired warps between images. Topics include: applications of these methodologies in 2D and 3D image data fusion, video sequence interpolation, image-based rendering, correction of image distortions, elastic deformation, resampling techniques, and image morphing.

Prerequisites:

This course covers a wide range of topics, some of which require very little mathematics or computer graphics background. Others require familiarity with matrix algebra, calculus, computer graphics, and image processing. Students may wish to attend different parts of the course, depending on their backgrounds and interests.

Organizer

Ardeshir Goshtasby
Wright State University

Lecturers

Ardeshir Goshtasby
Wright State University

Richard Szeliski
Microsoft Research

George Wolberg
City College of New York

Room 502B

Schedule

1:30	Introduction Goshtasby
1:35	Image Transformation Goshtasby
2:05	Image Warping Wolberg
2:15	Image Morphing Wolberg
2:45	The Correspondence Problem Szeliski
3	Break
3:15	The Correspondence Problem (continued)
3:40	Image Registration Szeliski
3:55	Correcting Image Distortions Goshtasby
4:05	Fusion of Volumetric Images Goshtasby
4:15	Robust Log-Polar Registration Wolberg
4:35	Video Sequence Interpolation Szeliski
4:15	Image-Based Rendering Szeliski
4:35	Summary and Conclusions Goshtasby

3 Introduction to the Java Advanced Imaging API

CAL



The Java Advanced Imaging API (JAI) is a cross-platform, flexible, extensible toolkit for adding advanced image-processing capabilities to Java applications. It includes features such as tiled images, lazy evaluation, multi-resolution imaging, meta-data handling, and network imaging. This course introduces participants to the imaging capabilities of the Java platform and provides practical examples of how to make use of JAI in their applications.

The three major areas of JAI functionality are described in detail: pixel-based, or "rendered" imaging; resolution- and rendering-independent, or "renderable" imaging; and networked, or "remote" imaging. In each of these areas, participants learn both how to use the standard capabilities of the API and how to write their own extensions. The course includes a detailed presentation of an application example.

Organizer

Daniel Rice
Sun Microsystems, Inc.

Lecturers

Thomas DeWeese
Eastman Kodak Company

Daniel Rice
Sun Microsystems, Inc.

Petree Hall C

Schedule

- 1:30 Introduction
JAI and Java 2D
Imaging Basics
Rice and DeWeese
- 2 Working with Rendered
Images and Properties
Rice
- 2:50 Working with
Renderable Images
DeWeese
- 3 Break
- 3:15 Working with
Renderable Images
(continued)
- 3:35 Working with Remote
Images
Rice
- 4:10 Writing a JAI
Application
DeWeese

4 Practical Generation of Models From Acquired Data

M Modeling



A detailed discussion of how to create polygonal models from acquired data. Such models are used in a wide variety of fields including animation, architecture, illustration, engineering, and medicine. Models based on acquired data tend to be accurate, realistic, and rich in content. Common sources of acquired data include computed tomography, magnetic resonance imaging, physical slices, range cameras, laser scanners, 3DOF probes, structured light, and coordinate measuring machines. This course presents the techniques used to create polygonal models from these data sources, shows examples of the results, and discusses how to optimize the results.

Organizer

Ken Martin
Kitware Inc.

Lecturers

Brian Curless
University of Washington

William Lorensen
General Electric Company

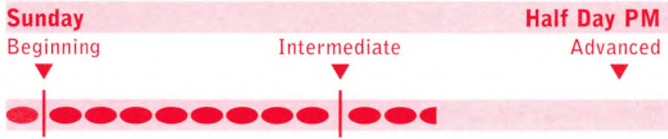
Ken Martin
William J. Schroeder
Kitware Inc.

Room 515A

Schedule

- 1:30 Models from Structured
Volumetric Data
Lorensen
- 2:20 Model Generation from
Range Images
Curless
- 3 Break
- 3:15 Model Generation from
Unorganized Points
Schroeder
- 4:10 Post Processing to
Improve the Results
Martin

5 From Fourier Analysis to Wavelets



Fourier analysis and wavelet theory constitute the fundamental mathematical framework for description of functions in the time and frequency domains. Such representations are the key element for effective analysis of function properties and for efficient implementation of computational methods. They are very important in many application areas, and are instrumental for researchers and developers who are solving problems in computer graphics and image processing.

In this course, participants learn the mathematical concepts behind Fourier analysis and wavelets. The target audience includes: people who already have some experience in signal processing and want to work with wavelets, and people who just want to obtain a general understanding of the wavelet theory.

Organizer

Luiz Velho
Instituto de Matematica Pura e Aplicada

Lecturers

Jonas Gomes
Luiz Velho
Instituto de Matematica Pura e Aplicada

Room 515B

Schedule

- 1:30 Fundamentals of Fourier Analysis
Gomes
- 2:15 From Time-Frequency Localization to Wavelets
Gomes
- 3 Break
- 3:15 Filter Banks and Wavelets
Velho
- 4 Wavelet Design
Velho

6 Fundamental Issues of Visual Perception for Effective Image Generation A Art



This introduction to visual perception and its applications in computer graphics surveys the fundamental findings of how we perceive light, color, pattern, motion, texture, shape, and depth, and focuses on how these results can be applied in real computer graphics applications, including scientific and information visualization, volume rendering, and realistic image synthesis. The course is of interest to a wide range of graphics researchers and practitioners who want to understand how to create images that can be effectively interpreted by the human visual system.

Organizer

Christopher Healey
North Carolina State University

Lecturers

Christopher Healey
North Carolina State University

Victoria Interrante
University of Minnesota

Penny Rheingans
University of Maryland, Baltimore County

Room 408A

Schedule

- 1:30 Introduction
Healey
- 1:35 Perceptual Issues in Low-Level Human Vision
Healey
- 2:40 Color Perception, Motion Perception, and Applications
Rheingans
- 3 Break
- 3:15 Color Perception, Motion Perception, and Applications
(continued)
- 4 Conveying Form, Shape, and Depth in Computer-Generated Images
Interrante

9 System Designs for Visualizing Large-Scale Scientific Data



This course explores the system issues involved in visualizing very large scientific datasets and highlights plausible approaches. It begins with an overview of the problems of extremely large data sets in scientific visualization, followed by a review of current solutions and research directions with an emphasis on data management for interactive visualization design. Then it introduces a data-streaming design that has been implemented in the popular vtk system. Next, algorithms and ways of structuring rendering systems for performing either postprocessing or runtime visualization on massively parallel supercomputers are described. Finally, the course summarizes overall design of a computational steering system.

Organizer

Kwan-Liu Ma
University of California, Davis

Lecturers

Michael Cox
NASA Ames Research Center

Kwan-Liu Ma
University of California, Davis

Steve Parker
University of Utah

William J. Schroeder
Kitware Inc.

Petree Hall D

Schedule

1:30	Introduction Ma
1:40	Large Data Management for Interactive Visualization Design Cox
2:20	Adapting Data-flow Systems to Large Datasets Schroeder
3	Break
3:15	Adapting Data-flow Systems to Large Datasets (continued)
4	Parallel Visualization Systems Ma
5	Interactive Large-Scale Visualization in the SCIRun Problem Solving Environment Parker

10 Developing Efficient Graphics Software



There is a common misconception in computer culture: to make slow software work more quickly, all you have to do is acquire a bigger and faster computer. This is expensive and unworkable from many points of view. There are many ways to measure current software performance and optimize it to enhance graphics performance. This course attempts to meet the growing demand for information in this important area with a particular emphasis on practical software development.

Topics include: interaction among CPUs, bus, memory, and graphics subsystems; general C and C++ language optimization techniques; analysis tools used to measure graphics and system performance and to detect bottlenecks; current algorithms and techniques for reducing the overhead and amount of graphics drawn; and a "laundry list" of optimization techniques on a variety of platforms.

Organizer

Keith Cok
SGI

Lecturers

Alan Commike
Bob Kuehne
Thomas True
SGI

West Hall B

Schedule

1:30	Introduction
1:35	General Performance Overview
2:05	Software and System Performance
3	Break
3:15	Profiling and Tuning Code
3:35	Compiler and Language Considerations
3:55	Graphics Techniques and Algorithms
4:40	Tips and Tricks

7 A Practical Guide to Global Illumination Using Photon Maps R Rendering



Photon maps provide a new practical way of efficiently simulating global illumination including caustics and participating media in scenes with complicated geometry and advanced shading models.

This tutorial provides the insight required for efficient and practical implementation of global illumination algorithms and shading algorithms based on photon maps. Topics include: efficient techniques and data-structures for generating photon maps (including the use of projection maps and Russian-roulette-based sampling); how to efficiently integrate information from photon maps in shading algorithms to render global illumination effects such as caustics, color bleeding, and participating media; and a number of useful and practical “tricks” that dramatically improve photon map speed.

The tutorial includes several examples of scenes rendered using photon maps, followed by discussion of how the photon maps were used and the issues that were important to ensure good quality and fast results.

Organizer

Henrik Wann Jensen
Massachusetts Institute of Technology

Lecturers

Henrik Wann Jensen
Massachusetts Institute of Technology

Room 408B

Schedule

1:30	Introduction and Overview Jensen
1:45	Photon Tracing: Building the Photon Maps Jensen
2:30	Rendering using Photon Maps Jensen

8 Case Study: Scanning Michelangelo's Florentine Pietà IT Interactive Techniques CALD



As part of a scholarly study, art historian Jack Wasserman has been working with IBM researchers to create a digital model of Michelangelo's Florentine Pietà. The project has encountered many practical problems related to the size and topology of the work, time and budget constraints, and restricted access. While the researchers have published, and will continue to publish, papers on specific new methods developed in the course of solving various problems, a typical technical paper or presentation does not allow for discussion of many important practical issues.

This tutorial is designed for practitioners who are interested in acquiring digital models for computer graphics applications, end users who are interested in understanding what quality can be expected from acquired models, and researchers who are looking for research opportunities in the “gaps” in current acquisition methods.

Organizer

Holly Rushmeier
IBM T.J. Watson Research Center

Lecturers

Fausto Bernardini
Joshua Mittleman
Holly Rushmeier
IBM T.J. Watson Research Center

Room 408B

Schedule

3:15	Project Definition and Requirements Rushmeier
3:35	Project Planning and Hardware Selection Bernardini
3:55	Working Onsite Rushmeier
4:20	Software Development for Model Construction Rushmeier and Bernardini
4:45	Presenting the Model to the User Mittleman

1.1 Visualizing Quaternions



This mixed-level tutorial provides an intuitive connection between quaternion lore and many standard problems in representation, interpolation, and exploitation of orientation frames in graphics and visualization. It begins with an attempt to construct an entirely pictorial intuition of what quaternions are and why we should use them to study orientation frames. A range of interactive images is exploited, including images representing individual quaternion rotations, the action of rotations in quaternion space, and the visual properties of quaternion splines and related animation optimization procedures. For those who think that applications of quaternions to graphics stop with animation, the tutorial continues with a wide variety of additional ways to exploit quaternion frames, ranging from creating optimal tubings and multidimensional VR navigation techniques, to oriented streamlines and local surface textures.

Organizer

Andrew Hanson
Indiana University

Lecturer

Andrew Hanson
Indiana University

Room 403A

Schedule

- 1:30 Introduction to Rotation Representations
Hanson
- 2:10 Visualization Techniques for Quaternions
Hanson
- 2:30 Applications of Quaternion Visualization
Hanson
- 2:45 Clifford Algebras: The Bigger Picture
Hanson

1.2 Lighting and Shading Techniques for Interactive Applications CAL D



This course focuses on the problem of improving lighting and shading in interactive applications running on mainstream graphics hardware. It strengthens understanding of both the theory of core computer graphics concepts and the practice of graphics programming techniques, through examples that increase image realism and create special effects. It also strengthens analytical skills: how to identify and evaluate multiple approaches to solving rendering problems, and how to analyze code examples that generate high-quality graphics images.

Attendees gain insight into the implementation of modern graphics hardware, become more cognizant of the strengths and weaknesses of that hardware, understand the capabilities of OpenGL and other low-level graphics APIs, and learn how to use these APIs as tools to solve challenging rendering problems.

Organizer

David Blythe
SGI

Lecturers

David Blythe
Brad Grantham
SGI

Mark J. Kilgard
NVIDIA Corporation

Room 152

Schedule

- 1:30 Introduction
Blythe
- 1:35 Lighting Model Basics
Blythe
- 2:10 Shading Computations
Kilgard
- 3 Break
- 3:15 Advanced Shading
Grantham
- 4 Advanced Shading II
Kilgard
- 4:45 Summary, Questions, and Answers
All

13 A Survey of Color for Computer Graphics

A Art



In computer graphics, color technologies such as monitors, scanners, and printers are fundamental. Physical and symbolic models for representing color, algorithms for rendering colored objects and images, and tools for design and selection of color are all part of computer graphics. Rather than teach a single area in depth, this tutorial surveys the relevant color disciplines. The format provides an overview of each topic, describes its application to computer graphics, and provides references to texts and other sources. Topics include: color perception, representation, reproduction, management, rendering, selection, and design.

While the tutorial is intended to be comprehensive, greater weight is given to the scientific and technical aspects of color than the artistic. It should be of value both to those seeking an introduction to color in computer graphics and to those knowledgeable in some aspects of color who wish to get a broader view of the field.

Organizer

Maureen Stone
StoneSoup Consulting

Lecturer

Maureen Stone
StoneSoup Consulting

Room 403A

Schedule

3:15	Introduction Stone
3:20	Color Vision and Appearance Stone
3:35	Color Reproduction and Management Stone
4	Color in Graphics Systems Stone
4:30	Color Selection and Design Stone
4:55	Summary and Wrap-up Stone

14 From Concept to Creation in Two Hours: The Advent of 3D

Desktop Publishing **IT** Interactive Techniques **M** Modeling **CAL**



Introduction to a powerful new approach to digital 3D modeling. Designers, animators, and artists have the same goal today that they've had for years: to present their inspirations in concrete form. What has changed are the tools. Computer modeling software has evolved into powerful, complex packages now capable of tackling any task. The intuitive, expressive nature of working with one's hands, however, has been left behind. Recent advances in haptics allow people to interface with computers using their sense of touch. Modelers can now quickly and easily create with intuitive digital tools that closely mimic traditional, physical modeling tools. At the same time, advances in rapid prototyping make it easy to "print" physical copies of 3D computer models for evaluation, display, and collaboration. Together, these new capabilities give modelers an unprecedented ability to rapidly express ideas.

Organizer

Thomas Massie
SensAble Technologies

Lecturers

Marina Hatsopoulos
Z Corporation

Thomas Massie
SensAble Technologies

Room 403B

Schedule

1:30	Introduction Massie
1:45	Touch-Enabled Computer Modeling Tools Massie
2:15	3D Printing for Rapid Model Creation Hatsopoulos
2:45	Wrap-up Massie

15 Drawing on the Right Side of the Brain

A Art



Learning to draw means learning to see things differently, to see in ways that are not used in ordinary life. Drawing is an active, creative, self-directed process. It slows down close observation and leads to a different way of seeing. Once it's learned, drawing can be used to record what you see, either in reality or in your mind's eye, in a manner not totally unlike the way we can record our thoughts and ideas in words.

West Hall A

In this intensive course, attendees are introduced to the perceptual skills necessary for realistic drawing and for seeing things as they are. The course is especially designed for people who may believe that learning to draw well is possible only for those with inborn talent. For over a decade, Betty Edwards has disproved this widely held belief. Given proper instruction, the basic perceptual skills of drawing can be taught and learned in a short time.

Organizers

Nahum Gershon
The MITRE Corp.

Betty Edwards
Drawing on the Right Side of the Brain, Inc.

Lecturer

Betty Edwards
Drawing on the Right Side of the Brain, Inc.

16 When All You Have is a Hammer, Everything Looks Like a Nail

IT Interactive Techniques



Isosurface construction is a core algorithm for any visualization system. Although Marching Cubes is associated with medical image surface construction, the technique has found widespread use in other scientific visualization applications.

Room 403B

This course goes beyond these accepted roles for the algorithm and presents applications in CAD, image fusion, graphics, and entertainment. It emphasizes the divide-and-conquer approach championed by Marching Cubes and shows how to extend the original concepts to other cell types, higher dimensions, and geometric clipping. All examples are illustrated using the publicly available Visualization Toolkit (<ftp://vtk.scorec.rpi.edu/pub/>). The software runs on Unix (www.kitware.com/vtkhtml/vtkdata/VTK_Linux_WWW/VTK-Linux-HOWTO.html), Linux, and Windows 95/98/NT. The software can be used from C++, tcl, python, or Java.

Organizer

William Lorensen
General Electric Company

Lecturer

William Lorensen
General Electric Company

17 Non-Photorealistic Rendering

CAL D



This course provides a working knowledge of techniques for non-photorealistic rendering (NPR). NPR may offer a more effective means of communication than photorealism, and for many applications provides a more natural form of visual expression. From the artist's perspective, the course covers approaches that support the effects of natural media, such as pencil, oil painting, or watercolor that are derived from a range of 2D and 3D algorithms.

Topics include details of a range of techniques for generating NPR imagery, including pen and ink and sketchy styles, using both interactive and off-line approaches.

Organizer

Stuart Green
LightWork Design Ltd.

Lecturers

Cassidy Curtis
Pacific Data Images

Bruce Gooch
Amy Gooch
University of Utah

Stuart Green
LightWork Design Ltd.

Aaron Hertzmann
New York University

Pete Litwinowicz
RE:Vision

David Salesin
University of Washington

Simon Schofield
Miller Hare Ltd. and
University College London

West Hall B

Schedule

8:30	Welcome and Course Overview Green
8:55	Introduction to NPR Green
9:15	Beyond Realism: Aesthetics in Image Synthesis Salesin
10	Break
10:15	NPR: The Artist's Perspective Schofield
11:30	Painterly Image Processing Hertzmann
Noon	Lunch
1:30	Image-based Rendering and NPR Litwinowicz
2:30	Introduction to 3D NPR: Silhouettes and Outlines Hertzmann
3	Break
3:15	Using NPR to Communicate Shape Gooch
3:45	Non-Photorealistic Animation Curtis
4:15	Interactive NPR Gooch
4:45	Kazoo: A Case Study in NPR Green

18 Introduction to Computer Graphics



The SIGGRAPH conference is an exciting event, but it is often an intimidating experience for first-time attendees. There are so many new terms, new concepts, and new products to try to understand. This course is designed to ease newcomers into the SIGGRAPH conference experience by presenting the fundamental ideas and vocabulary at a level that can be readily understood. Far from dry facts, this course also portrays the fun and excitement that led most of us here in the first place. It prepares attendees to understand, appreciate, enjoy, and learn from the rest of the SIGGRAPH 99 programs and events.

The course is a full day of lecture-style presentations with slides, videotapes, and online demos that illustrate concepts (for example, "here is an image with and without perspective") and applications (for example, "here is the use of perspective in a visualization application and why you have to be careful when using it"). The source code for live demos will be available on CD-ROM and the Web.

Organizer

Mike Bailey
University of California, San Diego and San Diego Supercomputer Center

Lecturers

Mike Bailey
University of California, San Diego and San Diego Supercomputer Center

Andrew Glassner
Microsoft Research

Olin Lathrop
Cognivision, Inc.

Patricia Wenner
Bucknell University

Room 151

Schedule

8:30	Welcome and Overview Bailey
9	Modeling for Rendering and Animation Glassner
10	Break
10:15	Rendering Glassner
11:15	Graphics Display Hardware Lathrop
Noon	Lunch
1:30	Animation Glassner
2:15	Geometry or Computer Graphics Bailey
3	Break
3:15	Input Devices Bailey
3:30	Graphics on the World Wide Web Bailey
4	Virtual Reality Lathrop
4:30	Finding Additional Information Bailey
4:45	General Questions and Answers All

19 3D Computer Animation Workshop

A Art **FX** Animation & Special Effects **CAL**



This hands-on workshop, presented in the Creative Applications Lab: The Digital Cafe, introduces participants to high-end 3D computer animation capabilities. Participants work in pairs on workstations running one of today's major 3D software packages. The course is divided into four parts, each consisting of a lecture on specific principles of 3D animation, a demonstration of how those principles are implemented on the software being used, and an extended exercise in which participants work at the workstations on a short animation that illustrates those principles.

Organizer

Michael O'Rourke
Pratt Institute

Lecturer

Michael O'Rourke
Pratt Institute

Animation Assistants

Lauren Carr
Jaewon Chung
Sean Gautreaux
Nicole Goodman
Steve Gressak
Alex Ko
Helen Koo
Unju Lee
Jerome Lin
Gevel Marrero
Mika Matsuura
Bill Sayer
Heather Sinclair
Junghwan Sung
Isabel Veguilla
Hyejung Yoon
Yi-Sui Yoon
Pratt Institute

CAL

Schedule

8:30	Lecture: Coordinate Systems, Geometric Primitives, Transformations, Keyframing, Animation Preview, Dope Sheets, and Hierarchies O'Rourke
10	Break
10:15	Lecture: The Camera, Lighting, Surface Characteristics/Shaders, Basic Texture Mapping, Rendering & Shading Algorithms, Final Frame Considerations, Flipbooks O'Rourke
Noon	Lunch
1:30	Lecture: Polygonal Modeling, Patch Modeling, Common Modeling Techniques, Surface Editing, Keyshape Animation, Bump and Transparency Mapping O'Rourke
3	Break
3:15	Lecture: Inverse Kinematics, Rotational Limits, Rigid Surfaces, Flexible Surfaces, Constraints O'Rourke

20 Interactive Walkthroughs of Large Geometric Datasets

IT Interactive Techniques



A survey of the principles involved in designing interactive walkthroughs of large geometric datasets. The course theme is based on two questions:

1. How can we make effective walkthrough illusions?
2. What are their applications?

The course begins with an introduction to interactive walkthroughs and their applications. It discusses taxonomy and representations of geometric datasets. Then it summarizes four rendering acceleration techniques: use of image-based representations, model simplification, visibility culling, and dynamic tessellation of spline models. Each speaker surveys a number of algorithms for each technique and evaluates them with respect to system integration. Next, two speakers present algorithms for real-time collision detection and managing large geometric datasets for interactive walkthroughs. Finally, the speakers discuss their experiences in developing walkthrough systems for more than a decade and their application of these systems to architectural and CAD datasets.

Organizer

Dinesh Manocha
University of North Carolina at Chapel Hill

Lecturers

Daniel Aliaga
Lucent Technologies Bell Laboratories

Frederick P. Brooks
Ming C. Lin
Dinesh Manocha
Andrew Wilson
University of North Carolina at Chapel Hill

Jonathan Cohen
Subodh Kumar
Johns Hopkins University

Hansong Zhang
SGI

Room 502A

Schedule

8:30	Introduction Manocha
9	Image-based Representations Aliaga
9:45	Model Simplification Cohen
10	Break
10:15	Model Simplification (continued) Cohen
10:30	Visibility Culling Zhang
11:15	Interactive Display of Spline Models Kumar
11:45	Database Management Wilson
Noon	Lunch
1:30	Database Management (continued) Wilson
1:45	Interactive Collision Detection Lin
2:15	Fourteen Years of Interactive Walkthroughs Brooks
3	Break
3:15	Fourteen Years of Interactive Walkthroughs Brooks
4:15	System Integration and Conclusions Manocha

21 Internetworked 3D CG: Overcoming Bottlenecks and Supporting Collaboration

IT Interactive Techniques CAL



An introduction to networking concepts for using and developing interactive and collaborative Internet-based graphics applications.

Software and tools associated with the Multicast Backbone (MBone), Distributed Interactive Simulation (DIS) protocol, Hypertext Transfer (http) protocol, Java and Java3D, the Extensible Markup Language (XML), the Virtual Reality Modeling Language (VRML) and the High Level Architecture (HLA) for Distributed Virtual Environments are demonstrated in this course. Collaborative remote design projects are presented as case studies, followed by first-hand examples of the capabilities and tradeoffs involved when interactive 3D graphics are combined with the World Wide Web and live information streams across the Internet. The speakers also discuss how the SIGGRAPH community is affected by (and can likewise influence) Internet Engineering Task Force (IETF) standards (such as implementations of relevant protocols in the IPv6 suite), the ACM Special Interest Group on Communications (SIGCOMM), the VRML Consortium, and other Internet-related organizations.

Organizer

Theresa-Marie Rhyne
Lockheed Martin/
U.S. EPA Visualization Center

Lecturers

Bob Barton
Fraunhofer Center for Research in
Computer Graphics

Don Brutzman
Naval Postgraduate School

Mike Macedonia
USA Simulation, Training, and
Instrumentation Command

Theresa-Marie Rhyne
Lockheed Martin/
U.S. EPA Visualization Center

Room 502B

Schedule

8:35	Introductory Remarks Rhyne
9:20	Overview of 3D Interactive Graphics Using the Internet Rhyne
9:50	MBone and Internet based Virtual Environment Demonstration All
10	Break
10:15	Internetworked Graphics: Capabilities, Shortfalls, Frontiers Brutzman
11	MBONE and Virtual Environment Demonstration All
Noon	Lunch
1:30	Integrating IETF Standards with 3D Programming Paradigms & Issues in Distributed Virtual Environments Barton
2:15	Collaborative Virtual Reality Demonstration Barton
3	Break
3:15	Human-Computer Interaction Issues and A Taxonomy of Distributed Virtual Environments Macedonia
4:30	MBONE and Virtual Environment Demonstration All
4:55	Closing Remarks Rhyne

22 3D Geometric Compression



To support Internet access to 3D models of complex virtual environments or assemblies for electronic shopping, collaborative CAD, multi-player video games, and scientific visualization, representations of 3D shapes must be compressed by several orders of magnitude.

This course offers an analysis of storage costs for 3D shape representations and covers several recent schemes for lossy and lossless compression of triangle meshes and more general polyhedra. In addition to single-resolution compression schemes for triangle meshes, which result in compressed formats of less than a byte per triangle, multiresolution progressive refinement approaches are discussed. Along with surface simplification or decimation methods, these approaches, which change the surface topology while approximating the geometry, can be regarded as lossy compression schemes.

Organizers

Jarek Rossignac
Georgia Institute of Technology

Gabriel Taubin
IBM T.J. Watson Research Center

Lecturers

Michael Deering
Sun Microsystems, Inc.

Craig Gotsman
Israel Institute of Technology

Hugues Hoppe
Microsoft Research

Jarek Rossignac
Georgia Institute of Technology

Gabriel Taubin
IBM T.J. Watson Research Center

Room 408A

23 Virtual Worlds/Real Sounds

CALP



This course covers concepts, models, techniques, and systems for parametric digital synthesis and simulation of real-world sounds and sonic environments. Its goal is to provide well-founded methods and techniques for dealing with sound using parametric computational models. Attendees should leave with the knowledge that there can be more to virtual sonic environments than playback of pre-recorded PCM sounds, and more than attachment of ad hoc echoes and reverberation effects to simulating realistic sonic spaces. The course balances theory, algorithms, and issues in the computation of sound with demonstrations illustrating the use of real-time sound synthesis and processing.

Organizer

Perry Cook
Princeton University

Lecturers

Robin Bargar
University of Illinois at Urbana-Champaign

Perry Cook
Thomas Funkhouser
Princeton University

Nadine Miner
Sandia National Laboratories

Xavier Serra
Pompeu Fabra Universitat

Room 408B

Schedule

	Welcome; Overview/Introduction Cook
	Sound in Digital Media, Opening Thoughts Bargar
	Views of Sound Cook
	Survey of Sound Synthesis Algorithms Serra, Miner, and Cook
	Modeling of Spaces Funkhouser
	Summary of AM, Preview of CAL Demos Cook
Noon	Lunch
	Welcome/Reintroductions Cook
	Controlling and Scripting Sound Synthesis Bargar and Cook
	Hardware, Software, and Computing Issues Cook, Bargar, Serra, Miner, and Cook
	Sound Synthesis/Processing Systems and Software Funkhouser, Serra, Minder, and Bargar
	Measuring Success: Psychoacoustics and Testing Miner
	Animation Applications and Demos All
	Wrap-up Cook

24 A Visual Effects Galaxy

FX Animation & Special Effects



Visual effects are many things to many people. At their most visible, they are the explosion at the apex of a chase scene; a space cruiser doing battle with a starship; a multi-limb leader of an alien universe. But most of the time, visual effects are not noticeable as effects. They are dust at the end of a broom or bubbles at the tail of a submarine. And visual effects are what you don't see: telephone poles and cables removed because they didn't exist in the 17th century; skyscrapers replaced by mountain ranges; the hero's eyes changed from blue to green.

In a comprehensive look at the visual effects industry, members of the Visual Effects Society focus on specific techniques and technologies of the past two decades.

Organizers

Pam Hogarth
Gnomon, Inc., School of Visual Effects

Jill Smolin
Cinesite Visual Effects

Moderator

Harrison Ellenshaw

Lecturers

Jon Alexander
Tim Alexander
Susan Kelley Andrews
Rod G. Bogart
Carl Frederick
Industrial Light & Magic

Glenn Kennel
Cinesite Digital Mastering

David Morehead
DreamWorks SKG

David Prescott
Digital Domain, Inc.

Brian Rosen
Pixar Animation Studios

Scott Singer
Pacific Data Images

Tom Smith
Cinesite Visual Effects

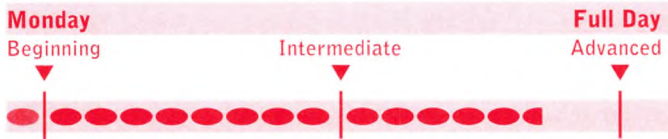
West Hall A

Schedule

8:30	Introduction Ellenshaw
8:35	Special Effects, Special Film, Scanning and Recording: The History and Development of Kodak SFX 200T and Invisible Effects Smith and Kennel
9:25	Creating a Digital Tree and Using L-Systems in Production Prescott
10	Break
10:15	Creating a Digital Tree (continued) Prescott
10:35	The ILM Fur Rendering System Frederick
Noon	Lunch
1:30	Challenges of Scale and Computer Imagery in Antz: Using Effects to Bring Cinematic Detail to a Fully Computer-Generated Film Singer
2:20	Flagrant Abuses of a Perfectly Nice Texture System: Defining Surfaces for Pixar's A Bug's Life Rosen
3	Break
3:15	Flagrant Abuses (continued) Rosen
3:30	The Prince of Egypt, Hieroglyph Nightmare Morehead
4:15	The 2D Creative Process on Star Wars: Then and Now J. Alexander, T. Alexander, Andrews, Bogart, and Mongovan
5	Closing Comments Ellenshaw

25 Advanced RenderMan: Beyond the Companion

R Rendering



RenderMan has been used by many large and small animation production studios to create high-quality, often photorealistic imagery for television and motion pictures. Much of the power of the system is due to its flexibility and extensibility, which give users the ability to customize the system to fit situations that were not envisioned by the original implementors.

This course goes beyond the basics presented in The RenderMan Companion and teaches advanced tricks and techniques that are being used (or should be) in late-1990s special effects production. It explores examples of successful animations that have made extensive use of RenderMan features, particularly its Shading Language.

Organizer

Larry Gritz
Pixar Animation Studios

Lecturers

Tony Apodaca
Ronen Barzel
Larry Gritz
Pixar Animation Studios

Doug Epps
Tippett Studio

Clint Hanson
Sony Pictures Imageworks

Scott Johnston
Fleeting Image Animation, Inc.

Petree Hall D

Schedule

8:30	Welcome and Introduction Apodaca
8:45	Modern Scene Description Paradigms Apodaca
10	Break
10:15	Advanced Shader Writing Techniques Gritz
Noon	Lunch
1:30	Advanced Techniques for CG Lighting Barzel
2:15	RenderMan in the Production Process Epps
3	Break
3:15	Volumetric Shaders for Visual Effects Hanson
4	Non-photorealistic Rendering Johnston

26 Simulating Nature: From Theory to Application

M Modeling **CAL D**



This course imparts a working knowledge of several techniques for simulating natural phenomena. It covers practical aspects, as well as research issues. The presenters provide both a research and production perspective on the difficult task of photo-realistic modeling, rendering, and animation of natural phenomena. Topics include: physics-based approaches for modeling and animating water, waves, and oceanscapes; practical application of fluid dynamics for water and gas animation; procedural and physics-based approaches for modeling smoke and steam; procedural volumetric techniques for modeling and animating clouds; grammar-based techniques for modeling plants and plant ecosystems; practical aspects of modeling and rendering rich organic environments; and fractal techniques for simulating mountainous landscapes. The course also features a concluding panel session in which the speakers discuss research directions, explore unsolved problems, and discuss new trends in simulating natural phenomena.

Organizer

David Ebert
University of Maryland, Baltimore County

Lecturers
David Ebert
University of Maryland, Baltimore County

Nick Foster
Pacific Data Images

F. Kenton Musgrave
MetaCreations

Przemyslaw Prusinkiewicz
University of Calgary

Jerry Tessendorf
Cinesite Visual Effects

Sophie Vincelette
Pixar Animation Studios

Petree Hall C

Schedule

8:30	Introduction Ebert
8:45	Fractal Landscapes in Their Natural Context Musgrave
9:45	Water More Real Than Real Tessendorf
10	Break
10:15	Water More Real Than Real (continued)
11	Modeling Rotational Motion in Water and Smoke Foster
Noon	Lunch
1:30	Procedural Volumetric Cloud Modeling and Animation Ebert
2:30	Modeling Plants and Plant Ecosystems Prusinkiewicz
3	Break
3:15	Modeling Plants and Plant Ecosystems (continued)
3:45	Looking Over a Four Leaf Clover: Strategies in Dressing Natural Environments in A Bug's Life Vincelette
4:45	Panel Session / Questions and Answers All

27 Smart(er) Animated Agents

FX Animation & Special Effects



As real-time characters become almost commonplace, the next challenge is to make those characters interact with real people. Interactions should be through the modalities that real people share, especially language, gesture, and shared perceptions of the world. This course explores several ways to give real-time, animated, embodied characters more intelligence and communication skills so that they can act, react, make decisions, and take initiatives. It also addresses applications to collaborative groups, interactive training, and smarter games.

Room 515A

Organizer

Norm Badler
University of Pennsylvania

Lecturers

Justine Cassell
Massachusetts Institute of Technology

Barbara Hayes-Roth
Stanford University

W. Lewis Johnson
Jeff Rickel
University of Southern California

James Lester
North Carolina State University

28 3D Photography



3D photography is an emerging technology for capturing richly textured 3D models of real objects and scenes. While optical cameras measure visible light radiated from a scene, 3D photography systems measure scene geometry and color. Combining these two technologies has the potential to change the face of computer graphics by providing an effective means of constructing graphical scenes of unparalleled detail and realism.

This course presents the current state of the art in 3D photography and describes the principles behind a number of current techniques. Leading researchers in the field introduce the fundamental concepts, survey a variety of techniques, examine in detail a few successful approaches at the forefront of 3D photography, then review optical methods, including stereo vision, photogrammetry, structured light, and laser range scanners. The course provides a forum for presenting a range of different techniques and discussing the relative merits and weaknesses of current approaches.

Organizers

Brian Curless
University of Washington

Steven Seitz
Carnegie Mellon University

Lecturers

Jean-Yves Bouguet
California Institute of Technology

Brian Curless
University of Washington

Paul Debevec
University of California, Berkeley

Marc Levoy
Stanford University

Steven Seitz
Carnegie Mellon University

Room 515B

Schedule

8:30	Introduction Curless
8:50	Acquiring Images Curless and Seitz
9:35	Overview of Passive Vision Techniques Seitz
10	Break
10:15	Façade: Modeling Architectural Scenes Debevec
11:20	Voxel-based Techniques for Reconstruction Seitz
Noon	Lunch
1:30	Overview of Attractive Vision Techniques Curless
2:10	Desktop 3D Photography Bouguet
2:50	Shape and Appearance from Images and Range Data Curless
3	Break
3:15	Shape and Appearance from Images and Range Data (continued)
3:50	Application: The Digital Michelangelo Project Levoy
4:40	Discussion: 3D Cameras and the Future of Photography All

29 Advanced Graphics Programming Techniques Using OpenGL CAL D



This course focuses on practical solutions to domain-specific graphics application problems, with an emphasis on techniques for interactive graphics running on mainstream graphics hardware. Topics are drawn from the major graphics application areas, including CAD, visual simulation, gaming, image processing, scientific visualization, and special effects.

Room 152

Schedule

8:30	Introduction Blythe
8:35	Visual Simulation Blythe
9:20	CAD I Nelson
10	Break
10:15	Graphics Special Effects Nelson
11	Image Processing McReynolds
Noon	Lunch
1:30	CAD II Blythe
2:15	Scientific Visualization McReynolds
3	Break
3:15	Production Graphics Blythe
4	Simulating Natural Phenomena Grantham
5	Summary, Questions, and Answers All

In this course, attendees:

- Strengthen their understanding of both the theory of core computer graphics concepts, by seeing them applied, and the practice of graphics programming techniques, through examples that increase image realism.
- Create special effects.
- Solve domain-specific rendering problems.
- Improve their analytical skills by learning how to identify and evaluate multiple approaches to solving rendering problems, and to analyze code examples that generate high-quality graphics images.
- Gain greater insight into the capabilities of OpenGL itself.
- Learn how to use OpenGL as a tool to solve challenging rendering problems.

Organizer

David Blythe
SGI

Lecturers

David Blythe
Brad Grantham
SGI

Tom McReynolds
Gigapixel, Inc.

Scott R. Nelson
Intel Corporation

30 An Interactive Introduction to OpenGL CAL D



An overview of creating interactive graphics programs using the OpenGL API. In addition to showing source code examples and generated images, instructors use interactive tutorials to allow students to interact with the calls of the API and immediately see the results of their inputs. By combining a lecture with interactive formats, the course allows students to develop a more intuitive feel for how the OpenGL API operates and how the calls are structured to make applications.

CAL

Schedule

8:30	Welcome & OpenGL Introduction Shreiner
9	Elementary Rendering Woo
9:45	Immediate Mode vs. Display Lists Angel
10	Break
10:15	Matrix Transformations Woo
11:15	Lighting Sheiner
Noon	Lunch
1:30	Texture Mapping Angel
2:30	Rasterization and Fragment Operations Shreiner
3	Break
3:15	Framebuffers Angel
4	Pixel Operations and Imaging Shreiner
4:30	Feedback and Picking Woo
4:45	Summary, Questions and Answers All

These tutorial programs run on any computer that supports OpenGL. Using interactive tutorial programs, instructors demonstrate how OpenGL processes geometry and transformations, specifies material and lighting properties, computes fog, and maps textures to geometry.

Organizer

Dave Shreiner
SGI

Lecturers

Edward Angel
University of New Mexico

Dave Shreiner
SGI

Mason Woo
World Wide Woo

31 Why Does it Do That? 10 Mysteries of Computer Artmaking Revealed A Art



Learn the concepts behind solutions to 10 common frustrations faced by virtually all artists and designers who use computers, such as:

“Why does my printout look so different from the image on my screen?”

“What resolution should I use for scanning?”

“What exactly does interpolation mean and how is it related to gradients, 3D shading, and animation?”

These concepts are taught from an artist-and-designer point of view using visual explanations and live demonstrations of popular software packages. Attendees also review relevant work by practicing computer artists who have harnessed this new medium in creative, effective ways.

Organizer

Anne Spalter
Brown University

Lecturer

Anne Spalter
Brown University

Room 515B

Schedule

- 1:30 What Am I Really Seeing When I “Zoom In”?
Spalter
- Why Do My Smooth, Seamless Screen Images Print Out Looking Grainy?
Spalter
- Why Does the White Space in My Digital Painting Make My File Larger?
Spalter
- What Exactly Does “Size” Mean in the Digital Painting and Photo-Editing World?
Spalter
- What Resolution Should I Scan at and Why?
Spalter
- What Do Filters Really Do?
Spalter
- What is the Difference Between “Paint” and “Draw” Programs?
Spalter
- How Can I Combine the Best of Paint and Draw Techniques?
Spalter
- Why Do Color Printouts Look So Different From Color on the Screen?
Spalter
- Why Does an Image that Looks Fine on One Platform Often Look Too Light or Dark on Another?
Spalter

32 CPU Extensions for Graphics and Video



CPU developers have taken the next step in the evolution of CPU design with the inclusion of SIMD floating point instructions on mainstream CPU’s. This course provides an overview of the two main CPU extension sets aimed at accelerating 3D graphics and video: 3DNow! and Katmai New Instructions (KNI). A general overview of both technologies and a discussion of the documents, tools, and example code that are available prepare attendees to make their own plans for software development and optimization.

This course assumes some familiarity with CPU architecture, including concepts such as processor cache, instruction fetch, instruction decode, execution units, arithmetic/logic unit (ALU), branch prediction logic, cycle counts, latency, throughput, single-instruction/multiple data (SIMD) instructions, etc. The ability to read C code is recommended. Programming experience with assembly language (particularly x86 assembly language) is very helpful.

Organizer

Randi Rost
3DLabs, Inc.

Lecturers

Richard Brunner
Intel Corporation

David Kaplowitz
Advanced Micro Devices, Inc.

Randi Rost
3DLabs, Inc.

Room 515B

Schedule

- 8:30 Introduction
Rost
- 8:40 3DNow! Technology Overview
Kaplowitz
- 10 Break
- 10:15 Streaming SIMD Extensions Technology Overview
Brunner
- 11:15 Developing High-Performance Software with 3DNow! And SSE
Rost
- 11:55 Wrap-Up and Questions
All

33 Modeling Techniques for Medical Applications

M Modeling



This course demonstrates the state of the art in interactive and real-time modeling in educational and clinical medical applications where graphical representations of organ anatomy and physiology are necessary. Applications include modeling the shape and motion of the heart; brain data registration for surgery; abdominal, laparoscopic, and liver surgery; modeling of breasts and soft tissue; registration methods for prostate cancer; blood flow simulation; modeling of joints, skin, and muscles for animation; organ visualization and segmentation methods; and haptic interfaces.

Petree Hall C

Organizer

Dimitris Metaxas
University of Pennsylvania

Lecturers

Nicholas Ayache
INRIA

James S. Duncan
Yale University

Sarah F.F. Gibson
Mitsubishi Electric Research Lab

Eric Grimson
Massachusetts Institute of Technology and Harvard University

Ron Kikinis
Brigham and Women's Hospital and Harvard Medical School

Nadia Magnenat Thalmann
University of Geneva

Dimitris N. Metaxas
University of Pennsylvania

34 Developing Shared Virtual Environments

IT Interactive Techniques



The emphasis of this course is on the practical issues related to designing and implementing shared virtual environment (VE) applications. The morning "design" session begins with an introduction to the history of shared VE development and the evolution path to today's architectures. Because designing a shared virtual reality application requires a series of choices that have important effects upon performance and function, the course investigates issues in software architectures, awareness management techniques, graphics APIs, object sharing, and object interoperability. The afternoon "implementation" session teaches attendees how to build shared VE applications quickly and easily, by leveraging development with pre-existing toolkits. Several popular packages are reviewed in detail from the point of view of the application builder. The designers of those toolkits provide in-depth tutorials on using their systems for maximum benefit.

Room 502B

Schedule

8:30	Introduction Capps
8:55	History of Shared VR Systems Zyda
9:25	Software Architectures Watsen
10	Break
10:15	Network Architectures Capps
10:45	Interest Management Greenhalgh
11:25	Managing Dynamic Shared State Singhal
Noon	Lunch
1:30	Introduction to Implementing Shared VE Systems Capps
1:45	MASSIVE/ DIVE Greenhalgh
2:20	Bamboo Abrams & Watsen
2:55	Break
3	HLA and Government Systems Morse
3:15	Internet Deployment and Language Choice Singhal
4:15	OpenCommunity / SPLINE Anderson
4:45	Conclusion Capps

Organizer

Michael Capps
Naval Postgraduate School

Lecturers

Howard Abrams
Michael Capps
Kent Watsen
Mike Zyda
Naval Postgraduate School

David Anderson
Mitsubishi Electric Research Lab

Chris Greenhalgh
Nottingham University

Katherine Morse
SAIC/DMSO

Sandeep Singhal
IBM Corporation

35 Motion Editing: Principles, Practice, and Promise

FX Animation & Special Effects



Motion editing techniques allow existing motions to be changed to meet new needs. Using these techniques, animators can fix imperfect motions, reuse motions from a library in multiple settings, and dynamically generate motions for interactive environments. This course begins its survey of recent technologies for motion editing by analyzing actual motion editing problems, then reviews the mathematical foundations for animation as a common vocabulary for discussing editing techniques. Some recent motion editing technologies, such as signal processing and space-time constraints, are introduced in a manner that presents their theory, implementation, and practical application. The course also reviews the relationship among various motion editing tools and how they can be integrated.

Organizer

Michael Gleicher
University of Wisconsin, Madison

Lecturers

Barton Gawboy
Mark Schafe
Anohana Production Management

Michael Gleicher
University of Wisconsin, Madison

Zoran Popovic
Carnegie Mellon University

Jeffrey Thingvold
LambSoft, Inc.

West Hall A

Schedule

8:30	Welcome and Introduction Gleicher
8:45	Demystifying Motion Animation Gawboy
9:45	Representing Characters and Motions 1 Grassia
10	Break
10:15	Representing Characters and Motions 2 Grassia
11	Motion Editing and Signal Processing Gleicher
Noon	Lunch
1:30	Motion Editing Tools Thingvold
2:15	Motion Creation with Editing in Mind Schafer
3	Break
3:15	Motion Transformations with Spacetime Constraints Gleicher
3:45	Physically-Based Motion Transformations Popovic
4:30	Panel Discussions All

36 Physically Based Modeling

M Modeling



Physically based modeling has become an important new approach to computer animation and computer graphics modeling. This course is targeted at researchers and implementors who wish to develop a solid understanding of physical methods as applied to animation and modeling. The material is of particular interest to those who wish to implement physically based modeling techniques, and/or to read and critically appraise technical papers in the area.

The primary goal for this course is straightforward: to teach participants to actually do physically based modeling. Bolstered by the extensive course notes, the student with good basic implementation skills should be able to implement the techniques presented, not by rote but confidently and with understanding. Course presentations favor visual, spatial explanations (including numerous examples on video) over formal symbol manipulation wherever feasible.

Organizer

David Baraff
Pixar Animation Studios

Lecturers

Michael Kass
Andrew Witkin
Pixar Animation Studios

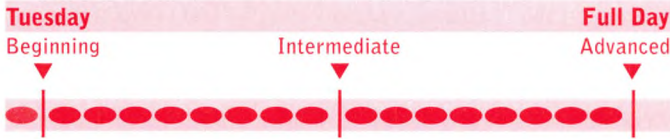
Room 502A

Schedule

8:30	Introduction
8:45	Differential Equation Basics Witkin
9:30	Particle Dynamics Witkin
10	Break
10:15	Rigid Body Dynamics I Baraff
11:15	Constrained Dynamics Witkin
Noon	Lunch
1:30	Implicit Methods of Cloth Simulation Kass and Baraff
2:30	Collision Detection Baraff and Kass
3	Break
3:15	Rigid Body Dynamics II Baraff
4	Tips, Tricks, and Hacks Witkins, Baraff, and Kass

37 Subdivision for Modeling and Animation

M Modeling FX Animation & Special Effects



Subdivision is an algorithmic technique for generating smooth surfaces as a sequence of successively refined polyhedral meshes. Subdivision algorithms are exceptionally simple, they work for arbitrary control meshes, and they produce globally smooth surfaces. Special choices of subdivision rules allow for the introduction of features into a surface in a simple way. Subdivision-based representations of complex geometry can be manipulated and rendered very efficiently, which makes subdivision a highly suitable tool for interactive animation and modeling systems.

This course covers the basic ideas of subdivision and a variety of different subdivision schemes. It details their properties, reviews their suitability for particular applications, and compares their relative merits. Strong emphasis is placed on practical issues. At the end of the course attendees are well prepared to implement the basic techniques as well as delve into the research literature on the subject.

Organizer

Denis Zorin
New York University

Lecturers

Tony DeRose
Pixar Animation Studios

Leif Kobbelt
Universität Erlangen

Peter Schröder
California Institute of Technology

Jos Stam
Alias|Wavefront

Joe Warren
Rice University

Denis Zorin
New York University

Room 515 A

Schedule

8:30	Foundations I: Basic Ideas Schröder and Zorin
10	Break
10:15	Foundations I: Basic Ideas (continued)
10:30	Foundations II: Evaluation and Survey of Subdivision Schemes Stam and Zorin
Noon	Lunch
1:30	Implementing Subdivision and Multiresolution Meshes Zorin
2:15	A Variational Approach to Subdivision Kobbelt
3	Break
3:15	Variational Subdivision Cookbook Warren
4	Subdivision Surfaces in the Making of Geri's Game DeRose

38 Haptics: From Basic Principles to Advanced Applications



A thorough introduction to haptics: its history, techniques, and recent advances, with a particular emphasis on applications. The first half of the course is a basic introduction to haptic devices, human psychophysics, haptic rendering techniques, and implementation issues. The second half covers several advanced application areas, including assembly and path planning, modeling deformable objects, telemanipulation, scientific applications, and modeling and rendering volumetric objects. The morning and afternoon sessions conclude with hands-on demonstrations.

Organizer

Ricardo Avila
General Electric Company

Lecturers

Ricardo Avila
General Electric Company

Cagatay Basdogan
Massachusetts Institute of Technology

Thomas Massie
Dan Staples
SensAble Technologies

Diego Ruspini
Stanford University

Kenneth Salisbury
Massachusetts Institute of Technology

Russell Taylor
University of North Carolina at Chapel Hill

Room 408A

Schedule

8:30	Introduction Salisbury
9:15	Haptic Modeling and Rendering Ruspini
10	Break
10:15	Implementation Staples
Noon	Lunch
1:30	Volume Haptics Avila
2:30	Deformable Objects Basdogan
3	Break
3:15	Telemanipulation Salisbury
3:45	Scientific Applications Taylor
4:15	Advanced Applications Demonstration Massie

39 Image-Based Modeling, Rendering, and Lighting



Image-based modeling and rendering differs from traditional graphics in that both the geometry and appearance of the scene are derived from real photographs. The techniques often allow for shorter modeling times, faster rendering speeds, and unprecedented levels of photorealism. This course explains and demonstrates a variety of ways of turning images into models and then back into renderings, including movie maps, panoramas, image warping, photogrammetry, light fields, and 3D scanning.

Topics include: computer vision and how it relates to image-based rendering techniques, and how to apply the techniques to animation and 3D navigation. The course also shows how global illumination techniques allow photorealistic modifications of image-based models and illustrates results from recent research and creative applications.

Organizer

Paul Debevec
University of California, Berkeley

Lecturers

Christoph Bregler
Stanford University

Michael F. Cohen
Richard Szeliski
Microsoft Research

Paul Debevec
University of California, Berkeley

Leonard McMillan
Massachusetts Institute of Technology

François X. Sillion
French National Institute for Computer Science and Control

Room 152

Schedule

8:30	Introduction and Overview Debevec
8:50	Image Formation Fundamentals and Using IBMR to Accelerate Rendering Sillion
10	Break
10:15	Determining Geometry from Images Szeliski
11	2D and 3D Image Warping McMillan
Noon	Lunch
1:30	LDI and Lightfield / Lumigraph Representatives Cohen
2:20	Image-Based Lighting Debevec
3	Break
3:15	Applications of IBMR in Human Animation Bregler
4:05	Applications of IBMR in Art and Cinema Debevec
4:40	Questions and Dialog All

40 Introduction to Programming With Java3D



Java3D is a new cross-platform API for developing 3D graphics applications in Java. Its feature set is designed to enable quick development of complex 3D applications and, at the same time, enable fast and efficient implementation on a variety of platforms, from PCs to workstations. Using Java3D, software developers can build cross-platform applications that build 3D scenes programmatically, or via loading 3D content from VRML, OBJ, and/or other external files. The Java3D API includes a rich feature set for building shapes, composing behaviors, interacting with the user, and controlling rendering details. In this course, participants learn the concepts behind Java3D, the Java3D class hierarchy, typical usage patterns, ways of avoiding common mistakes, animation and scene design techniques, and tricks for increasing performance and realism.

Organizer

Henry Sowizral
Sun Microsystems, Inc.

Lecturers

David R. Nadeau
San Diego Supercomputer Center and University of California, San Diego

Henry Sowizral
Sun Microsystems, Inc.

Petree Hall D

Schedule

8:30	Section 1 Introduction, Scene Graphs, Shapes, Appearance Building 3D content with a scene graph; building 3D shapes; controlling appearance
10	Break
10:15	Section 2 Groups, Transforms, Texture Mapping, Lighting Grouping shapes; transforming shapes; using special-purpose groups; introducing texture mapping; using texture coordinates; using raster geometry; lighting the environment
Noon	Lunch
1:30	Section 3 Universes, Viewing, Input, Behaviors Building a virtual universe; introducing the view model; viewing the scene; building a simple universe; using input devices; creating behaviors
3	Break
1:30	Section 4 Interpolators, Picking, Backgrounds, Fog Creating interpolator behaviors; using specialized behaviors; picking shapes; creating backgrounds; working with fog; conclusions

41 Volume Graphics

R Rendering



Volume graphics is an approach to handling conventional graphics applications with volumetric techniques. This course provides an overview of volume graphics, with a focus on volume modeling, volume manipulation, volume rendering, and their applications. It is divided into two portions structured as two half-day courses. The morning is devoted to fundamentals of volume graphics, modeling, and associated applications. The afternoon is devoted to volume rendering, manipulation, and associated applications. The course covers the technology and several major applications, available tools and techniques, the challenges confronting the field of volume graphics, and some of the advanced topics in the field.

Organizer

Ari Kaufman
State University of New York at Stony Brook

Lecturers

Rick Avila
William Lorensen
General Electric Company

Sarah Gibson
Hanspeter Pfister
Mitsubishi Electric Research Lab

Ari Kaufman
Milos Sramek
State University of New York at Stony Brook

J. Edward Swan II
The Naval Research Laboratory

Room 408B

Schedule

	Morning: Fundamentals and Modeling
8:30	Introduction to Volume Graphics Kaufman
9:30	Volume Sampling and Voxelization Sramek
10	Break
10:15	Distance Volumes Gibson
11:15	Volume Modeling and Medical Applications Lorensen
Noon	Lunch
	Afternoon: Rendering and Manipulation
1:30	Introduction to Volume Rendering and Manipulation Kaufman
1:35	Real-Time Ray Casting Pfister
2:30	Volume Deformation Gibson
3	Break
3:15	Volume Haptics Avila
4:15	Terrain Applications Swan

42 Color Science for Film, Video, and CGI



Introduction to the science behind image digitization, tone reproduction, and color reproduction in film, studio video, and computer generated imagery (CGI). It explains and demonstrates the color science that underlies each of these domains and details how color is represented and processed as images are transferred among them. Topics include the different forms of nonlinear coding used in film, video, and CGI; why one system's RGB does not necessarily match the RGB of another system; color measurement instruments such as densitometers and colorimeters; monitor calibration; and color management technology. This course is suitable for people who have no fear of mathematics and who are experienced in creating or manipulating digital images.

Organizer

Charles Poynton
Poynton Vector

Lecturer

Charles Poynton
Poynton Vector

Room 151

Schedule

8:30	Basic Principles Poynton
9	Luminance, Lightness, and Gamma Poynton
9:45	Raster Images in Computing Poynton
10	Break
10:15	Raster Images in Computing (continued)
10:45	Raster Images in Computing (continued) Poynton
11:15	Printing
Noon	Lunch
1:30	Color Science for Video Poynton
3	Break
3:15	Constant Luminance Poynton
4	Luma, Color Differences Poynton

4.3 Impact Papers/Course Sessions



These Papers were selected by the Papers Committee for extended presentation in a Course session and will also be presented in the Papers session. They were chosen based on the overall impact they are expected to make in computer graphics and interactive techniques.

West Hall B
1:30 - 5 pm

Graphical Modeling and Animation of Brittle Fracture

FX Animation & Special Effects

In 1998, the use of simulated motion in several commercial animations demonstrated that passive simulation is a powerful technique for animating secondary motions. This paper augments techniques for simulation of flexible objects by including models for crack initiation and propagation in three-dimensional volumes. By analyzing the stress tensors computed over a finite element model, the simulation determines where cracks should initiate and in what directions they should propagate.

James F. O'Brien
Jessica K. Hodgins
Georgia Institute of Technology

(See Papers: Fluids & Fracture, Wednesday, 11 August, 4:15 - 6 pm)

Teddy: A Sketching Interface for 3D Freeform Design

A sketching interface for quickly and easily designing freeform models such as stuffed animals and other rotund objects. The user draws several 2D freeform strokes interactively on the screen, and the system automatically constructs plausible 3D polygonal surfaces. The system supports several modeling operations, including construction of a 3D polygonal surface from a 2D silhouette drawn by the user.

Takeo Igarashi
Hidehiko Tanaka
University of Tokyo

Satoshi Matsuoka
Tokyo Institute of Technology

(See Papers: Interactive Techniques, Friday, 13 August, 2:15 - 4 pm)

A Morphable Model for the Synthesis of 3D Faces

A new technique for modeling textured 3D faces. Three-dimensional faces can either be generated automatically from one or more photographs, or modeled directly through an intuitive user interface. Users are assisted in two key problems of computer-aided face modeling.

First, new face images or new 3D face models can be registered automatically by computing dense one-to-one correspondence to an internal face model. Second, the approach regulates the naturalness of modeled faces, avoiding faces with an "unlikely" appearance.

Volker Blanz
Thomas Vetter
Max Planck Institute for Biological Cybernetics

(See Papers: Data Captures Inverse Modeling, Thursday, 12 August, 10:30 am - 12:15 pm)

Course Organizers

Ricardo Avila

General Electric Company
1 Research Circle
KWC-220A
Niskayuna, New York 12309 USA

Mike Bailey

San Diego Supercomputer Center
PO Box 85608
San Diego, California 92186 USA

Norm Badler

University of Pennsylvania
200 South 33rd Street
Philadelphia, Pennsylvania 19104 USA

David Baraff

Pixar Animation Studios
1001 West Cutting Boulevard
Richmond, California 94804 USA

Dirk Bartz

WIS/GRIS Universität Tübingen
Auf Der Morgenstelle 10/c9
Tübingen, d72076
GERMANY

David Blythe

SGI
39001 West Twelve Mile Road
Farmington, Michigan 48331 USA

Michael Capps

Naval Postgraduate School
Code CS/CM
Department of Computer
Spanagel Hall 250
Monterey, California 93943 USA

Keith Cok

SGI
39001 West Twelve Mile Road
Farmington, Michigan 48331 USA

Perry Cook

Princeton University
35 Olden Street
Princeton, New Jersey 08544 USA

Brian Curless

University of Washington
Department of Computer Science,
Sieg 127
PO Box 352350
Seattle, Washington 98195 USA

Paul Debevec

University of California, Berkeley
387 Soda Hall, #1776
Berkeley, California 94720 USA

David Ebert

University of Maryland, Baltimore
County
DSEE Department
ECS 210 1000 Hilltop Circle
Baltimore, Maryland 21250 USA

Nahum Gershon

The MITRE Corporation
1158 26th Street Suite 530
Santa Monica, California 90403 USA

Michael Gleicher

University of Wisconsin, Madison
1210 West Dayton Street
Madison, Wisconsin 53706 USA

Stuart Green

LightWork Design Ltd.
Rutledge House
78 Clarkehouse Road
S10-215 Sheffield
UNITED KINGDOM

Larry Gritz

Pixar Animation Studios
1001 West Cutting Boulevard
Richmond, California 94804 USA

Ardeshir Goshtasby

Wright State University
303 Russ Engineering Center
Dayton, Ohio 45435 USA

Andrew Hanson

Indiana University
Lindley Hall 215
Bloomington, Indiana 47405

Christopher Healey

North Carolina State University
407 EGRC Computer Science
Department
Raleigh, North Carolina 27695 USA

Pam Hogarth

Gnomon, Inc.
1015 North Cahuenga Boulevard,
Suite 5430
Hollywood, California 90038 USA

Henrik Wann Jensen

Massachusetts Institute of
Technology 545 NE 43-247
Cambridge, Massachusetts 02139 USA

Ari Kaufman

State University of New York at
Stony Brook
Department of Computer Science
Stony Brook, New York 11794 USA

William Lorenson

General Electric Company
KW/C223
1 Research Circle
Niskayuna, New York 12309 USA

Kwan-Liu Ma

Center for Image Processing
One Shields Avenue
Davis, California 95616 USA

Dinesh Manocha

University of North Carolina at
Chapel Hill
Department of Computer Science
Sitterson Hall
Chapel Hill, North Carolina 27599 USA

Thomas Massie

SensAble Technologies
215 First Street
Cambridge, Massachusetts 02142 USA

Ken Martin

Kitware Inc.
469 Clifton Corporate Parkway
Clifton Park, New York 12065 USA

Dimitris Metaxas

University of Pennsylvania
200 South 33rd Street
Department of Computer and
Information Science
Philadelphia, Pennsylvania 19104 USA

Michael O'Rourke

Pratt Institute
Department of Computer Graphics
200 Willoughby Avenue
Brooklyn, New York 11231 USA

Charles Poynton

Poynton Vector
56 A Lawrence Avenue East
Toronto, Ontario M4N 1S3
CANADA

Theresa-Marie Rhyne

Lockheed Martin/U.S. EPA
Visualization Center
86 Alexander Drive
Research Triangle Park,
North Carolina 27711 USA

Daniel Rice

Sun Microsystems, Inc.
901 San Antonio Road
MS MPK27-301
Palo Alto, California 94303 USA

Jarek Rossignac

Georgia Institute of Technology
GVU Center
801 Atlantic Drive
Atlanta, Georgia 30332 USA

Randi Rost

3DLabs, Inc.
141 South College Avenue
Suite 109
Fort Collins, Colorado 80524 USA

Holly Rushmeier

IBM T.J. Watson Research Center
30 Saw Mill River Road
Hawthorne, New York 10532 USA

Dave Schreiner

SGI
2011 North Shoreline Boulevard
M/S 8U-590
Mountain View, California 94043 USA

Ann Spalter

Brown University
Department of Computer Science
PO Box 115 Watterman Street
Providence, Rhode Island 02912 USA

Henry Sowizral

Sun Microsystems, Inc.
901 San Antonio Road
MS MPK27-301
Palo Alto, California 94303 USA

Maureen Stone

StoneSoup Consulting
191 Pinelane
Los Altos, California 94022 USA

Luiz Velho

Instituto de Matemática Pura e
Aplicada
Estrada Dona Castorina 110
Rio de Janeiro BRAZIL

Denis Zorin

New York University
715 Broadway, 12th Floor
New York, New York 10003 USA

Papers & Panels

SIGGRAPH 99 Papers: The premier international forum for the latest and most significant findings in computer graphics and interactive techniques. Papers are submitted for review by a committee of world-renowned experts in computer graphics. Each accepted paper is presented by the author(s) at SIGGRAPH 99 and printed in the field's premier archive, the SIGGRAPH Conference Proceedings.

SIGGRAPH 99 Panels: A highly interdisciplinary program that sparks animated discussions and provides thought-provoking insights from some of the top professionals in the interactive and graphics world. Panels explore the art and science of image and interface, and address the technical, practical, aesthetic, and social challenges that we face as we build the future into the next millennium. After their presentations, authors and panelists move on to practical demonstrations in the Creative Applications Lab: The Digital Cafe (West Hall A) and informal discussions in the Technical Lounge located in the West Hall Lobby.



Papers Chair

Alyn Rockwood
Power Take-Off Software, Inc.



Panels Chair

Jeff Jortner
Sandia National Laboratories

Location

See pages 36 - 44

Days

Wednesday 11 August 10:30 am - 6 pm
Thursday 12 August 8:30 am - 6 pm
Friday 13 August 8:30 am - 5:30 pm

Hours

Papers Committee

- Kurt Akeley
SGI
- Chandrajit Bajaj
University of Texas at Austin
- Ronen Barzel
Pixar Animation Studios
- Gary Bishop
University of North Carolina at Chapel Hill
- Kellogg Booth
The University of British Columbia
- Michael Cohen
Microsoft Research
- Rob Cook
Pixar Animation Studios
- Tony DeRose
Pixar Animation Studios
- David Dobkin
Princeton University
- George Drettakis
iMAGIS/GRAVIR
- Adam Finkelstein
Princeton University
- Eugene Fiume
Alias|Wavefront
University of Toronto
- Henry Fuchs
University of North Carolina at Chapel Hill
- Markus Gross
Swiss Federal Institute of Technology
- Chuck Hansen
University of Utah
- Hugues Hoppe
Microsoft Research
- Michal Irani
The Weizmann Institute of Science
- Thomas Jensen
think3
- Michael Lounsberry
Alias|Wavefront
- Jitendra Malik
University of California at Berkeley
- Joe Marks
Mitsubishi Electric Research Laboratory
- Nelson Max
Lawrence Livermore National Laboratory

- Leonard McMillan
Massachusetts Institute of Technology
- Gary Meyer
University of Oregon
- Gavin Miller
Interval Research Corporation
- Steve Molnar
NVIDIA
- Tomoyuko Nishita
University of Tokyo
- Dan Olsen
Brigham Young University
- Randy Pausch
Carnegie Mellon University
- Ken Perlin
New York University
- Pete Shirley
University of Utah
- Mel Slater
University College London
- Greg Turk
Georgia Institute of Technology
- Michiel Van de Panne
University of Toronto
- Luiz Velho
Instituto de Matematica Pura e Aplicada
- Panels Committee**
- Joanna Alexander
Zombie
- Rebecca Allen
University of California, Los Angeles
- Aliza Corson
Walt Disney Feature Animation
- Clark Dodsworth
Digital Illusion/Osage Associates
- Branko Gerovac
Massachusetts Institute of Technology
- Andrew Glassner
Microsoft Research
- Robert Judd
Los Alamos National Laboratory
- Alyce Kaprow
the new studio
- Administrative Assistant**
- Diana Friesen

Wednesday 11 August

10:30 am - 12:15 pm

Papers West Hall A

Animation  Animation & Special Effects

Chair

Michiel Van de Panne University of Toronto

Physically Based Motion Transformation

Zoran Popovic Carnegie Mellon University
Andrew Witkin Pixar Animation Studios

Voice Puppetry

Matthew Brand
Mitsubishi Electric Research Laboratory

Cognitive Modeling: Knowledge, Reasoning and Planning for Intelligent Characters

John Funge
Xiaoyuan Tu
Intel Corporation
Demetri Terzopoulos University of Toronto

A Hierarchical Approach to Interactive Motion Editing for Human-Like Figures



Jehee Lee
Sung Yong Shin
Korea Advanced Institute of Science and Technology

Panel West Hall B

Hot Topics in Graphics Hardware

Leading graphics hardware designers discuss hot topics and the state of the art. Panelists include participants in the Graphics Hardware Workshop held earlier in the week and influential players in the graphics hardware industry.

Organizer

Nick England
University of North Carolina at Chapel Hill

Panelist Selection Committee

Steve Molnar
Bengt-Olaf Schneider
Graphics Hardware Workshop Chairs

Gunter Knittel and Hanspeter Pfister
Graphics Hardware Workshop Papers Chairs

Panel Petree Hall C

How to Cheat and Get Away With It: What Computer Graphics Can Learn from Perceptual Psychology

 Interactive Techniques

Visual perception and visual representation are intricately related, with research in each of these areas benefiting from and potentially facilitating research in the other. This panel provides a forum for wider exchange of information and ideas between researchers in psychology, who are using computer graphics to facilitate their investigations into the fundamental processes of visual perception, and researchers in computer graphics, who are using insights from psychology to guide the development of algorithms and approaches for more effective visual representation.

Organizers

Victoria Interrante University of Minnesota
Daniel Kersten University of Minnesota

Panelists

David Brainard
University of California, Santa Barbara
Heinrich Buelthoff
Max Planck Institute for Biological Cybernetics
James A. Ferwerda Cornell University
Pawan Sinha University of Wisconsin

Wednesday 11 August

2:15 - 4 pm

Papers West Hall A

Modeling **M** Modeling

Chair

Michael Lounsbery Alias|Wavefront

Robust Mesh Watermarking

Emil Praun
Adam Finkelstein
Princeton University
Hugues Hoppe Microsoft Research

Interpolating Nets of Curves by Smooth Subdivision Surfaces

Adi Levin Tel Aviv University

ArtDefo Accurate Real Time Deformable Objects **CALD**

Doug James
Dinesh K. Pai
University of British Columbia

Panel West Hall B

CG Crowds: The Emergence of the Digital Extra **FX** Animation & Special Effects

From stampeding dinosaurs to crawling ants, crowds have been used more and more in film production in recent years. Beyond behavioral simulation, what are the challenges of creating a crowd system for use in a feature film? How usable is a pure behavioral system, and how much "manual" control must be provided when the goal is to create crowds that help tell a story? How do you simulate and render the behavior of thousands of characters? This panel compares some of the solutions implemented for a number of different feature films.

Moderator

Juan Buhler Pacific Data Images

Panelists

Jonathan Gibbs Pacific Data Images
Christophe Hery Industrial Light & Magic
Dale McBeath Pixar Animation Studios
Saty Raghavachary DreamWorks SKG

Papers Petree Hall C

Perception & Lighting

Chair

Gary Meyer University of Oregon

A Perceptually Based Physical Error Metric for Realistic Image Synthesis

Mahesh Ramasubramanian
Sumanta N. Pattanaik
Donald P. Greenberg
Cornell University

LCIS: A Boundary Hierarchy for Detail-Preserving Contrast Reduction

Jack Tumblin
Greg Turk
Georgia Institute of Technology

A Practical Analytic Model for Daylight

A.J. Preetham
Peter Shirley
Brian E. Smits
University of Utah

Diffraction Shaders

Jos Stam Alias|Wavefront

Wednesday 11 August

4:15 - 6 pm

Papers West Hall A**Fluids & Fracture****Chair**

Chuck Hansen University of Utah

Subdivision Schemes for Fluid FlowHenrik Weimer
Joe Warren
Rice University**Stable Fluids** CAL D

Jos Stam Alias|Wavefront

Computational Fluid Dynamics in a Traditional Animation Environment

FX Animation & Special Effects

Patrick Witting DreamWorks SKG

Graphical Modeling and Animation of Brittle Fracture

FX Animation & Special Effects

James F. O'Brien
Jessica K. Hodgins
Georgia Institute of Technology**Panel Petree Hall C****Natural and Invisible Human Interfaces**

IT Interactive Techniques R Rendering

Huge advances in interface modalities are evident and imminent. This panel demonstrates and explores the most interesting, promising, and clever of these new developments, and their integration into exciting multimodel systems. Panelists take positions ranging from incremental to radical, and emphasize demonstrable and practical techniques.

Organizer

Michael Harris Bear Systems, Inc.

PanelistsBill Buxton Alias|Wavefront
Caleb Chung Giving Toys, Inc.
Clark Dodsworth Osage Associates
Hiroshi Ishii
Massachusetts Institute of Technology**Panel West Hall B****3D Tracking in FX Production: Blurring the Line Between the Virtual and the Real** FX Animation & Special Effects

We are about to see an explosion of 3D tracking applications and related technologies. This panel reveals how the technology is being used today in film production and looks into the future to predict how its use will increase and expand.

Though its roots go back at least 20 years in image processing techniques, 3D tracking is exerting a very direct impact on today's visual effects industry. The Academy of Motion Picture Arts and Sciences presented two Technical Achievement Awards this year to developers (both are on the panel) of 3D tracking technology.

Moderator

Richard Hollander Rhythm & Hues Studios

Organizer

Jacquelyn Ford Morie Rhythm & Hues Studios

PanelistsThaddeus Beier Hammerhead Productions
Rod G. Bogart Industrial Light & Magic
Doug Roble Digital Domain, Inc.
Arthur Zwern Geometrix, Inc.**Thursday 12 August**

8:30 - 10:15 am

Papers West Hall A**Efficient Lighting** R Rendering**Chair**

Tomoyuki Nishita University of Tokyo

Direct Illumination With Lazy Visibility EvaluationDavid Hart
Philip Dutré
Donald P. Greenberg
Cornell University**Computing Exact Shadow Irradiance Using Splines**Michael M. Stark
Elaine Cohen
Richard F. Riesenfeld
University of Utah
Tom Lyche University of Oslo**Reflection-Space Image Based Rendering**Brian Cabral
Marc Olano
Phil Nemeč
SGI**Realistic, Hardware-Accelerated Shading and Lighting** CAL DWolfgang Heidrich
Hans-Peter Seidel
Universität Erlangen**Tracing Ray Differentials**

CAL D

Homan Igehy Stanford University

Thursday 12 August

8:30 - 10:15 am

Panel

West Hall B

Research and Development for Film Production

What exactly does it mean to research and develop internal technologies in film production companies? Why are these companies investing in creative technical staff, and how do they manage to push the technical envelope while satisfying concrete production needs?

Beyond the creation of exciting new visuals, production companies also face the challenge of reinventing new production methodologies to better take advantage of the flexibility of digital production infrastructures. The main issue is to find a good balance in this complex alchemy of business, art, and science. Through presentations and discussions, this panel allows key technologists to share their views on the subject and survey the various philosophies and strategies that they implement to integrate digital technology as a fundamental part of the production process.

Organizer

Christian Rouet Lucas Digital Ltd.

Panelists

Keith Goldfarb Rhythm & Hues Studios
Ed Leonard DreamWorks SKG
Darwyn Peachey Pixar Animation Studios
Ken Pearce Pacific Data Images
Enrique Santos Digital Domain, Inc.
Paul Yanover Disney Feature Animation

Panel

Petree Hall C

Visualizing Large-Scale Datasets: Challenges and Opportunities

Despite unprecedented growth in the volume of data from both computational simulations and instrument/sensor sources, our ability to manipulate, explore, and understand large datasets is lagging behind. Visualization transforms raw data into vivid 2D or 3D images that help scientists reveal important features and trends in the data, convey ideas, and communicate their findings. However, the massive data volumes create new challenges for visualization researchers and industry, and make previous visualization approaches impractical. The new generation of visualization methods must scale well with the growing data volumes and cope with other parts of the data analysis pipeline, such as storage and display devices.

To accelerate development of new data manipulation and visualization methods for massive datasets, the National Science Foundation and the US Department of Energy have sponsored a series of workshops on relevant topics. This panel discusses the data and visualization concepts that have emerged from the workshop series, including innovations in data handling, representations, telepresence, and visualization.

Organizer

Kwan-Liu Ma University of California, Davis

Moderator

John Van Rosendale US Department of Energy

Panelists

Stephen Eick
Visual Insights/Lucent Technologies
Bernd Hamann University of California, Davis
Philip Heermann Sandia National Laboratory
Christopher Johnson University of Utah
Mike Krogh
Computational Engineering International, Inc.

Thursday 12 August

10:30 am - 12:15 pm

Papers

West Hall A

Data Captures Inverse Modeling

M Modeling

Chair

Markus Gross
Swiss Federal Institute of Technology

A Morphable Model for the Synthesis of 3D Faces

Volker Blanz
Thomas Vetter
Max Planck Institute for Biological Cybernetics

Creating Generative Models From Range Images

Ravi Ramamoorthi Stanford University
James Arvo California Institute of Technology

Environment Matting and Compositing

Douglas E. Zongker
Dawn M. Werner
Brian Curless
David H. Salesin
University of Washington

Inverse Global Illumination: Recovering Reflectance Models of Real Scenes From Photographs

Yizhou Yu
Paul Debevec
Jitendra Malik
Tim Hawkins
University of California, Berkeley

Thursday 12 August

10:30 am - 12:15 pm

Panel West Hall B**Scene Graph APIs: Wired or Tired?**

Following widespread adoption and use, the scene graph model has proven to be a popular and powerful development tool, because it enables rapid creation of portable and efficient graphics applications. Unfortunately, not all applications fit within the boundaries imposed by a scene graph model. This panel examines issues related to scene graph technology.

Organizer

Wes Bethel

R3vis Corporation and NERSC/LBNL

Panelists

Carl Bass Autodesk, Inc.

Sharon Rose Clay SGI

Michael T. Jones Intrinsic Graphics, Inc.

Brian Hook id Software, Inc.

Henry Sowizral Sun Microsystems, Inc.

Andries van Dam Brown University

Papers Petree Hall C**Texturing****R** Rendering**Chair**

Luiz Velho

Instituto de Matematica Pura e Aplicada

Modeling and Rendering of Weathered Stone**A** Art

Julie Dorsey

Alan Edelman

Justin Legakis

Henrik Wann Jensen

Hans K hling Pedersen

Massachusetts Institute of Technology

Pattern-Based Texturing Revisited

Fabrice Neyret

Marie-Paule Cani

iMAGIS/GRAVIR

Feline: Fast Elliptical Lines for Anisotropic Texture Mapping

Joel McCormack

Keith I. Farkas

Norman P. Jouppi

Compaq Computer Corporation

Ronald Perry

Mitsubishi Electric Research Laboratory

Thursday 12 August

2:15 - 4 pm

Papers West Hall A**Hardware****Chair**

Steve Molnar NVIDIA Corporation

The VolumePro Real-Time Ray-Casting System

Hanspeter Pfister

Jan Hardenbergh

Jim Knittel

Hugh Lauer

Larry Seiler

Mitsubishi Electric Research Laboratory

Deep Compression for Streaming Texture Intensive Animations

Daniel Cohen-Or

Yair Mann

Shachar Fleishman

Tel Aviv University

Optimization of Mesh Locality for Transparent Vertex Caching

Hugues Hoppe Microsoft Research

Fast Computation of Generalized Voronoi Diagrams Using Graphics Hardware

Kenneth Hoff

Tim Culver

John Keyser

Ming Lin

Dinesh Manocha

University of North Carolina at Chapel Hill

Panel West Hall B**Get Real! Global Illumination for Film, Broadcast, and Game Production****R** Rendering

In this new era of computer-generated virtual sets and environments, the stakes are raised if we hope to mix and match reality with synthetic imagery. This panel discusses the practical implications of using global illumination techniques to deliver realism in film, broadcast, and game production. Panelists reveal specific tricks of the trade for using global illumination programs to create highly realistic virtual environments. They review successful examples of fabricated realism in the entertainment industry from an historical standpoint and discuss case studies with industry representatives.

Organizer

Stuart Feldman Discreet Logic

Panelists

Craig Barron Matte World Digital

Scott Lelieur Studio DVP

George Murphy Industrial Light & Magic

Dave Walvoord Blue Sky Studios

Panel Petree Hall C**Experiential Computer Art****A** Art

Is interactive computer art at the forefront of contemporary art, or is this an esoteric medium that indulges only a few? Where is it going? Where has it been? This panel attempts to answer these questions and begin a dialogue with the audience on issues surrounding interactive computer installations as an artform.

Organizer

Lucy Petrovich University of Arizona

Panelists

Maurice Benayoun Z.A Production

Tammy Knipp Florida Atlantic University

Thomas Lehner Stadtwerkstatt

Laurent Mignonneau

Christa Sommerer

ATR Media Integration & Communications Research Laboratories

Thursday 12 August

4:15 - 6 pm

Papers West Hall A

Image-Based Rendering

Chair

Leonard McMillan
Massachusetts Institute of Technology

A Real-Time Low-Latency Hardware Light-Field Renderer

Matthew Regan
Gavin Miller
Steven Rubin
Chris Kogelnik
Interval Research Corporation

LDI Tree: A Hierarchical Representation for Image-Based Rendering

Chun-Fa Chang
Gary Bishop
Anselmo Lastra
University of North Carolina at Chapel Hill

Rendering with Concentric Mosaics

CALP

Heung-Yeung Shum
Li-Wei He
Microsoft Research

Automatic Image Placement to Provide a Guaranteed Frame Rate

Daniel G. Aliaga Bell Labs
Anselmo Lastra
University of North Carolina at Chapel Hill

Panel West Hall B

Visual Effects: Incredible Effects vs. Credible Science

FX Animation & Special Effects

Can visual effects balance scientific truthfulness, art, and storytelling? Scientific research, exploration, and journalism have given the public access to an extraordinary amount of information and imagery. The minute our audience says, "I don't believe it," we've lost our credibility and their attention. As a result, directors are holding visual effects supervisors to an even higher standard. The fantastic gains in software and imagery quickly become old news. Digital artists and software developers scramble to deliver a better product.

How should we educate our digital artists to meet the challenge? Should science drive the art of storytelling and film? Is it OK to break the rules of science for creative purposes? The quality of our images has also raised an ethical question in a world drenched with media. The line between journalism and entertainment is blurred. What seems real is not always truthful.

Organizer

George Suhayda Sony Pictures Imageworks

Panelists

William T. Douthitt National Geographic
Rob Minkoff
Jay Redd
Sony Pictures Imageworks
Syd Mead Syd Mead Incorporated
Stuart Sumida
California State University, San Bernardino
Bill Westenhofer Rhythm & Hues Studios

Panel Petree Hall C

How SIGGRAPH Research is Utilized in Games

Game developers are always looking for methods to improve performance and visual appeal. To that end, research results presented at the annual SIGGRAPH conference are closely analyzed by developers of interactive games for their applicability. In this panel, leading game developers explain the advances in game graphics they have achieved by applying recent research results and discuss promising graphics technologies.

Moderator

Chris Hecker definition six, Inc.

Organizers

Alex Dunne Game Developer Magazine
Alan Yu Game Developers Conference

Panelists

Seamus Blackley Microsoft Corporation
Peter Lincroft Ansible Software, Inc.
Casey Muratori Gas Powered Games
Michael 'Saxs' Persson Shiny Entertainment

Friday 13 August

8:30 - 10:15 am

Papers West Hall A**Meshes & Morphing****M** Modeling**Chair**

Hugues Hoppe Microsoft Research

Implicit Fairing of Irregular Meshes Using Diffusion and Curvature FlowMathieu Desbrun
Mark Meyer
Peter Schröder
Al Barr
California Institute of Technology**Multiresolution Signal Processing for Meshes**Igor Guskov Princeton University
Wim Sweldens Bell Labs
Peter Schröder
California Institute of Technology**Shape Transformation Using Variational Implicit Functions**Greg Turk
James O'Brien
Georgia Institute of Technology**Multiresolution Mesh Morphing**Aaron Lee
David Dobkin
Princeton University
Wim Sweldens Bell Labs
Peter Schröder
California Institute of Technology**Panel West Hall B****Visual Storytelling****FX** Animation & Special Effects

When cinematic storytelling is at its best, the visual imagery furthers the narrative by establishing the world in which the story takes place and setting the emotional tone as each sequence unfolds. While this is a well understood practice in traditional filmmaking, the language of digital filmmaking is just now being developed. Using "A Bug's Life" as a case study, panelists examine this issue by presenting the creative goals that drove the project and discussing the creative and technical directions they pursued to accomplish these goals.

Organizer

Graham Walters Pixar Animation Studios

PanelistsSharon Calahan
Bill Cone
Ewan Johnson
Tia Kratter
Glenn McQueen
Bob Pauley
Pixar Animation Studios**Friday 13 August**

10:30 am - 12:15 pm

Papers West Hall A**Virtual Reality****IT** Interactive Techniques**Chair**

Randy Pausch Carnegie Mellon University

Balancing Fusion, Image Depth and Distortion in Stereoscopic Head-Tracker DisplaysZachary Wartell
Larry Hodges
William Ribarsky
Georgia Institute of Technology**Walking > Walking-in-Place > Flying, in Virtual Environments**Martin Usoh
Anthony Steed
Mel Slater
University College London
Kevin Arthur
Mary C. Whitton
Rui Bastos
Frederick P. Brooks, Jr.
University of North Carolina at Chapel Hill**Real-Time Acoustic Modeling for Distributed Virtual Environments** **CAL D**Thomas A. Funkhouser
Patrick Min
Princeton University
Ingrid Carlbom Bell Labs**Creating a Live Broadcast from a Virtual Environment** **CAL D**Chris Greenhalgh
Steve Benford
Ian Taylor
University of Nottingham
John Bowers Royal Institute of Technology
Graham Walker BT Laboratories
John Wyver Illuminations Television**Panel West Hall B****Function and Form of Visual Effects in Animated Films****FX** Animation & Special Effects

When considering effects in computer-animated films, people often ask: "Isn't the whole thing an effect?" This panel discusses the definition of effects and their place in production.

How do effects differ between animated and live-action films? Computer animators and supervisors review the different levels of realism and styles for effects that animated films offer.

Organizer

Jennifer Yu Pacific Data Images

PanelistsKen Bielenberg
Aparva Shah
Pacific Data Images
Jim Hillin Walt Disney Feature Animation
Eben Ostby Pixar Animation Studios
Neville Spiteri Square USA

Friday 13 August

2:15 - 4 pm

Papers West Hall A

Interactive Techniques

IT Interactive Techniques

Chair

Ken Perlin New York University

Emancipated Pixels: Real-World Graphics in the Luminous Room

John Underkoffler

Brygg Ullmer

Hiroshi Ishii

Massachusetts Institute of Technology

Skin: A Constructive Approach to Modeling Free-Form Shapes

Lee Markosian

Jonathan Cohen

Thomas Crulli

John Hughes

Brown University

Six-Degrees-of-Freedom Haptic Rendering Using Voxel Sampling

CAL D

William A. McNeely

Kevin D. Puterbaugh

James J. Troy

The Boeing Company

Teddy: A Sketching Interface for 3D Freeform Design

A Art **CAL D**

Takeo Igarashi

Hidehiko Tanaka

University of Tokyo

Satoshi Matsuoka

Tokyo Institute of Technology

Panel West Hall B

Digital Watermarking: What Will it Do for Me? And What it Won't!

As the need increases for protection of intellectual property rights and integrity of digital information, digital watermarking has received more and more attention and concern. The first generation of watermarking systems focused on still image and video, in which high redundancy can be used to embed the watermark. But the need for protection goes beyond the image. Now, we face a new challenge, to watermark everything including 3D, holographic graphics, VRML and XML files, and stereo audio.

This panel presents world-class experts in digital watermarking as well as end-users (artists and content providers), who discuss and debate the issues, such as what can be watermarked, how useful is the watermark, and standardization activities.

Organizer

Jian Zhao

Fraunhofer Center for Research in Computer Graphics, Inc. and MediaSec Technologies LLC

Panelists

Eckhard Koch MediaSec Technologies LLC

Joe O'Ruanaidh Siemens Corporate Research

Minerva Yeung Intel Corporation

Friday 13 August

4:15 - 6 pm

Papers West Hall A

Imaginative Rendering

R Rendering

Chair

Adam Finkelstein Princeton University

Digital Facial Engraving

Victor Ostromoukhov

Ecole Polytechnique Federale de Lausanne

Multi-Color and Artistic Dithering **A** Art

Victor Ostromoukhov

Roger D. Hersch

Ecole Polytechnique Federale de Lausanne

Art-Based Rendering of Fur, Grass, and Trees

A Art

Michael Kowalski

Lee Markosian

J. D. Northrup

John Hughes

Brown University

Lubomir Bourdev Adobe Systems, Inc.

Ronen Barzel Pixar Animation Studios

View-Dependent Geometry **A** Art

Paul Rademacher

University of North Carolina at Chapel Hill

Panel West Hall B

Mixed Reality: Where Real and Virtual Worlds Meet

IT Interactive Techniques **R** Rendering

Ever since Ivan Sutherland's development of the first head-tracked, see-through, head-mounted graphics display, researchers have been exploring the mixture of real and virtual objects. On one end of the spectrum is the real world itself – seen, heard, and felt without any virtual intervention. On the other end is the fully synthesized virtual world – theoretically a replacement for the real world, experienced through computer displays. This panel addresses some of the many ways in which virtual and real worlds are being combined in computer user interfaces to create "mixed reality." Topics range from augmented reality to augmented virtuality.

Organizer

Steven Feiner Columbia University

Panelists

Henry Fuchs

University of North Carolina at Chapel Hill

Takeo Kanade Carnegie Mellon University

Gudrun Klinker

Technische Universität München

Paul Milgram University of Toronto

Hideyuki Tamura

Mixed Reality Systems Laboratory

Panel Organizers/Paper Contacts

Panel Organizers

Craig Barron

Matte World Digital
24 Digital Drive, Suite 6
Novato, California 94949 USA

Wes Bethel

R3vis Corporation &
NERSC/LBNL
PO Box 979
Novato, California 94948 USA

Don Brutzman

Naval Postgraduate School
Monterey, California 93943 USA

Rob Coleman

PO Box 2459
San Rafael, California 94912 USA

Alex Dunne

Miller Freeman Inc./Game
Developer Magazine
600 Harrison Street
San Francisco, California 94107
USA

Nick England

University of North Carolina
Department of Computer Science
CB# 3175 Sitterson Hall
Chapel Hill, North Carolina 27514
USA

Stuart Feldman

Discreet
10 Duke Street
Montréal, Québec H3C 2L7 USA

Jacquelyn Ford Morie

Rhythm & Hues Studios
1543 Hill Drive
Los Angeles, California 90041 USA

Steven Feiner

Columbia University
Department of Computer Science
500 West 120th Street, 450 CS
Building
New York, New York 10027 USA

Michael Harris

Bear Systems, Inc.
6825 Lisa Lane
Atlanta, Georgia 30338 USA

Victoria Interrante

University of Minnesota
4-192 EE/CS Building
200 Union Street, SE
Minneapolis, Minneapolis 55455
USA

Kwan-Liu Ma

University of California, Davis
Center for Image Processing &
Integrated Computing
One Shields Avenue
Davis, California 95616 USA

Lucy Petrovich

University of Arizona
College of Fine Arts
Music Building, Room 137
P.O. Box 210004
Tucson, Arizona 85721 USA

Christian Rouet

Industrial Light + Magic
PO Box 2459
San Rafael, California 94912 USA

George Suhayda

Sony Pictures Imageworks
9050 West Washington Boulevard,
#358
Culver City, California 90232 USA

Graham Walters

Pixar Animation Studios
1001 West Cutting Boulevard
Richmond, California 94804 USA

Turner Whitted

Microsoft Research
One Microsoft Way
Redmond, Washington 98052 USA

Jennifer Yu

Pacific Data Images
3101 Park Boulevard
Palo Alto, California 94306 USA

Jian Zhao

Fraunhofer Center for Research in
Computer Graphics, Inc.
321 South Main Street
Providence, Rhode Island 02903
USA

Paper Contacts

Daniel G. Aliaga

Bell Labs
600 Mountain Avenue,
Room 2C-573
Murray Hill, New Jersey 07974
USA

Matthew Brand

Mitsubishi Electric Research
Laboratory
201 Broadway, 8th floor
Cambridge, Massachusetts 02139
USA

Brian Cabral

SGI
2011 North Shoreline Boulevard
Mountainview, California 94043
USA

Chun-Fa Chang

University of North Carolina at
Chapel Hill
2 Casabelle Court
Durham, North Carolina 27713
USA

Daniel Cohen-Or

Tel Aviv University
University St. RamatAviv
Tel-Aviv 69978
ISRAEL

Mathieu Desbrun

California Institute of Technology
1200 E California Boulevard
Computer Science Ms
Pasadena, California 91125 USA

Julie Dorsey

Massachusetts Institute of
Technology
545 Technology Square
Cambridge, Massachusetts 02139
USA

John Funge

Intel Corporation
SC12-303 2200 Mission College
Boulevard
Santa Clara, California 95052 USA

Thomas A. Funkhouser

Princeton University
35 Olden Street
Princeton, New Jersey 08540 USA

Chris Greenhalgh

University of Nottingham
University Park
Nottingham, NG7 2RD
UNITED KINGDOM

Igor Guskov

Princeton University
Princeton, New Jersey 08544 USA

David Hart

Cornell University
580 Frank Rhodes Hall
Ithaca, New York 14853 USA

Wolfgang Heidrich

Universität Erlangen
IM Stadtwald
Saarbruecken 66123
GERMANY

Kenneth Hoff

University of North Carolina at
Chapel Hill
618-C Hibbard Drive
Chapel Hill, North Carolina 27514
USA

Hugues Hoppe

Microsoft Research
One Microsoft Way
Redmond, Washington 98052 USA

Takeo Igarashi

University of Tokyo
5000 Forbes Ave
Pittsburgh, Pennsylvania 15213
USA

Homan Igehy
Stanford University
Gates Building 3B Room 376
Stanford, California 94305 USA

Michael Kowalski
Brown University
Box 1910
Providence, Rhode Island 02912
USA

Aaron Lee
Princeton University
35 Olden Street
Princeton, New Jersey 08540 USA

Jehee Lee
KAIST
373-1 Ku-Sung Dong 4U-Sunggu
Daejeon 305-701 KOREA

Adi Levin
Tel Aviv University
Harey Yehuda 58 Ganey
Tikva 55900 ISRAEL

Joel McCormack
Compaq Computer Corporation
819 Peak View Road
Boulder, Colorado 80302 USA

William A. McNeely
The Boeing Company
PO Box 3707
MS 7L-43
Seattle, Washington 98124 USA

Lee Markosian
Brown University
Box 1910
Providence, Rhode Island 02912
USA

Fabrice Neyret
iMAGIS
220 Rue De Lachmie
BP53 Grenoble Cedex 9
FRANCE

James F. O'Brien
Georgia Institute of Technology
GVU Center, College of Computing
801 Atlantic Drive
Atlanta, Georgia 30332 USA

Victor Ostromoukhov
EPFL
Computer Science Department IN-F
Lausanne 1015
SWITZERLAND

Dinesh Pai
University of British Columbia
2366 Main Mall
Vancouver, British Columbia
CANADA V6T 1Z4

Hanspeter Pfister
Mitsubishi Electric Research
Laboratory
201 Broadway
Cambridge, Massachusetts 02139
USA

Zoran Popovic
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, Pennsylvania 15213
USA

Emil Praun
35 Olden Street
Computer Science Building
Princeton, New Jersey 08544 USA

Arcot J. Preetham
University of Utah
50 S, Central Campus Drive
Room 3190, MEB.
Salt Lake City, Utah 84112 USA

Paul Rademacher
University of North Carolina at
Chapel Hill
CB #3175
Sitterson Hall
Chapel Hill, North Carolina 27599
USA

Ravi Ramamoorthi
Stanford University
Gates Wing
3B-372
Stanford, California 94305 USA

Mahesh Ramasubramanian
Cornell University
580 Frank Rhodes Hall
Ithaca, New York 14853 USA

Matthew Regan
Interval Research Corporation
1801 Page Mill Road Building C.
Palo Alto, California 94304 USA

Heung-Young Shum
Microsoft Research
One Microsoft Way
Redmond, Washington 98052 USA

Jos Stam
Alias|Wavefront
1218 Third Avenue, Suite 800
Seattle, Washington 98101 USA

Micheal M. Stark
University of Utah
50 S. Central Campus Drive,
Room 3
Salt Lake City, Utah 84112 USA

Jack Tumblin
Georgia Institute of Technology
499 Northside Circle, Apartment
#325
Atlanta, Georgia 30309 USA

Greg Turk
Georgia Institute of Technology
861 Atlantic Drive
Atlanta, Georgia 30332 USA

John Underkoffler
Massachusetts Institute of
Technology
20 Ames Street, E15-425
Cambridge, Massachusetts 02139
USA

Martin Usoh
University College of London
Gower St. 2
London WC1E 6BT
UNITED KINGDOM

Thomas Vetter
Max Planck Institute for Biological
Cybernetics
Spemannstr. 38
Tübingen 72076
GERMANY

Zachary Wartell
Georgia Institute of Technology
College of Computing
Atlanta, Georgia 30332 USA

Henrik Weimer
Rice University
Computer Science
6100 South Main Street
Houston, Texas 77005 USA

Patrick Witting
DreamWorks SKG
1000 Flower Street
Glendale, California 91201 USA

Yizhou Yu
University of California, Berkeley
387 Soda Hall #1776
Berkeley, California 94720 USA

Douglas E. Zongker
University of Washington
114 Sieg Hall
Box 352350
Seattle, Washington 98195 USA

Sketches & Applications

Lively presentations of interesting new ideas, unique collaborations, late-breaking results, works in progress, and novel applications of computer graphics and interactive techniques. Sketches are presented in three categories: technical; art, design, and multimedia; and animation.



Chair

Richard Kidd
Cinesite Visual Effects

Locations

Rooms 151/152, 403A, 408A, 408B

Days

Wednesday 11 August	10:30 am - 6 pm
Thursday 12 August	8:30 am - 6 pm
Friday 13 August	8:30 am - 4 pm

Hours

Committee

Zsolt Krajcsik
Disney Feature Animation

Ken Musgrave
MetaCreations

Dena Slothower
Pratt Institute

Jury

Tom Appolloni
Harris Corporation

Curtis Edwards
Disney Feature Animation

Andrew Glassner
Microsoft Corporation

Madge Gleeson
Western Washington University

Michael Gleicher
University of Wisconsin

Steve Goldberg
Disney Feature Animation

Rex Grignon
Pacific Data Images

John Hart
Washington State University

Jacquelyn Martino
Philips Research, USA

Marcus Mitchell
Digital Domain, Inc.

Maureen Nappi
New York University

Aaron Pfau
Industrial Light & Magic

Michelle Robinson
Disney Feature Animation

Kathleen Ruiz
Rensselaer Polytechnic Institute

Bryan Wyvill
Imagis GRAVIR/IMAG

Wednesday 11 August 10:30 am - 12:15 pm

FX Animation & Special Effects **M** Modeling

Commercial Successes

Chair: **Aaron Pfau, Industrial Light & Magic**

Room 151/152

Digital Cars

Bob Hoffman

Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
bhoffman@d2.com

The history of CG-cars development at Digital Domain, from Plymouth Neon (1996) and Chevy Blazer (1997) to Dodge and Pontiac (1998).

Creating a Digital World from Scratch: The Launch of the First Union Bank Advertising Campaign

Mary Beth Haggerty
Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
mbh@lucasdigital.com

Combining several different techniques for a desired effect is a staple of computer graphics production. For First Union Bank, Industrial Light & Magic created a new world with cutting-edge and traditional techniques.

Designing, Directing, and Animating New Proprietary 3D Characters for Advertising Campaigns

Mark Voelpel
R/Greenberg Associates Digital Studios
350 West 39th Street
New York, New York 10018 USA
mark@rga.com

The constraints of producing a commercial can seem overwhelming, but many classical forms are very restrictive (sonnets and Haiku, for instance). A tremendous amount of great work has been created by treating constraints as liberating, so why not take a similarly optimistic and enabling approach to making spots?

Wednesday 11 August 2:15 - 4 pm

FX Animation & Special Effects

Looking Death in the Face

Chair: **Steve Goldberg, Disney Feature Animation**

Room 151/152

A Ghostly Figure Rising Out of an Evil, Dark Bog: The Making of The Wraith from "The Mummy"

David Horsley
Jenn Emberly
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

Animation of "The Wraith" was a collaboration completed by a team of character animators and technical directors in a rather unusual way, due to ILM's structure.

Creating Digital Corpses for "The Mummy"

Catherine Craig
James Doherty
Rick Grandy
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

Industrial Light & Magic was given the task of bringing the title character to life in various stages of reincarnation, from walking skeleton to full human form and all the steps along the way. The key challenge required digital recreation of an actor, inside and out, that had the look and performance of real human bone, tissue, skin, and body mechanics.

The Haunting - Select Visual Effects

Craig Hayes
Tippett Studio
2741 Tenth Street
Berkeley, California 94710 USA
craig@tippett.com

This sketch analyzes two scenes from "The Haunting." In one scene, the heroine combs her hair in front of a mirror and watches in horror as her hair takes on a life of its own. In the second scene, the sleeping heroine drifts into sleep in a giant antique bed as a ghost child enters through the window.

Deep Canvas in Disney's "Tarzan"

Eric Daniels

Disney Feature Animation
500 South Buena Vista
Burbank, California 91521 USA
eric.daniels@disney.com

What if you could paint a painting, then have the brushstrokes themselves come alive and move around? Rather than texture mapping, where the end result of the painting process is wrapped onto a surface, Deep Canvas animates the events that make up a painting: the brushstrokes themselves.

The Making of the Painted World: "What Dreams May Come"

Karen Ansel

Mobility, Inc.
555 Rose Avenue, #8
Venice, California 90291 USA
karen@mobus.com

The painted world of "What Dreams May Come" is transformed over 8.5 minutes of live-action photography into moving painted imagery in the style of 19th century painters, such as Casper, David Friedrich, and Claude Monet.

Thursday 12 August 10:30 am - 12:15 pm

FX Animation & Special Effects **M** Modeling

Star Wars Episode I Creature Development

Chair: Rex Grignon, Pacific Data Images

Room 151/152

Creature Modeling and Facial Animation on Star Wars: Episode I "The Phantom Menace"

Geoff Campbell
Cary Phillips
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

For "Episode I," the duties of the creature modelers at Industrial Light & Magic involved building the static models, either from scanned maquettes or by sculpting from scratch, building libraries of facial shapes and expressions for the talking creatures, and working with the envelopers responsible for the flexible skin models to sculpt corrective adjustments.

Creature Wrangling and Enveloping for Star Wars: Episode I "The Phantom Menace"

Tim McLaughlin
Cary Phillips
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

Meeting the challenges presented by the complex digital creatures needed for Star Wars: Episode I "The Phantom Menace" required creation of organic skin movement and management of large model databases.

Viewpainting Models for Star Wars: Episode I "The Phantom Menace"

Jean Bolte
David Benson
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

With development of ILM's in-house paint software (Viewpaint), not only wrinkles and fur, but also feathers, rust, metal patina, decay, and corrosion have been incorporated into computer-generated models. The stage has been set for just about any look, from photorealistic to stylized, to become a possibility.

Thursday 12 August 2:15 - 4 pm

FX Animation & Special Effects **R** Rendering

Star Wars Episode I Technical Animation Challenges

Chair: Zsolt Krajcsik, Disney Feature Animation

Room 151/152

Technical Animation Issues for the Battle Droids of Star Wars: Episode I "The Phantom Menace"

James Tooley
Jim Hourihan
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

Two distinct factors were evident in the decision to use motion-capture technology in the early preproduction phase for the Battle Droids: the Battle Droids are, by design, very humanoid in nature, so they required a hyper-realistic range of motions, and they appear in large numbers, which made the duplication of basic actions and motions a necessity for completing a shot.

Cloth Animation for Star Wars: Episode I "The Phantom Menace"

Tim McLaughlin
John Anderson
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

There were two key challenges in designing the procedural animation software for the clothing in "Episode I:" development of appropriate representations for the physical properties of the large range of materials that were needed for the film, and development of a set of controls to define the performance aspects of the clothing.

Multiple Creature Choreography on Star Wars: Episode I "The Phantom Menace"

Marjolaine Tremblay
Hiromi Ono
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

Working in Softimage, a group of character animators created a series of animation cycles needed for the Naboo ground battle while a group of technical directors created and rendered particle choreographies in Alias|Wavefront's Maya. Both groups cooperated to achieve the best results.

Wednesday 11 August 10:30 am - 12:15 pm

IT Interactive Techniques

Interaction and Navigation

Chair: Dena Slothower, Pratt Institute

Room 403A

SaltoArte: Explorations in Spatial Interactive Multimedia

CAL D

Larry Burks
Harvard University
Graduate School of Design
48 Quincy Street
Digital Design Initiative
Cambridge, Massachusetts 02138
USA
lburks@gsd.harvard.edu

A 3D multimedia installation that allows visitors to interact with rare artist portfolio artifacts.

Interactive Installations for the Mashantucket Pequot Museum

CAL D

Wells Packard
Nicholson NY
The Puck Building
295 Lafayette Street
New York, New York 10012 USA
wells@nny.com

Six award-winning interactive kiosks created for the new Mashantucket Pequot Museum and Research Center.

The Mutable Cursor

Ella Tallyn
Hewlett-Packard Company
Filton Road
Stoke Gifford
Bristol BS12 6QZ
UNITED KINGDOM
ella@hplb.hpl.hp.com

The cursor as a mutable window through which a story environment is depicted. The mutable cursor acts as a mediator between the player and the environment, illustrating the point of view of a story character.

MSA's Attractors: Navigational Aids for Virtual Environments

Agueda Simó
University of Southern California
Avda. Madariaga, 18, 3ªA
Bilbao 48014 SPAIN
simo@felix.usc.edu

An interesting and difficult challenge in designing virtual environments is attracting the user's attention to an object or area with rich interactivity. MSA's attractors lead users to those objects or areas.

Wednesday 11 August 2:15 - 4 pm

A Art

New Directions in Visual and Audio Expression Chairs: Jacquelyn Martino, Philips Research USA Maureen Nappi, New York University Room 403A

Computational Expressionism: A Model of Drawing with Computation

Joanna Maria Berzowska
Massachusetts Institute of Technology
20 Ames Street, E15-443
Cambridge, Massachusetts 02139
USA
joey@media.mit.edu

Computational expressionism is a model for drawing that combines higher-level conceptual design with real-time gestural input. It is a two-fold process, at two distinct levels of interaction with the computer. The artist programs the appearance and behavior of computational lines and then draws with these by dragging a mouse or controlling another input device. The result: a different perspective on visual thinking, one that involves more active participation in the higher-level design of drawing tools.

Nami

Kelly Heaton
Massachusetts Institute of Technology
20 Ames Street, E15-410
Cambridge, Massachusetts 02139
USA
kelly@media.mit.edu

A decentralized community of identical "orbs," each of which can display a spectrum of colored light, respond to touch, and wirelessly communicate with its neighbors. When a user activates the spread of color within Nami by touching a single orb, the selected orb responds with expression of a new color. The new state is broadcast to neighboring orbs, prompting them to assume the color and forward the message. In this way, waves of colored light move throughout the distributed network and create visible patterns of behavior.

Passion Spaces Based on the Synesthesia Phenomenon

Tsutomu Miyasato
ATR Media Integration & Communications Research Labs
Seika-cho Soraku-gun
Kyoto 619-0288 JAPAN
miyasato@mic.atr.co.jp

The results of image creation from "tanka" (a 31-syllable Japanese poem) using an algorithm based on the synesthesia phenomenon.

Virtual Music Reproduction

CAL D

Hartmut Chodura
Fraunhofer-IGD
Rundeturmstrasse 6
Darmstadt 64283 GERMANY
chodura@igd.fhg.de

An application for interactive music experience. In contrast to the conventional way of consuming music, the user is able to change the location of sound sources and navigate through a virtual environment.

Thursday 12 August 10:30 am - 12:15 pm

IT Interactive Techniques **A** Art

Community and Communications

Chair: Madge Gleeson, Western Washington University

Room 403A

Setup of the Konsum Art.Server

Margarete Jahrmann

Konsum.Arts

Vorgartenstrasse 199/1/13

Vienna A-1020 AUSTRIA

superferm@konsum.net

In the Superferm SuperUser Browser #KonsumLinuX3D.wrl#, a X3D browser concept for the dark side of the net, digital self representation by VRML Datavatar net actions and protocol-inherent data-vatars express SUpferfeminisme for SUpferFEMperformances.

A 3D Natural Emulation Design Approach to Virtual Communities

Steve DiPaola

communities.com

2815 Newlands Avenue

Belmont, California 94002 USA

steve@dipaola.org

The design goal for OnLive's Internet-based virtual community system was to help participants sense a tele-presence. This collective sense of "being-there" does not happen over the phone or with teleconferencing; it is a new and emerging phenomenon, unique to 3D virtual communities.

VisiPhone

Karrie Karahalios

Massachusetts Institute of

Technology

20 Ames Street, E15-430

Cambridge, Massachusetts 02139

USA

kkarahal@media.mit.edu

Visiphone is a communication object that opens a graphical as well as an audio portal through space. This experimental medium explores the social and aesthetic aspects of visualizations of sound and provides a continuous, ubiquitous connection between people in different places.

Phene-



Tiffany Holmes

University of Michigan

2055 Commerce Boulevard, #221

Ann Arbor, Michigan 48103 USA

tgholmes@umich.edu

Phene- is a multimedia interactive installation that portrays a laboratory "gone amuck." The focal point is an enormous petri dish filled with fungus and illuminated by an animation. Visitors interact with the chimerical specimen via feeding, watering, magnifying, dissecting, etc.

Thursday 12 August 2:15 - 4 pm

A Art

Technique as Muse

Chairs: Jacquelyn Martino, Philips Research, USA Maureen Nappi, New York University

Room 403A

Hyper-3D Paintings in QuickTime VR



Philip Sanders

The College of New Jersey

563 Van Duzer Street

Staten Island, New York 10304 USA

ps@thing.net

A demonstration of 2D and 3D imaging techniques used to create hypermedia 3D paintings that are presented in QuickTime VR within Director movies.

Explorations of New Visual Systems

Kostas Terzidis

University of California, Los Angeles

405 Hilgard Avenue

Los Angeles, California 90095 USA

kostas@ucla.edu

This sketch investigates how computers and new media may extend the designer's perception and imagination. It presents a series of experimental mathematical functions that demonstrate some of these models or mappings for a variety of values for the parameters. The functions address geometric mappings as well as numerical models of projection, and their interest lies in the dynamic nature of continuous computer processing (real-time movement).

The Application of Non-Periodic Tiling Patterns in the Creation of Artistic Images



Kenneth A. Huff

915 Floral Drive

Orlando, Florida 32803 USA

ken@itgoesboing.com

Artistic combination of grids of randomly oriented tiles containing a simple pattern (based on patterns first described by Sebastien Truchet in 1704) are used to produce unique forms and details.

Wednesday 11 August 10:30 am - 12:15 pm

IT Interactive Techniques

Virtual Reality

Chair: Ken Musgrave, MetaCreations

Room 408A

Prototype System of Mutual Tele-Existence

CAL D

Yutaka Kunita

The University of Tokyo
Graduate School of Engineering
7-3-1 Hongo
Bunkyo-ku
Tokyo 113-8656 JAPAN
kuni@start.u-tokyo.ac.jp

A prototype system with 12 synchronized cameras that realizes real-time rendering of motion objects from arbitrary viewpoints.

WorldBoard: Enabling a Global Augmented Reality Infrastructure

CAL D

Sonny Kirkley

Information in Place, Inc.
Suite 224
501 North Morton Street
Bloomington, Indiana 47404 USA
sonny@informationinplace.com

WorldBoard is a standards-based technology that enables any Web object to be virtually attached to any object or placed anywhere on the planet. It uses XML, Web servers, and mobile computers.

Handheld Interactions: Tailoring Interfaces for Single-Purpose Devices

W. Bradford Paley

Digital Image Design Incorporated
72 Spring Street
New York, New York 10012 USA
brad@didi.com

This case study of human interaction and cognitive challenges in the development of single-purpose handheld devices presents results and working prototypes.

Virtual Car

Christoph Stratmann

ART+COM Medientechnologie und Gestaltung AG
Kleiststr. 23-26
Berlin D-12205 GERMANY
strat@artcom.de

The Virtual Car VR solution is an electronic sales-support system that uses an integrated, special-purpose I-O device during individual configuration sessions in the auto showroom.

Wednesday 11 August 10:30 am - 12:15 pm

R Rendering

Imaginative Rendering

Chair: Curtis Edwards, Disney Feature Animation

Room 408B

Volumetric Modeling of Artistic Techniques in Colored Pencil Drawing

Saeko Takagi

Tokyo Institute of Technology
c/o Nakajima Laboratory (CS)
2-12-1 O-okayama Meguro-ku
Tokyo 152-8552 JAPAN
sae@cs.titech.ac.jp

This sketch describes an improved volumetric model for colored-pencil drawing. The emphasis is on newly incorporated sub-models devoted to production of watering and eraser effects.

Image Moment-Based Stroke Placement

Michio Shiraishi

Yamaguchi Yasushi Lab.
Department of Graphics and Computer Sciences
University of Tokyo
3-8-1, Komaba, Meguro-ku
Tokyo 153-8902 JAPAN
shira@graco.c.u-tokyo.ac.jp

An image moment-based algorithm to determine the attributes of a brush stroke for painterly rendering.

Real-Time Principal Direction Line Drawings of Arbitrary 3D Surfaces

Ahna Girshick

University of Minnesota
Department of Computer Science
200 Union Street SE, Room 4-192
Minneapolis, Minnesota 55455 USA
girshick@cs.umn.edu

Creating interactive line drawings of arbitrary 3D surfaces using shaded strokes that follow the principal directions.

3D Physical-Based Brush Model for Painting

Suguru Saito

Tokyo Institute of Technology
2-12-1 O-okayama Meguro-ku
Tokyo 152-8552 JAPAN
suguru@cs.titech.ac.jp

A novel 3D, physically based brush model that allows users to paint various strokes intuitively and directly on a computer with a pen-type input device.

Wednesday 11 August 2:15 - 4 pm

IT Interactive Techniques

Haptic Feedback Techniques

Chair: Andrew Glassner, Microsoft Corporation

Room 408A

Representation of the Tactile Surface Texture of an Object Using a Force-Feedback System

Teruaki Inuma

Dai-Nippon Printing Co., Ltd.

Daimachi 6-10

Ichigaya Shinjuku-Ku

Tokyo 162-0066 JAPAN

inuma@lab.cio.dnp.co.jp

By alternating dynamic frictional resistance coefficients at a high frequency, "rough" or "sticky" surface textures of a 3D object can be simulated using a force-feedback system.

Interactive Haptic Modeling of Tensegrities and Network Structures

Martin Brady

Intel

2065 Rolling Hills Drive

Morgan Hill, California 95037 USA

brady@allover.com

This integration of haptics with a reach-in environment for dextrous work with virtual objects includes approximation techniques for interactive modeling of deformable objects, specifically tensegrity structures.

Tangible Modeling System

Ken-ichi Kameyama

Toshiba

1 Komukaitoshiba-cho,

Saiwai-ku

Kawasaki 210-8582 JAPAN

kenichi.kameyama@toshiba.co.jp

In this newly developed 3D CAD system, designers can directly manipulate and paint design objects as if they were real mock-ups.

Wednesday 11 August 2:15 - 4 pm

R Rendering

Non-Realtime Rendering

Chair: Brian Wyvill, Imagis GRAVIR/IMAG

Room 408B

The Morphological Cross-Dissolve

Kevin Novins

University of Otago

Department of Computer Science

P.O. Box 56

Dunedin, NEW ZEALAND

novins@cs.otago.ac.nz

An operator that blends two binary or greyscale images. Using operators from mathematical morphology, shapes in the source image expand or contract until the target image is obtained.

The Holodeck Interactive Ray Cache



Greg Larson

SGI

1200 Dartmouth Street

Apartment C

Albany, California 94706 USA

gwl Larson@positron.cs.berkeley.edu

A physically based rendering method for interactive walk-throughs of complicated environments with general reflectance properties. The implementation utilizes parallel processing and 3D rendering hardware to accelerate the computation.

Interactive Rendering with Arbitrary BRDFs using Separable Approximations

Jan Kautz

University of Waterloo

350 Columbia Street West, 17B

Waterloo, Ontario N2L 6E9

CANADA

jnkautz@cgl.uwaterloo.ca

A separable decomposition of bi-directional reflectance distributions implements arbitrary reflectances from point sources on existing graphics hardware.

Filtered Noise and the Fourth Dimension



Geoff Wyvill

University of Otago

Department of Computer Science

523 Castle Street Box 56

Dunedin, NEW ZEALAND

geoff@otago.ac.nz

How can we generate filtered noise without artifacts and as quickly as possible? A surprising answer emerges from the geometry of packing spheres in four dimensions.

Wednesday 11 August 4:15 - 6 pm

M Modeling

Medical Models and Mummies

Chair: Tom Appolloni, Harris Corporation

Room 408A

Physically Based, Anatomic Modeling for Construction of Musculoskeletal Systems

CAL D

Victor Ng-Thow-Hing
University of Toronto
222 The Esplanade, Suite 802
Toronto, Ontario M5A 4M8
CANADA
victornng@dgp.toronto.edu

B-spline solids used as combined, physically based, and geometric musculo-tendon models in an interactive, musculoskeletal visualization and simulation system.

Application of Computer Graphics for Design and Delivery of Conformal Radiation Therapy

Marc Kessler
The University of Michigan
Department of Radiation Oncology
B2C438, Box 0010
1500 East Medical Center Drive
Ann Arbor, Michigan 48109 USA
mkessler@umich.edu

How computer graphics and interactive techniques are used to manipulate volumetric medical image data to design and deliver conformal radiation therapy treatments to cancer patients.

Modeling HIV

CAL D

Teresa Larsen
TSRI
P.O. Box 1433
La Jolla, California 92038 USA
larsen@scripps.edu

AIDS researchers worldwide have collected more data about HIV than any other organism. This sketch presents a virtual and physical, hand-held model of the virus derived from published structural data.

3D Facial Reconstruction and Visualisation of Ancient Egyptian Mummies Using Spiral CT Data

CAL D

Maurizio Forte
CNR-ITABC Institute for Technologies Applied to Cultural Heritage
Via Salaria km 29,300 C.P.10
Monterotondo St (Roma) 00016
ITALY
forte@milib.cnr.it

Preliminary results of a research project aimed at reconstructing, through spiral computed tomography data and virtual modeling techniques, 3D models of the possible physiognomy of ancient Egyptian mummies.

Wednesday 11 August 4:15 - 6 pm

R Rendering

Real-Time Rendering

Chair: John Hart, Washington State University

Room 408B

Real-Time Shadows, Reflections, and Transparency using a Z-Buffer/Ray Tracer Hybrid

Abe Megahed
Hypercosm, Inc.
1212 Fourier Drive
Madison, Wisconsin 53717 USA
abem@hypercosm3d.com

Merging ray tracing with real-time hidden-surface algorithms such as the z-buffer algorithm offers a smooth transition from interactive display with approximate soft shadows, reflections, and transparency to full ray tracing with all of its associated effects. This is done by using the ray tracer only for tracing shading rays at the vertices of polygons and using another hidden-surface technique for hidden-surface removal in conjunction with Gouraud interpolation.

Phong Shading at Gouraud Speed

Greg Rivera
Virtus Corporation
Director of Applications
114 MacKenan Drive, Suite 100
Cary, North Carolina 27511 USA
greg.rivera@virtus.com

With a few matrix rotations during polygon setup, Phong's per-pixel renormalization and exponentiation are reduced to linear interpolation and fast multiply for use with real-time software or low-end hardware.

Quasi-Linear Z-Buffer

Eugene Lapidous
Trident Microsystems Inc.
189 North Bernardo Avenue
Mountain View, California 94043
USA
lapidous@acm.org

A new type of depth buffer with quasi-linear mapping from the eye to screen space. It significantly improves depth resolution and is easy to use with standard 3D hardware and APIs.

Occlusion Culling with Optimized Hierarchical Z-Buffering

Ned Greene
Ned Greene Consulting
140 Russell Avenue
Portola Valley, California 94028
USA
ned@ngreene.com

Z-buffer hardware can be greatly accelerated by adding a conservative culling stage that employs an optimized variation of hierarchical z-buffering to cull occluded geometry.

LiveWeb: Visualizing Live User Activities on the Web



Rebecca Xiong
Massachusetts Institute of Technology
305 Memorial Drive
Room 616C
Cambridge, Massachusetts 02139 USA
becca@mit.edu

LiveWeb uses Web-site structure and live-access data to visualize user presence and activities. It aims to foster a sense of community and enable unplanned interaction among Web users.

Stereo Analyst: Visualizing Large Stereoscopic Imagery in Real-Time

Jason Rosenberg
Erdas, Inc.
230 Austin Drive
Athens, Georgia 30606 USA
jason@erdas.com

Stereo Analyst visualizes stereo-paired imagery in real time and collects 3D features. It is capable of using camera orientation to provide on-the-fly epipolar re-sampling, using OpenGL's coordinate transformation pipeline, and uses a multi-threaded, multi-resolution scheme for imagery and overlaid feature data for real-time navigation.

An Interface for Transcribing American Sign Language



Rosalee Wolfe
DePaul University
School of CTI
243 South Wabash Avenue
Chicago, Illinois 60604 USA
wolfe@cs.depaul.edu

A system that facilitates fast transcription of signs that comprise the vocabulary of American Sign Language. This is part of an effort to translate English into the gestures of American Sign Language.

OpenGL Texture-Mapping With Very Large Datasets and Multi-Resolution Tiles



Paul Hansen
SGI
2011 North Shoreline Boulevard
42M-945
Mountain View, California 94043 USA
hansen@sgi.com

On OpenGL systems without the "clipmap" extension, a tiled approach can be used to provide the correct resolution image data for different parts of a 3D visualization, where very large texture-maps are desired. The application, called "EarthView" is a planetary browser, which can be used to view arbitrary amounts of geo-referenced image and terrain elevation data.

Thursday 12 August 8:30 - 10:15 am

Mathematical Methods **Chair: Michael Gleischer, University of Wisconsin** **Room 403A**

Decremental Delaunay Triangulation

Richard Hammersley
Schlumberger
8311 North RR 620
Austin, Texas 78726 USA
hammersley@austin.apc.slb.com

New results on removing points from a Delaunay triangulation and computing decremental Delaunay triangulation.

Enhancing the Efficiency and Versatility of Directly Manipulated Free-Form Deformation

James Gain
University of Cambridge
Computer Laboratory
New Museums Site
Pembroke Street
Cambridge CB2 3QG
UNITED KINGDOM
jeg24@cl.cam.ac.uk

Exploitation of matrix sparsity and intuitive manipulation of first-derivative properties to enhance speed and versatility in directly manipulated FFD.

Multi-Dimensional Quaternion Interpolation

Michael Patrick Johnson
Massachusetts Institute of Technology
20 Ames Street, E15-320G
Cambridge, Massachusetts 02139 USA
aries@media.mit.edu

In this search for a multi-variate version of Shoemake's famous "slerp" function, two methods (using RBFs) have been implemented to continuously interpolate between several kinematic animation examples that differ along emotional input axes, such as happiness and fatigue. The extrinsic version was incorporated in the Swamped! interactive exhibit at SIGGRAPH 98, and the intrinsic version is used in the Millennium Motel (SIGGRAPH 99).

Fast Polygon Mesh Querying by Example

James Gain
University of Cambridge
Computer Laboratory
New Museums Site
Pembroke Street
Cambridge CB2 3QG
UNITED KINGDOM
jeg24@cl.cam.ac.uk

An efficient method for comparing a low-resolution polygon mesh query model to a database of complex models using voxelisation and wavelet decomposition.

Thursday 12 August 8:30 - 10:15 am

FX Animation & Special Effects

Special Effects **Chair: Ken Musgrave, MetaCreations** **Room 408AB**

3D Rendering Effects for 2D Animation

Lance Williams
DreamWorks SKG
1000 Flower Street
Glendale, California 91201 USA
lwilliams@dreamworks.com

3D shading and rendering techniques can be applied to animated drawings, after automatically constructing surfaces from the drawings. Modeled surfaces can also track drawings to produce shaded and textured animation.

Image-Based Techniques for Object Removal

Rod G. Bogart
Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
beth@lucasdigital.com

A simple image-based rendering technique for producing a clean plate from the original background. The algorithm consists of four steps: object identification, image depth extraction, image projection, and incremental rendering. Simply put, the algorithm makes a hole where the bad pixels are, then uses neighboring frames to incrementally fill the hole with good pixels.

Postprocess 2D Motion Blur for Cel Animation

Peter Cucka
DreamWorks Feature Animation
Riverside Building
1000 Flower Street
Glendale, California 91201 USA
pcucka@anim.dreamworks.com

In this process, motion blur is applied to cel animation sequences through the use of optical flow estimation and line-integral convolution.

Wet and Messy Fur

Armin Bruderlin
Sony Pictures Imageworks
9050 West Washington Boulevard
Software Engineering
Culver City, California 90232 USA
armin@spimageworks.com

This sketch describes two effects from the hair-fur pipeline developed for the upcoming motion picture "Stuart Little": A method to produce a wet fur coat, and a method to break up combed hairs along fur tracks on the skin.

Thursday 12 August 4:15 - 6 pm

FX Animation & Special Effects

Behavior and Flight

Chair: Marcus Mitchell, Digital Domain, Inc.

Room 403A

Animating Expressivity Through Effort Elements

Diane Chi

University of Pennsylvania
52-32 Revere Road
Drexel Hill, Pennsylvania 19026 USA
chi@graphics.cis.upenn.edu

The EMOTE animation paradigm uses Laban's Effort to parameterize expressive arm movements. Using only four textual parameters, it adds an intuitive interface to user-specified or procedurally generated character animation systems.

Declarative Behaviors for Virtual Creatures

Philippe Codognet

University of Paris 6
LIP6, case 169
8 rue du Capitaine Scott
Paris 75 015 FRANCE
Philippe.Codognet@lip6.fr

VRCC, a concurrent-constraint programming language based on VRML, programs behaviors of autonomous creatures in 3D worlds. This sketch also describes some simple behaviors derived from biologically inspired models of navigation.

Animating Bird Flight Using Aerodynamics

CAL D

Balajee Ramakrishnananda

Center for Graphics and Imaging Technology
c/o School of Applied Science
Blk N4, #2A-32, Nan
Nanyang Technological University
Singapore 639798 SINGAPORE
askcwong@ntu.edu.sg

Aerodynamic principles are employed for physical animation of bird flight. Control of the flight trajectory is possible through direct or indirect control of the pitching moment.

Thursday 12 August 4:15 - 6 pm

IT Interactive Techniques

Novel Projection Methods

Chair: Tom Appolloni, Harris Corporation

Room 408AB

Oblique Projector Rendering onto Planar Surfaces for a Tracked User

Ramesh Raskar

University of North Carolina Chapel Hill
Sitterson Hall, CB3175
Chapel Hill, North Carolina 27599 USA
raskar@cs.unc.edu

When projectors create keystoning, a traditional graphics pipeline with a modified projection matrix and an approximation of the z-buffer can be used to create perspective correct images for a tracked moving user in CAVE or ImmersaDesk.

Projecting Computer Graphics on Moving Surfaces: A Simple Calibration and Tracking Method

Claudio Pinhanez

Massachusetts Institute of Technology
20 Ames Street, E15-368C
Cambridge, Massachusetts 02139 USA
pinhanez@media.mit.edu

A simple method of calibrating a camera and a projector so the projected image exactly matches the surface of a moving object. The method is used in the HyperMask system that projects faces on a mask worn by an actor during a performance.

Head-Mounted Projector

Masahiko Inami

The University of Tokyo
Tachi Lab MEIP
School of Engineering
7-3-1 Hongo, Bunkyo-ku
Tokyo 113-8656 JAPAN
media3@start.u-tokyo.ac.jp

A head-mounted projector that uses X'tal Vision (Crystal Vision) technology, a projection-based augmented-reality system composed of a projector with a small iris and a retroreflective screen.

Friday 13 August 8:30 - 10:15 am

Visualization and Video Analysis	Chair: John Hart, Washington State University		Room 408AB
<p>Color Super-Histograms for Video Representation: Preliminary Research and Findings</p> <p>Jacquelyn Martino Philips Research, USA 345 Scarborough Road Briarcliff, New York 10510 USA iam@philabs.research.philips.com</p> <p>A novel method for computing super-histograms to represent video segments. The underlying assumption is that a TV program has a consistent color palette, which can be derived as a family of merged individual-shot histograms.</p>	<p>Image Re-Composer</p> <p></p> <p>Shoji Tanaka ATR Media Integration & Communications Labs. 2-2 Hikaridai Seika-cho Soraku-gun Kyoto 619-0288 JAPAN gon@mic.atr.co.jp</p> <p>A post-production tool for refining images according to compositions derived from well-composed pictures such as art masterpieces.</p>	<p>Which Way Is the Flow?</p> <p>David Kao NASA Ames Research Center M/S T27A-2 Moffett Field, California 94035 USA davidkao@nas.nasa.gov</p> <p>This new method for highlighting flow direction in LIC images gives an intuitive impression of flow direction in the given vector field and reveals saddle points in the flow.</p>	<p>Video Embodiment - MovieSpiral: Towards Intuitive/Comprehensive Interfaces for Digital Video Interaction</p> <p>Akihito Akutsu NTT Cyber Space Labs 1-1 Hikari-no-oka Yokosuka-shi Kanagawa-ken 239-0847 JAPAN akutsu@aether.hil.ntt.co.jp</p> <p>An attempt to create a body that expresses video content and structure.</p>

Friday 13 August 9 - 10:15 am

 Animation & Special Effects

Motion Hacks	Chair: Andrew Glassner, Microsoft Research		Room 403A
<p>Capturing the Motions of Actors in Movies</p> <p>Masanobu Yamamoto Niigata University Department of Information Engineering Ikarashi 2-nocho 8050 Niigata 950-2181 JAPAN yamamoto@ie.niigata-u.ac.jp</p> <p>An image-based method for capturing the motion of actors from movies.</p>	<p>Speedlines - Depicting Motion in Motionless Pictures</p> <p>Mike Masuch Otto-von-Guericke University of Magdeburg Department of Simulation and Graphics (ISG) Uniplatz 2 Magdeburg D-39106 GERMANY masuch@isg.cs.uni-magdeburg.de</p> <p>Adapting traditional illustrative techniques from comics to develop an alternative method of depicting movement of objects in computer-generated images using speedlines, arrows, and contour repetitions.</p>	<p>Dynamic Texture: Physically Based 2D Animation</p> <p>Mikio Shinya NTT Cyber Space Labs 1-1 Hikari-no-oka Yokosuka-shi Kanagawa-ken 239-0847 JAPAN shinya@nttcvg.hil.ntt.co.jp</p> <p>Coupling physically based techniques and image morphing techniques has the potential to yield new directions in computer animation. This sketch demonstrates examples of this coupling approach: successful syntheses of the stochastic motion of plants under the influence of wind, in which 2D textures are realistically animated based on dynamic simulation.</p>	

Friday 13 August 10:30 am - 12:15 pm

M Modeling

Hard Core Modeling

Chair: Michael Gleicher, University of Wisconsin

Room 403A

Shape Extraction for a Polygon Mesh

Tiow Seng Tan
National University of Singapore
School of Computing
Lower Kent Ridge Road
119260 SINGAPORE
tants@comp.nus.edu.sg

A new technique (and its preliminary experimental results) to derive geometric shape: hierarchical arrangement of polygons.

Free-Form Curve Generation By Recursive Subdivision of Polygonal Strip Complexes

Ahmad Nasri
American University of Beirut
Department of Math and Computer Science
PO Box 11-236
Beirut, LEBANON
anasri@aub.edu.lb

A new method for designing free-form curves by recursive subdivision of polygonal complexes and some of its applications in computer-aided geometric design and computer graphics such as physically based animation, shape control, interpolation of meshes or curves, and trimming of surfaces.

Interactive CSG

Chris Butcher
Department of Computer Science
University of Otago
PO Box 56
Dunedin, NEW ZEALAND
cbutcher@cs.otago.ac.nz

A novel space subdivision allows interactive construction of CSG through direct manipulation of the component objects. Algebraic surfaces are polygonized for hardware display, preserving cut edges and surface shading.

A Level-Set Approach for the Metamorphosis of Solid Models

David Breen
Caltech Computer Graphics Lab
MS 348-74
Pasadena, California 91125 USA
david@gg.caltech.edu

An active deformable surface, represented as a level set (iso-surface) of a discretely sampled scalar function of three dimensions, that smoothly changes (morphs) one solid model into another.

Friday 13 August 10:30 am - 12:15 pm

R Rendering

Image-Based Rendering

Chair: Marie-Paule Cani, Imagis GRAVIR/IMAG

Room 408AB

3D Imaging System for Rapid Response on Remote Sites

J-Angelo Beraldin
National Research Council Canada
1500 Montreal Road
M-50
Ottawa, Ontario K1A-0R6
CANADA
angelo.beraldin@iit.nrc.ca

A compact 3D laser imaging system for cultural-heritage applications that require rapid response on remote sites affected by natural disasters. Though portability is important, accuracy is preserved in order to obtain high-quality, realistic 3D reconstruction.

Rendering 3D Objects into Photographs Taken by Uncalibrated Perspective Cameras

 Qian Chen
University of Southern California
855 West El Repetto Drive, #56D
Monterey Park, California 91754
USA
qianchen@usc.edu

This technique for inserting objects into real images taken by uncalibrated cameras is based on new camera-pose estimation algorithms that use projective reconstruction.

Shading and Shadow Casting in Image-Based Rendering Without Geometric Models

Akihiro Katayama
Mixed Reality Systems Laboratory
Inc.
6-145 Hanasaki-cho
Nishi-ku, Yokohama 220-0022
JAPAN
katayama@mr-system.co.jp

A real-time rendering method that changes the shading of image-based objects and casts appropriate shadows according to the motion of viewpoint or objects and transitions in local lighting.

Image-Based Modeling, Rendering and Lighting in "Fiat Lux"

Haarm-Pieter Duiker
4842 McConnell Avenue
Los Angeles, California 90066 USA
duiker@uclink4.berkeley.edu

How image-based modeling, rendering, and lighting were used to create the animation "Fiat Lux" (SIGGRAPH 99 Electronic Theater). The geometry, appearance, and illumination of the environments were acquired through digital photography and augmented with synthetic objects to create the animation.

Friday 13 August 2:15 - 4 pm

FX Animation & Special Effects

Extracting and Editing Motion | Chair: **Curtis Edwards, Disney Feature Animation** | **Room 403A**

Real-Time Translation of Human Motion from Video to Animation



Tsukasa Noma
Kyushu Institute of Technology
Department of Artificial Intelligence
680-4, Kawazu
Iizuka, Fukuoka 820-8502 JAPAN
noma@ai.kyutech.ac.jp

A robust top-down approach to translating human motion in video images to computer animation. Motion generators animate a virtual human from video-image information.

Automatic Recognition and Mapping of Constraints for Motion Retargeting

Rama Bindiganavale
University of Pennsylvania
CIS/SEAS
200 South 33rd Street
Philadelphia, Pennsylvania 19104 USA
rama@graphics.cis.upenn.edu

A new technique to automatically recognize, extract, and map spatial and visual constraints from a virtual human's interactions with other objects anthropometrically scaled agents.

3D Gait Reconstruction Using Two-Camera Markerless Video

Suba Varadarajan
The Ohio State University
2201 Sutter Parkway
Dublin, Ohio 43016 USA
varadara@cis.ohio-state.edu

Gait analysis is a valuable tool for studying walking disorders. This research focuses on simulation and visualization of gait motion using anatomical features from markerless video for follow-up analysis.

Tracking and Modifying Human Motion Data Using Dynamic Simulation

Victor Zordan
Georgia Institute of Technology
College of Computing
801 Atlantic Avenue
Atlanta, Georgia 30332 USA
victor@cc.gatech.edu

Using dynamic simulation to track and modify human-motion data. Modifications include adjustments for new characters and new situations as well as re-ordering and transitioning between motion segments.

Friday 13 August 2:15 - 4 pm

FX Animation & Special Effects

Simulation for Animation | Chair: **Marcus Mitchell, Digital Domain, Inc.** | **Room 408AB**

Asynchronous, Adaptive Rigid Body Simulation

Stephen Chenney
University of California at Berkeley
EECS, Computer Science Division
387 Soda Hall, No 1776
Berkeley, California 94720 USA
schenney@cs.berkeley.edu

A new algorithm for rigid body simulation that is both asynchronous (different objects are updated at different times) and adaptive (each object selects its optimal update frequency).

Real-Time and Physically Realistic Simulation of Global Deformation

Yan Zhuang
University of California, Berkeley
Computer Science Department
417 Soda Hall
Berkeley, California 94720 USA
yzhuang@cs.berkeley.edu

Application of graded nonlinear FEM to simulate global deformation of 3D flexible objects in real time and a simple, efficient collision-time-integration scheme.

Methods for Preventing Cloth Self-Intersection

John McDonald
DePaul University
School of CTI
243 South Wabash Avenue
Chicago, Illinois 60604 USA
jmcdonald@cs.depaul.edu

Cloth-cloth interactions are highly complex. Colliding patches of cloth push on and slide against each other. This alternative approach to modeling cloth prevents self-intersections and reacts in a realistic manner as the cloth collides with itself. It does not sacrifice the visual integrity of the simulation and yields realistic self-collisions in cloth.

Multifluid Finite-Volume Navier-Stokes Solutions for Realistic Fluid Animation

John Turner
Blue Sky Studios
One South Road
Harrison, New York 10528 USA
turner@blueskystudios.com

A multifluid, incompressible, variable-density, finite volume solution of the Navier-Stokes equations for generation of realistic fluid animation. A high-resolution tracking algorithm is used to capture the complex topology of interfaces, and results are rendered using blobs.

Electronic Schoolhouse:

Educators Program | sigKIDS | Community Outreach

In the Electronic Schoolhouse, everyone is an educator and everyone is a student. Attend a paper or a panel in the Classroom. Participate in a hands-on class in the Workshop. Wander through a wonderland of interactive installations in the Playground. Use the Library to check out the schedule of daily Schoolhouse activities, collect resources, or gather with your colleagues for impromptu brainstorming sessions. Many Schoolhouse projects integrate education, experience, and inspiration by offering different perspectives in the Classroom, Workshop, and Playground. (You will see these noted below.) Use this schedule to navigate your week of presentations by Electronic Schoolhouse students, teachers, and professionals.





Co-Chairs

Jodi Giroux
Scarsdale Public Schools

Anne Richardson
StarMedia

Jill Smolin
Cinesite Visual Effects

Locations

Office: Room 401
Library: Room 402A
Playground: Room 404 & 405
Classroom: Room 403B
Workshop: Room 402B

Days

Monday 9 August 8:30 am - 6 pm
Tuesday 10 August 8:30 am - 6 pm
Wednesday 11 August 9 am - 6 pm
Thursday 12 August 8:30 am - 6 pm
Friday 13 August 8:30 am - 4 pm

Hours

The Electronic Schoolhouse Annotated Film Show

Room 409

Monday-Thursday 3:45 pm
Take a look behind the pixels at the splines, NURBS, ideas, and storyboards that form the foundation of many of the incredible animations in the SIGGRAPH 99 Computer Animation Festival. This combination of presentation, film show, and handouts will give all kinds of educators and students a rare perspective on the process of creating animation.

Committee

Laurie Burruss
Pasadena City College

David Cruz
StarMedia

Paul deBonis
Los Angeles Unified School District

Etta Dileo
The Write Approach

Eric Huelsman
Friedman 3D

Bill LaBarge
Rochester Institute of Technology

Joe Lohmar
Digital Domain, Inc.

Kathleen Milnes
Entertainment Industry Development Corporation

Randii Oliver
Raytheon

Christa Santiago
StarMedia

Evelyn Seubert
Workforce LA

Kristen Stratton
Warner Brothers

Richard Taylor
California State University, Long Beach

Jason Thomas
University of California, Los Angeles

Electronic Schoolhouse Jury

Jodi Giroux
Scarsdale Public Schools

Valerie Miller
SIGGRAPH 2000 Educators Program Chair
Georgia State University

Adele Newton
SIGGRAPH 2000 Community Outreach Chair
Newton Associates

Anne Richardson
StarMedia

Jill Smolin
Cinesite Visual Effects

Monday 9 August Classroom**8:30 - 10:15 am** Room 403B
An Introduction to Digital Effects **FX**

Visual effects are a mystery to those who are not involved in the process. This paper summarizes the basic concepts and the pieces that make up the picture.

Steve Wright Cinesite Visual Effects
1017 North Las Palmas Avenue
Los Angeles, California 90038 USA
wright@cinesite.com

10:30 - 11:45 am Room 403B
Creating 2D Animation **FX**

Compositing and 2D animation are exciting fields for digital artists, effects editors, and designers. But they need to understand the basic software.

Marco Paolini Digital FilmWorks
3330 Cahuenga Boulevard West, Suite 300
Los Angeles, California 91351 USA
marco@dfw-la.com

11:45 am - 1 pm Room 403B
Creating 3D Animation **FX**

3D computer animation is everywhere, from Saturday morning cartoons to high-end feature film creatures and effects. What may not be obvious, though, is how these effects were created. This presentation covers the basics of the production tasks of the 3D artist.

Eric Hanson Dream Quest Images
3509 Purdue Avenue
Los Angeles, California 90066 USA
ehanson@loop.com

Monday 9 August Workshop**2 - 6 pm** Room 403B
Art Before Technology or Technology Before Art? That is the Question! **FX A**

AnimAction instructors introduce attendees to the classical animation process, stressing the importance of the basics and illustrating how a solid foundation in the art of animation supports creation and teaching.

Clifford Cohen AnimAction, Inc.
415 South Topanga Canyon Boulevard
Suite 193
Topanga, California 90290 USA
cliffo@animaction.com

Tuesday 10 August Classroom**9 - 9:30 am** Room 403B
Computer Camp: For Girls Only! **IT**

A Web-based computer camp for girls only helps thwart the image of computer and math-related activities as male dominions. Graphic design, interactivity, and human-interface concepts are emphasized.

Rebecca Mercuri University of Pennsylvania
P.O. Box 1166
Philadelphia, Pennsylvania 19105 USA
mercuri@acm.org

9:30 - 10 am Room 403B
Organizing Summer Computer Graphics Camps

How the annual Computer Graphics Summer Camp at Purdue University is organized and operated for students from all states and territories in the United States.

Mark W. McK. Bannatyne Purdue University
Department of Computer Graphics
1419 Knoy Hall, Room 363
West Lafayette, Indiana 47907-1419 USA
mwbannatyne@tech.purdue.edu

10:30 - 11 am Room 403B**The Atmosphere: Incorporating Interactive Multimedia into the Classroom** **CAL**

This multimedia alternative was inspired by an introductory atmospheric science class in which the instructor described precipitation processes by drawing pictures and waving his hands.

MaryEllen Coleman IBM Corporation
70 Rossway Road
Pleasant Valley, New York 12569 USA
mea@us.ibm.com

11 - 11:30 am Room 403B
The Round Earth Project: Collaborative VR for Elementary School Kids **IT**

An ImmersaDesk, a stereo-capable monitor, and a collaboration among researchers in computer science, education, and psychology investigating two alternative pedagogical strategies help teach children that the Earth is spherical.

Andrew Johnson Electronic Visualization Laboratory, EECS Department (M/C 154)
University of Illinois at Chicago
Chicago, Illinois 60607-7053 USA
aej@evl.uic.edu

11:30 am - noon Room 403B
Exploratories: An Educational Strategy for the 21st Century

What computer-based learning environment will students of all ages be immersed in five, 10, or 20 years from now? And, how can we best prepare for learning and teaching in that environment? The Exploratories project uses the introductory undergraduate computer graphics course as a testbed to address these questions.

Rosemary Michelle Simpson
Brown University
Computer Science Department
Box 1910
Waterman Street - 4th Floor
Providence, Rhode Island 02912 USA
rms@cs.brown.edu

1 - 2 pm Room 403B
ThinkQuest: Students & Teachers Exploring a Global Web-Based Education Project

(See also Playground)

ThinkQuest challenges teachers and students of all ages to use the Internet in innovative and exciting ways as a collaborative, interactive teaching and learning tool. In this panel, students and teachers discuss the process of creating a Web-based educational resource.

Robert Sibley Advanced Network & Services
Educational Project Manager
200 Business Park Drive
Armonk, New York 10504 USA
sibley@advanced.org

2 - 2:30 pm Room 403B
SP3D and The Lighthouse: Explorations in 3D Internet Learning

(See also Playground) IT

"Shakey's Place 3D" and "The Lighthouse" Web sites, designed to breathe life into Shakespeare, philosophy, and the students who study them, use 3D graphics to create striking environments that increase the educational value of interactive devices. (A ThinkQuest project.)

Clint Andrew Hall Rockhurst College
1240 SW Crossing Drive
Lee's Summit, Missouri 64081 USA
st076437@vax1.rockhurst.edu

2:30 - 3 pm Room 403B
Why is the Mona Lisa Smiling? CAL

(See also Playground; Workshop, Tuesday 3 - 4:30 pm)

How US high school computer graphics students collaborated with partners in Sweden, to investigate the centuries-old enigma: Why is the Mona Lisa Smiling? (A ThinkQuest project.)

Steve Feld John F. Kennedy High School
99 Terrace View Avenue
Bronx, New York 10463 USA
sjfeld@erols.com

3 - 4 pm Room 403B
Web Pages, Interactive Interfaces, and Worm Holes: The Next Generation of User Interface Designers IT

In the spring of 1998, a group of fifth- and sixth-grade students worked with a team of information development professionals from IBM while learning computer technology and teamwork. This panel includes a 20-minute videotape documenting the experience and exploring the students' Web sites.

Carol Bahruth
MaryEllen Coleman
IBM Corporation
70 Rossway Road
Pleasant Valley, New York 12569 USA
mea@us.ibm.com

4:15 - 4:45 pm Room 403B
Proposal Writing 101: Ensuring Your Submission is Understood

Contributing submissions to the annual SIGGRAPH conference can be frustrating when you don't know the submission, review and jury process. This presentation gives the hopeful presenter some inside information and discusses some basic rhetorical considerations to ensure that the proposal is considered on the merit of its content.

Tom Burkhart University of Iowa
308 East Burlington #107
Iowa City, Iowa 52240-1602 USA
thomas-burkhart@uiowa.edu

4:45 - 6 pm Room 403B
Get a Job! A Recruiter Tells You What You Need to Know

What does it take to get a job at a visual effects, traditional animation, or interactive company? This session summarizes how to put your life and your talent – or your students' life and talent – on a one-page résumé and a three-minute-or-less demo reel.

Pamela Thompson Independent Recruiter
10173 Sully Drive
Sun Valley, California 91352 USA
pamrecruit@aol.com

Tuesday 10 August Workshop

8:30 am - noon Room 402B
Teaching & Creating Animatics FX

This hands-on workshop guides educators and students through the process of making an animatic, a standard tool for checking visual continuity and timing.

Jim Keeshen Animatics, Inc.
1950 Sawtelle Boulevard, #220
Los Angeles, California 90025 USA
animatics@aol.com

1:30 - 3 pm Room 402B
Hands-On Universe: Teaching Astronomy With Java-Based Image Processing Tools

(See also Playground) IT

Observational astronomy introduces the concepts of image processing, visualization, and computer graphics to high school students. This workshop focuses on the Web-based tools that students use to manipulate and analyze astronomical images.

Carl Pennypacker
John Refling
Lawrence Berkeley National Laboratory
2150 Oxford Street, Suite #21
Berkeley, California 94704 USA
refling@comet.lbl.gov

3 - 4:30 pm Room 402B
Why is the Mona Lisa Smiling? CAL

(See also Playground; Classroom, Tuesday 2:30 - 3 pm)

How a multidisciplinary, inquiry-driven international collaborative Internet project developed by US high school seniors and their partners in Sweden uses the unique research, multimedia, and interactive capacities of the Internet to shape specific constructivist learning experiences. (A ThinkQuest project.)

Steve Feld John F. Kennedy High School
99 Terrace View Avenue
Bronx, New York 10463 USA
sjfeld@erols.com

4:30 - 6 pm Room 402B
Visual Effects Through Adaptive Technologies IT FX

Wheelchair-bound animators are logical candidates for animation studios looking for employees with aptitude and drive. This workshop introduces the input devices and software that can make a career in computer animation possible for differently abled computer users.

Mike Amron Digital Effects Artist
 4071 Lyceum Avenue
 Los Angeles, California 90066 USA
 misha@anet.net

Wednesday 11 August Classroom

9:45 - 10:15 am Room 403B
Virtual Harlem
 (See also Playground)

Students visualize the setting and context of fictional texts in a computer-generated environment that reconstructs approximately 10 square blocks of Harlem in the 1920s (the Harlem Renaissance period).

Bryan Carter Advanced Technology Center
 University of Missouri-Columbia
 100 Locust Street Building
 Columbia, Missouri 65211 USA
 ccbryanc@atc.missouri.edu

10:15 - 10:45 am Room 403B
When Children Draw in 3D FX
 (See also Playground;
 Workshop, Wednesday 11 am - noon)

A student animation project in which children tell stories, draw, and work with modeling compound to create characters and scenery, and then produce their stories on computers.

Katuska Varela Independent Artist
 Calle Semprun
 Qta OLIM Sta Monica
 Caracas VENEZUELA
 kvbmaz@hotmail.com

10:45 - 11:45 am Room 403B
Museums and Computer Games IT FX
 (See also Playground)

How curators, writers, interactive designers, producers, and educators, each with different agendas, work together to create an entertaining learning environment for young museum visitors.

Liz Caffry
 Elisabeth Cameron
 Los Angeles County Museum of Art
 Carla Roth Think Jacobson & Roth
 1242 South Stanley Avenue
 Los Angeles, California 90019 USA
 croth@primenet.com
 Bill Zullo Z-Digital

11:45 am - 12:15 pm Room 403B
The Teacher's Mid-Life Crisis: Moore's Stairmaster of the Fittest

Teachers face a serious challenge: the ongoing obsolescence of knowledge and skills, and the imperative to continually upgrade those facets to keep pace with technology and culture.

Gregory P. Garvey
 72 Ralston Avenue
 Hamden, Connecticut 06517 USA

2 - 3 pm Room 403B
A Creative Journey A
 (See also Playground)

This panel explores a virtual exhibition of the "Space Field" series, which can be viewed anywhere on a personal computer and shows how art can be the conduit to teaching young children about the worlds of computers and science.

Bob Goldstein Digital Consultant
 Jane Raphael Wonderland Avenue School
 Victor Raphael Victor Raphael Productions
 328 North Irving Boulevard
 Los Angeles, California 90004-1508 USA
 v.raphael@worldnet.att.net

3 - 3:30 pm Room 403B
Developing Creativity: A Curriculum Based on the Use of Computer Graphics Technology A

(See also Playground;
 Workshop, Wednesday 4:15 - 5:15 pm)

A practical curriculum that unleashes students' creative potential using state-of-the-art computer graphics technology and provides a pathway for students to explore, develop, and realize their individual creative potential.

Jeremy Sutton Portrayals
 245 Everett Avenue
 Palo Alto, California 94301 USA

3:30 - 4 pm Room 403B
Drawing & Learning A

London-based art and design institutions are developing a family of products to address the important subject of drawing. The focus is on developing a student's visual literacy.

Robin Baker Ravensbourne College of Design & Communication
 Walden Road
 Chislehurst
 Kent BR7 5SN ENGLAND
 r.baker@rave.ac.uk

4:15 - 6 pm Room 403B
Art and Technology: Electronic Resources From the Getty 

ArtsEdNet: A Web Site in Progress
ArtsEdNet consists of over 2,000 pages of curriculum resources, including lesson plans and online images from around the world. In this paper, the ArtsEdNet team details how the site became an expansive and extensive Web resource.

Exploring the Artworlds of Los Angeles: Worlds of Art
This innovative Web curriculum resource provides lessons that tap Los Angeles' many artists, museums, community art programs, and public art.

Presenting and Managing Electronic Visual Resources: The Getty Experience
How the Getty Education Institute and the J. Paul Getty Museum collaborated to produce online exhibitions focusing on two of the Museum's opening exhibitions.

Ria Bagaybagayan Getty Education Institute for the Arts
1200 Getty Center Drive Suite 600
Los Angeles, California 90049-1683 USA
kbagayan@getty.edu

Candace M. Borland
Naree Wongse-Sanit
Getty Education Institute for the Arts
Anne-Marie Schaaf J. Paul Getty Museum

Wednesday 11 August Workshop

11 am - noon Room 402B
When Children Draw in 3D 
(See also Playground;
Classroom, Wednesday 10:15 - 10:45 am)

Computers illustrate a student animation project that used drawings to create models and textures of characters and scenery in children's stories.

Katiuska Varela Independent Artist
Calle Semprun
Qta OLIM Sta Monica
Caracas, VENEZUELA
kvbmaz@hotmail.com

2 - 4 pm Room 402B
The Interactive Learning Environment
(See also Playground)  

How the Interactive Learning Environment can be integrated into classrooms. Attendees use ILE as a fourth grader would to study California life in the late 1800s, then apply their learning to classroom-like discussions with each other and the workshop instructor.

Stephen Detwiler
California State University, Chico
1163 East 8th Street
Chico, California 95928 USA
detwiler@ecst.csuchico.edu
Jonathan Hendryx Arizona State University
Elizabeth Padilla
California State University, Chico

4:15 - 5:15 pm Room 402B
Developing Creativity: A Curriculum Based on the Use of Computer Graphics Technology 
(See also Playground; Classroom, Wednesday 3 - 3:30 pm)

A curriculum that unleashes students' creative potential with state-of-the-art computer graphics technology.

Jeremy Sutton Portrayals
245 Everett Avenue
Palo Alto, California 94301 USA
jeremy@portrayals.com

Thursday 12 August Classroom

9 - 10:15 am Room 403B
Integrating Art and Technology in a State-Wide Curriculum 

This panel discusses issues related to how and why arts instruction in California public schools can be supported with contemporary technologies to enhance student learning and their preparation for life after graduation.

Taylor Gutermute
California Department of Education
Lynn Hickey
Los Angeles Unified School District
7829 Goodland Avenue
North Hollywood, California 91605 USA
John Hughes
Rhythm & Hues Studio
Alan Warhaftig
Fairfax Magnet High School for the Arts

10:30 - 11:30 am Room 403B
Digital Design Education at UCLA 
(See also Playground)

Panelists discuss the digitally oriented curriculum of the design department at the University of California, Los Angeles and present examples of student work. The department completely revised its program three years ago to incorporate digital technologies.

Rebecca Allen
Mits Kataoka
Cameron McNall University of California, Los Angeles Design Department
1300 Dickson Art Center
Los Angeles, California 90066 USA
cmcnall@ucla.edu
Gail Swanlund
University of California, Los Angeles

11:30 am - 12:30 pm Room 403B
The Integration of Graphics, Video, Science, and Communication Technologies

As part of a Sister City project, students developed a Web site that allows science students, teachers, government officials, university personnel, and environmental scientists and engineers to share data, graphics, video, and artwork about the South Florida Everglades and the Hula Valley in Israel.

D. Cauffield
 Glenn Dame
 Kevin J. Meehan
 Robert Wickman
 Forest Hill Community High School
 412 SW 10th Avenue
 Boynton Beach, Florida 33435 USA
 hfore29@bellsouth.net

2:15 - 4 pm Room 403B
The 4D Virtual Museum of the City of Bologna, Italy

(See also Playground;Workshop, Thursday 4:15 - 5 pm)

The process of integrating historical and graphic resources with current computer graphics technology to create a virtual time machine that plunges the participant into 12th century Bologna, Italy.

Francesca Bocchi University of Bologna
 via Zamboni 34
 Bologna, ITALY 40126
 bocchi_f@biblio.cib.unibo.it
 Marla Elena Bonfigli
 Manuela Ghizzoni
 Rosa Smurra
 University of Bologna
 Fernando Lugli Centro Ricerche S.C.r.l.

4:15 - 5:15 pm Room 403B
Walking the Tightrope: Balancing Digital and Traditional Skills in Undergraduate Education **A**

A no-holds-barred debate on the challenges of balancing digital techniques in a fine art curriculum. Illustrations from faculty and students demonstrate the creative advantages of applying traditional skills in developing the most elaborate computer animations.

Jeremy Butler
 Adrian Getzoff
 Kathy Griswold
 Jeffrey Lerer
 John McIntosh School of Visual Arts
 209 East 23rd Street
 New York, New York 10010-3994 USA
 jmacsva@earthlink.net
 Joel Sevilla

5:15 - 5:45 pm Room 403B
High-End Interactive Media in the Museum **IT** **A**

How high-end interactive media, computer graphics applications, and virtual reality technology are used in museums.

Particular focus is given to projects created by the Foundation of the Hellenic World, which uses immersive virtual reality, VRML, and 3D graphics to reconstruct archeological sites, historical interpretation, and education.

Maria Roussou
 Dimitris Efraimoglou
 Foundation of the Hellenic World
 38 Pouloupoulou Street
 Athens 11851 GREECE
 mr@fhw.gr

Thursday 12 August Workshop

8:30 am - noon Room 402B
Educators Workshop in 3D Computer Graphics **FX**

This session introduces students and educators to the world of high-end 3D computer graphics. Using laymen's terms and professional software, you'll work through a real-life modeling project.

Raymond Corbett Side Effects Software Inc.
 477 Richmond Street West Suite 1001
 Toronto, Ontario M5V 3E7 Canada
 rayc@sidefx.com

2:15 - 4 pm Room 402B
Supporting Online Collaborative Communities

(See also Playground)

Demonstration of the Collaboratory Project's MediaSpace and other collaborative environments that establish an easy-to-use, network-based collaborative environment to help organizations share information, resources, and expertise.

Paul Hertz Northwestern University
 The Collaboratory Project
 1890 Maple Street, Suite 175
 Evanston, Illinois 60201 USA
 paul-hertz@nwu.edu

4:15 - 5 pm Room 402B
The Creation of the Nu.M.E. Project

(See also Playground;Classroom, Thursday 2:15 - 4 pm)

How to implement a virtual environment for an electronic museum designed as a four-dimensional city. This workshop presents the 4D navigation and graphic processing phase of the project.

Maria Elena Bonfigli University of Bologna
 Antonella Guidazzoli CINECA, Interuniversity Supercomputing Center
 Via Magnanelli 6/3
 Casalecchio di Reno (Bologna) 40033 ITALY
 guidazzoli@cineca.it

Friday 13 August Classroom

8:30 - 9:30 am Room 403B

Going Farther in Less Time: Responding to Change in Introductory Graphics Courses

The field of computer graphics has matured greatly since the formal statement of the introductory undergraduate course was created for ACM/IEEE Curriculum 91. This panel describes a philosophical basis for change and gives examples of courses that are responding to the change.

Steve Cunningham

California State University, Stanislaus

Scott Grissom

University of Illinois at Springfield

Lewis E. Hitchner

California Polytechnic State University

Rosalee Wolfe DePaul University

School of CTI

243 South Wabash Avenue

Chicago, Illinois 60604 USA

wolfe@cs.depaul.edu

9:30 - 10 am Room 403B

Incorporating Principles and Examples from Art/Design and Film/Video into a CS Computer Graphics Course **A**

How principles and examples from art and design, film, and video can be incorporated into a computer science computer graphics course.

Scott Owen Georgia State University

Department of Mathematics & Computer
Science

30 Pryor Street, Suite 750

Atlanta, Georgia 30303 USA

owen@siggraph.org

10:30 - 11:30 am Room 403B

Math: What's the Use?

Behind all great (and not so great) computer graphics images stands a great lady: Mathematics. This presentation reviews the mathematics used in generating graphics images, from Euclidean geometry to the basics of spline interpolation.

Valerie Miller Georgia State University

Department of Mathematics & Statistics

Atlanta, Georgia 30303 USA

valerie_miller@siggraph.org

11:30 am - 12:30 pm Room 403B

Math and Computer-Generated Effects: Tools of the Trade **FX**

Mathematical principles as they appear as visual effects in major feature films.

Marcus Mitchell, a software designer at Digital Domain, shows examples of work, including "Titanic," "The Fifth Element," "Supernova," and "The Fight Club."

Marcus Mitchell Digital Domain, Inc.

Software Development

1645 Crescent Place

Venice, California 90291 USA

marcus@d2.com

2:15 - 3:15 pm Room 403B

The Future in Computer Graphics Education

Recommendations for the future of computer graphics education from the Computer Graphics and Visualization Education Workshop (GVE 99), co-sponsored by Eurographics and SIGGRAPH, 3-5 July in Coimbra, Portugal.

Judith R. Brown University of Iowa

Dena E. Eber Bowling Green State University

Werner Hansmann University of Hamburg

Michael B. McGrath

Colorado School of Mines

Division of Engineering

Golden, Colorado 80401 USA

mike_mcgrath@siggraph.org

Jose Carlos Teixeira

University of Coimbra, PORTUGAL

3:15 - 3:45 pm Room 403B

Creative Programming: Merging the Artist With the Computer Programmer **A**

(See also Playground)

The Creative Programming Program at the University of Gävle is unique in its approach to education and selection of students. It allows highly creative and intelligent people to enhance their abilities in the world of digital media by combining their skills from other areas, such as art or programming.

Eva Carling

Mark Ollila

University of Gävle

Kungsbäckvagen

Gävle SE-80 176 SWEDEN

molly@hig.se

Friday 13 August Workshop

9 am - noon Room 402B

Introduction to 3D Concepts for Teachers

A workshop for teachers who find that they want to (or must) include 3D computer graphics in their curriculum and don't know where to start. In a combination of lecture, demonstration, and hands-on work, the workshop covers the basic concepts of 3D on the computer, with pointers on how to teach them.

Pam Hogarth Gnomon, Inc.

1015 North Cahuenga Boulevard

Suite 5430i

Hollywood, California 90038 USA

pam@gnomon3d.com

2:15 - 4 pm Room 402B

Hands-On Animation **FX**

This workshop takes educators and students through the process of creating a computer-generated animated character.

Shawn Dunn Alias|Wavefront

Global Education & Training

210 King Street East

Toronto, Ontario M5A 1J7

CANADA

sdunn@aw.sgi.com

The 4D Virtual Museum of the City of Bologna, Italy

(Classroom, Thursday 2:15 - 4 pm)
(Workshop, Thursday 4:15 - 5 pm)

Discover the medieval streets and Renaissance palazzi of 12th Century Bologna, Italy via this city time machine.

Antonella Guidazzoli

CINECA

Interuniversity Supercomputing Center

Via Magnanelli 6/3

Casalecchio di Reno (Bologna) 40033 ITALY

guidazzoli@cineca.it

A Creative Journey

(Classroom, Wednesday 2 - 3 pm)

Take a virtual tour of far away galaxies and the artistic process. This CD-ROM has been accepted into the collections of The Museum of Modern Art, New York, and many others.

Victor Raphael

Victor Raphael Productions

328 North Irving Boulevard

Los Angeles, California 90004 USA

v.raaphael@worldnet.att.net

ColorWeb

Two exploratory sets: the first teaches basic concepts in additive and subtractive color mixing; the second is designed to develop an intuitive feeling for the signal-processing aspects of color perception and has been used by teachers around the world in their existing curricula.

Anne Spalter

Brown University

Department of Computer Science

Box 1910

115 Waterman Street

Providence, Rhode Island 02912 USA

ams@cs.brown.edu

Creative Programming: Merging the Artist With the Computer Programmer

(Classroom, Friday 3:15 - 3:45 pm)

Students' art and interactive projects from Creative Programming, where computer scientists and professional artists learn together in a lab environment.

Mark Ollila

University of Gävle

Kungsbäckvagen

Gävle SE-80 176 SWEDEN

molly@hig.se

Digital Design Education at UCLA

(Classroom, Thursday 10:30 - 11:30 am)

Student works from the newly redesigned digital design curriculum.

Cameron McNall

University of California, Los Angeles

Design Department

1300 Dickson Art Center

Los Angeles, California 90066 USA

cmcnall@ucla.edu

Education Delivered Through Storytelling: Using Virtual Reality as an Educational Tool

Education through storytelling in a collaborative virtual reality environment where students of all ages interact directly with a 28-foot curved virtual reality world.

Charles W. Kesler

East Carolina University

204 Erwin Building

Division of Continuing Studies, Global Campus

Greenville, North Carolina 27858 USA

keslerc@mail.ecu.edu

FELIX 3D Display

Working with scientists, students in Stade, Germany developed a 3D display that is viewable from almost any angle without special glasses.

Knut Langhans

Youth Research Center

Vincent Lubeck High School

Entenstieg 5

Stade 21682 GERMANY

felix3D@aol.com

Figures of Speech

3D animation students create an eight-minute animation that humorously depicts interesting colloquialisms of various origins.

Janice Squire

Cogswell Polytechnical College

2356 Thompson Court

Mountain View, California 94043 USA

jsquire@cogswell.edu

Hands-On Universe: Teaching Astronomy With Java-Based Image Processing Tools

(Workshop, Tuesday 1:30 - 3 pm)

How high school students use image processing, visualization, and computer graphics in observational astronomy.

John P. Refling

Hands-On Universe

Lawrence Berkeley National Laboratory

2150 Oxford Street, Suite #21

Berkeley, California 94704 USA

refling@comet.lbl.gov

How to Marry an Éclair: Anatomy of an Animated Tale

The Abram Friedman Occupational Center integrates traditional animation and computer animation to provide learning for students who want to concentrate solely on a career in one or the other.

Eric Huelsman

Friedman 3D

1646 South Olive Street

Los Angeles, California 90015 USA

afoc@earthlink.net

The Interactive Learning Environment

 (Workshop, Wednesday 2 - 4 pm)

Six networked PCs and a server allow users to interact and explore in a hands-on, educational environment.

Stephen Detwiler

The Interactive Learning Environment Project

California State University, Chico

1163 East 8th Street

Chico, California 95928 USA

detwiler@ecst.csuchico.edu

Minotaur: A Tactile Archaeology Game for Kids

An educational museum game on Greek mythology, for children aged 6-8, designed to stimulate the senses of sight, sound, and touch.

Claudia Chow

Pratt Institute
14A St. James Place
Brooklyn, New York 11205 USA
cchow@pratt.edu

Museums and Computer Games

(Classroom, Wednesday 10:45 - 11:45 am)

An engaging computer game that helps children decipher meaning in objects from around the world.

Carla Roth

Think Jacobson & Roth
1242 South Stanley Avenue
Los Angeles, California 90019 USA
croth@primenet.com

People in the Past: The Ancient Puebloan Farmers of Southwest Colorado

With this CD-ROM and its companion 160-page teacher's guide (designed for grades 4-12), users explore the Pueblo, nearby canyons, and the archaeologist's tent.

Theresa Breznau

Living Earth Studios, Inc.
PO Box 317
Bluff, Utah 84512 USA
livearth@lasal.net

SIGGRAFFITI Wall: Multi-Input Painting

Throw beanbags at a wall and see paintings come to life.

Dave Warner

Mindtel LLC
500 University Place
Syracuse, New York 13210 USA
davew@well.com

SP3D and The Lighthouse

(Classroom, Tuesday 2 - 2:30 pm)

Web sites that breathe life into Shakespeare, philosophy, and the students who study them. (A ThinkQuest project.)

Clint Andrew Hall

Rockhurst College
1240 SW Crossing Drive
Lee's Summit, Missouri 64081 USA
st076437@vax1.rockhurst.edu

Supporting Online Collaborative Communities

(Workshop, Thursday 2:15 - 4 pm)

A network-based collaborative environment that supports education, cultural, and nonprofit communities in the greater Chicago area.

Paul Hertz

Northwestern University
The Collaboratory Project
1890 Maple Street, Suite 175
Evanston, Illinois 60201 USA
paul-hertz@nwu.edu

ThinkQuest

(Classroom, Tuesday 1 - 2 pm)

An educational initiative committed to advancing learning through computer and networking technology.

Robert Sibley

Advanced Network & Services
Educational Project Manager
200 Business Park Drive
Armonk, New York 10504 USA
sibley@advanced.org

Virtual Harlem

(Classroom, Wednesday 9:45 - 10:15 am)

Visualize the setting and context of fictional texts in a computer-generated environment by navigating streets, interacting with historical characters, and experiencing the sights and sounds of 1920s Harlem.

Bryan Carter

Advanced Technology Center
University of Missouri-Columbia
100 Locust Street Building
Columbia, Missouri 65211 USA
ccbryanc@atc.missouri.edu

Virtual Science Laboratory

Junior high and high school students experience how scientists in a real-world setting analyze various public health-related matters.

Nobuo Masuda

Cyber Entertainment, Inc.
5111 Denny Ave #10
North Hollywood, California 91601 USA
masuda@cyber-net.co.jp

Why is the Mona Lisa Smiling?

(Classroom, Tuesday 2:30 - 3 pm)
(Workshop, Tuesday 3 - 4:30 pm)

How John F. Kennedy High School computer graphics students collaborated with partners in Borlange, Sweden to investigate the centuries-old enigma: "Why is the Mona Lisa Smiling?" (A ThinkQuest project.)

Steve Feld

John F. Kennedy High School
99 Terrace View Avenue
Bronx, New York 10463 USA
sjfeld@erols.com

Art Gallery: technOasis

After several decades of using digital tools, artists are now using them to create mature yet adventurous work that is attracting serious attention. Digital capabilities are expanding. Experiments are emerging. Aesthetic boundaries are evolving. And new art forms and art media are taking shape. Artists are using off-the-shelf software, writing software for specific artworks, and applying custom software written specifically for them. Digitally influenced artwork is no longer seen as a gimmick, but as hard-hitting content.

The SIGGRAPH 99 Art Gallery: technOasis inspires quiet reflection on these turn-of-the-century artistic developments. The 100+ technOasis artworks include digital paintings, drawings, and photographs; sculpture; installations; Web-based projects; and site-specific works.



Art Gallery: technOasis Chair
Marla Schweppe
Rochester Institute of Technology

Administrative Assistant
Margaret Thompson
Rochester Institute of Technology

Location
Room 153AB, Concourse
Office: Room 153C

Days	Hours
Sunday 8 August	5 - 7 pm
Monday 9 August	9 am - 6 pm
Tuesday 10 August	9 am - 6 pm
Wednesday 11 August	9 am - 6 pm
Thursday 12 August	9 am - 6 pm
Friday 13 August	9 am - 1 pm

Committee
Nancy Ciolek
Rochester Institute of Technology

Dena Elisabeth Eber
Bowling Green State University

David Kiehl
Whitney Museum of American Art

Deanna Morse
Grand Valley State University

Sharon Uhl
Rochester Institute of Technology

Jury
Marie Cenkner
Animasaur Productions

John Grimes
Illinois Institute of Technology

David Kiehl
Whitney Museum of American Art

Jon McCormack
Monash University

Baja: Listening to the Desert

mister_ah
Art Futura
Plaza Doctor Laguna 12
Madrid 28009 SPAIN
mister_ah@yahoo.com

Chaos Revenge

Mauro Annunziato
ENEA
Via Anguillarese, 301
S. Maria di Galeria
Roma 00060 ITALY
mauro@erg056.casaccia.enea.it

Mountain Portal Waterfall Portal

John Banks
562 West Arlington Place
Chicago, Illinois 60614 USA
jsbanks@interaccess.com

Spirits Reborn

Francine Bonair
Fine Art Computer Graphic Artist
345 Webster Avenue
Suite #4L
Brooklyn, New York 11230 USA
francine.bonair@rnb.com

My Gasket

Paul Brown
PO Box 3603
South Brisbane, Queensland 4101
AUSTRALIA
paul@paul-brown.com

Language/Text Series - #3-7238 Language/Text Series - #6-7278 Language/Text Series - #9-7329

Gloria DeFilipps Brush
University of Minnesota-Duluth
Art Department
2909 Jefferson Street
Duluth, Minnesota 55812 USA
gbrush@d.umn.edu

Tortuosity: #9 Tortuosity #13 Valley

Sheriann KiSun Burnham
227 Ancona Drive
Long Beach, California 90803
USA
kisun@earthlink.net

CrossTalk

Justine Cassell
MIT Media Lab
20 Ames Street, E15-318
Cambridge, Massachusetts 02173
USA
justine@media.mit.edu

Fava Milagro Mary's Helpers

Anna Chupa
Box 678
Mississippi State, Mississippi
39762 USA
achupa@erc.msstate.edu

Ladder in the Trees

Mary Ciani
Texas A&M University
Visualization Laboratory
Langford Architecture
College Station, Texas 77843-3137
USA
ciani@viz.tamu.edu

Spines Twigs

Gary Day
University of Nebraska at Omaha
60th & Dodge
Omaha, Nebraska 68182 USA
gday@unomaha.edu

The Twilight Dance Puddle Jumpers

Daniel Despain
NAU OTLE Faculty Studio
1807 North Meadow Lark Drive
Flagstaff, Arizona 86001 USA
Daniel.Despain@nau.edu

Xrays: Bladder Xrays: Tarmie

Annika Erixån
University of Gävle/Sandviken
Hemlingbyvägen 64 A
s-Gävle, SE 802 57
erixan@swipnet.se

Colour and Drawing: From a Garden Table

James Faure Walker
88 Greenwood Road
London E8 1NE
UNITED KINGDOM
JamesFaureWalker@
compuserve.com

Looking

Penny Feuerstein
The School of the Art Institute of
Chicago
189 East Lake Shore Drive #10
Chicago, Illinois 60611 USA
pennyf@mcs.net

Tracking the Net

Franz Fischnaller
F.A.B.R.I.CATORS
Via Fratelli Brozetti 6
Milano 20129 ITALY
fabricat@galactica.it

Manxmas

Robert Frick
Digital Domain, Inc.
571 1/2 Washington Boulevard
Venice, California 90292 USA
friction@d2.com

Inside Light

Harvey Goldman
University of Massachusetts-
Dartmouth
41 Fisher Road
Westport, Massachusetts 02790
USA
hgoldman@umassd.edu

Betty's Barn Cow Talbot's Cow Cow for Drew

Susan Goldsmith
Industrial Light & Magic
3155 Kerner Boulevard
San Rafael, California 94901 USA
sg@lucasdigital.com

Miniature Telesvisor, American, 1911 Telesvisor 1892, Italian Argus Portable Telesvisor, 1898 British

Steve Gompf
Lisa Sette Gallery
4142 North Marshall Way
Scottsdale, Arizona 85251 USA
sette@getnet.com

Sisyphus

Jean-Pierre Hebert
Bruce Shapiro
4647 Via Huerto
Santa Barbara, California 93110
USA
jp@mi-fu.solo.com

**Study for DNA, Payne's Gray
Study for DNA, Pale Hues
Study for DNA, Red**

Jean-Pierre Hebert
4647 Via Huerto
Santa Barbara, California 93110
USA
jp@mi-fu.solo.com

**The Recordatori Series:
Prairie**

Paul Hertz
Northwestern University
The Collaboratory Project
1890 Maple Street, Suite 175
Evanston, Illinois 60201 USA
paul-hertz@nwu.edu

The Dance

Joyce Hertzson
Rochester Institute of Technology
College of Imaging Arts &
Sciences
73 Lomb Memorial Drive
Rochester, New York 14623 USA
jshfaa@rit.edu

98.3

98.4

98.9

98.13

Kenneth A. Huff
915 Floral Drive
Orlando, Florida 32803 USA
ken@itgoesboing.com

Tangled

Masa Inakage
The Media Studio, Inc.
2-24-7 Shichirigahama-Higashi
Kamakura 248-0025 JAPAN
inakage@media-studio.co.jp

Hyperscratch 9.0

Haruo Ishii
Alchi Prefectural Art University
30-1 Ishihata Narumi-cho Midoriku
Nagoya-shi 458-0801 JAPAN
mxc00275@nifty.ne.jp

**Composition on the Table
No.1 [PUSH], No.2
[TWIST],
No.3 [TURN], No.4 [SLIDE]**

Toshio Iwai
Mixed Reality Systems Laboratory
Inc.
6-145 Hanasaki-cho
Nishi-ku
Yokohama 220-0022 JAPAN
iwai@gol.com

**Cellular Growth:
Brillia
Wriggon
Fossy**

Yoichiro Kawaguchi
RACE, The University of Tokyo
4-6-1, Komaba,
Meguro-ku
Tokyo 153-8904 JAPAN
yoichiro@race.u-tokyo.ac.jp

Mother

Midori Kitagawa
The Ohio State University
Advanced Computing Center
for the Arts and Design (ACCAD)
1224 Kinnear Road
Columbus, Ohio 43212 USA
midori@cgrg.ohio-state.edu

**Non-Material Construction
#1
Lost Connection**

Jun Kurumisawa
ATR Media Integration &
Communications Research
Laboratories
2-2, Hikaridai, Seika-cho
Kyoto 619-0288 JAPAN
kurumi@mic.atr.co.jp

Suspended Window

Jay Lee
MIT Media Lab
20 Ames Street, E15-447
Cambridge, Massachusetts 02139
USA
jaylee@media.mit.edu

All In Your Mind

Kevin Mack
Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
shiva@d2.com

Ins and Outs

Linda Majzner
89 South Powder Mill Road
Morris Plains, New Jersey 07950
USA
llmajzner@aol.com

**Floating 1
Inbetween 1**

Mark Marcin
Bowling Green State University
123 East Evers Avenue
Bowling Green, Ohio 43402 USA
mmarcin@bgnnet.bgsu.edu

The Book of Hours

Aliyah Marr
119 Hamilton Avenue
Floor 2
Fairview, New Jersey 07022 USA
amarr@newmediaforge.com

Bookshelf Communication

Hiromi Michiyori
Hiroshima City University
3-4-1 Ozuka-Higashi,
Asaminami-ku
Hiroshima 731-3194 JAPAN
b32034@edu.ipc.hiroshima-
cu.ac.jp

Fisherman's Café

Kaeko Murata
International Academy of Media
Arts and Sciences
RIST 413, 1-1-7 Fujie-cho
Ogaki City, Gifu 503-0893 JAPAN
kai@iamas.ac.jp

**Injection Point
Direct Feed**

Peter Patchen
Center for the Visual Arts
Toledo, Ohio 43620 USA
ppatche@uoft02.utoledo.edu

**Dark Monarch Lingerin
Shroud**

Andrew Polk
5214 East 19th Street
Tucson, Arizona 85711 USA
apolk@u.arizona.edu

Intersections #1

Thomas Porett
673 Aubrey Avenue
Ardmore, Pennsylvania 19003
USA
tporett@op.net

The Space Field Series: Comet Nebula

Victor Raphael

Victor Raphael Productions
328 North Irving Boulevard
Los Angeles, California 90004-
1508 USA
v.rafael@worldnet.att.net

RE-constructing EVE

Xavier Roca

1226 East Mason Street
Santa Barbara, California 93103
USA
jroca@metacreations.com

Window Series/Temple of Heaven Harmony Wall

Anne-Marie Rosser

Leap
562 West Arlington Place #4
Chicago, Illinois 60614 USA
amrosser@leapnet.com

Trnava Synagogue

Cynthia Beth Rubin

Independent Artist
85 Willow Street
New Haven, Connecticut 06511
USA
cbrubin@risd.edu

The OrDoll

Makoto Satoh

1-10-15-305, Haramachida
Machida-shi, Tokyo 194-0013
JAPAN
m-satoh@pop16.odn.ne.jp

Tracking the Net

Maharaj Singh

F.A.B.R.I.CATORS
Via Fratelli Bronzetti 6
Milano 20129 ITALY
fabricat@galactica.it

Civilization of Fruit: Evolved Pear

Civilization of Fruit: Evolved Banana

Civilization of Fruit: Martyred Apple Civilization of Fruit: Sacrificial Pear

Patricia Swain

405 Greenwich Street
New York, New York 10013 USA
Sw5@aol.com

Unconscious Flow

Naoko Tosa

ATR MIC Labs
Seika-cho Soraku-gun
Kyoto 619-0288 JAPAN
tosa@mic.atr.co.jp

SPT901

Hiroko Uchiyama

Women's College of Fine Arts
2-24-7 Shichirigahama-Higashi
Kamakura 248-0025 JAPAN
hiroko@cyberagenz.com

The Assumption of Pleasure

Anna Ullrich

PMB 239
4509 Interlake Avenue North
Seattle, Washington 98103 USA
dumpling@annau.com

Discretion Advised

Anna Ursyn

University of Northern Colorado
Department of Visual Arts
Guggenheim Hall 101
Greeley, Colorado 80639 USA
azursyn@bentley.unco.edu

Liquid Meditation

Margaret Watson

P.O. Box 9627
Mississippi State, Mississippi
39762-9627 USA
watson@erc.msstate.edu

ARTsite Artists

To view the Web sites below, see:
www.siggraph.org/s99/art/

Computational Expressionism

Joanna Maria Berzowska

MIT Media Lab
20 Ames Street, E15-443
Cambridge, Massachusetts 02139
USA
joey@media.mit.edu

S U T U R E

Adam Chapman

ADM's Design Machine
1808 Grace Street
Winston-Salem, North Carolina
27103 USA
adm@queeg.com

My MeMart

Madge Gleeson

Western Washington University
Bellingham, Washington 98225
USA
mgleeson@cc.wvu.edu

The Existence of All Things, Past, Present and Future

Peter Liebenow

Little City Foundation's Multi-
Disciplinary Art Center
1760 West Algonquin Road
Palatine, Illinois 60067 USA
artist@artistical.org

PLAY-Lets

Conor McGarrigle

1 Annamount
Mulgrave Street
Dun Laoghaire Company
Dublin IRELAND
cmg@clubi.ie

Travels Towards

Robin Petterd

19 Cato Avenue
Hobart 7000 AUSTRALIA
robin@peg.apc.org

The Charmed Horizon

Kim Stringfellow

651 North Hoyne Avenue
Chicago, Illinois 60612 USA
mail@kimstringfellow.com

Tree Fix

Michele Turre

University of Massachusetts
Amherst
755 Shelburne Falls Road
P.O. Box 338
Conway, Massachusetts 01341
USA
mturre@art.umass.edu

Nagasaki

Marilyn Waligore

6477 Fisher Road
Richardson, Texas 75214 USA
sorcery@flash.net

Prima Materia

Timothy Weaver

Spatial Technology
2425 55th Street
Boulder, Colorado 80301 USA
tim_weaver@spatial.com

Sampling Broadway

Annette Weintraub

City College of New York
c/o 2 Bond Street
New York, New York 10012 USA
anwcc@cunyvm.cuny.edu

Ghost City

Jody Zellen

843 Bay St. #11
Santa Monica, California 90405
USA
jodyzel@aol.com

The City

Peter Liebenow

Little City Foundation's Multi-
Disciplinary Art Center
1760 West Algonquin Road
Palatine, Illinois 60067 USA
artist@artistical.org

Critical Essay Authors

INTERACTIVITY AND RITUAL: Body Dialogues with Artificial Systems

Diana Domingues
University of Caxias do Sul
Rua Marechal Floriano, 531
Caxias do Sul, RS 95 020 370
BRAZIL
diana@visao.com.br

Virtual Imaginations Require Real Bodies

Dena Elisabeth Eber
Bowling Green State University
478 South Church Street
Bowling Green, Ohio 43402 USA
deber@bgnet.bgsu.edu

Hypermedia, Eternal Life, and the Impermanence Agent

Noah Wardrip-Fruin
New York University
Media Research Lab
719 Broadway, 12th Floor
New York, New York 10003 USA
noah@mrl.nyu.edu

Art Gallery Animation Artists

Artificial Life Trip

Steven Churchill
Odyssey Productions
4413 Ocean Valley Lane
San Diego, California 92130 USA
steven@odyssey3d.com

The Art of Survival

Cassidy Curtis
Department of Computer Science
University of Washington
Box 352350
Seattle, Washington 98195 USA
cassidy@cs.washington.edu

It's All About The Nose

Christos Demosthenous
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu

The Audition

Derek Flood
Das Werk
Goethestr. 54
Munich 80336 GERMANY
derek@das-werk.de

Elytre

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons-En-Baroeul F-59370
FRANCE
exquise@nordnet.fr

Gaia

Santi Fort
Universitat Pompeu Fabra
La Rambla, 31, Entresol.
Bracelona 8002 SPAIN
santi@iua.upf.es

Letters

Thomas Haegele
Filmakademie Baden-
Wuerttemberg
Mathildienst.20
Ludwigsburg D-71638 GERMANY
thomas.haegele@filmakademie.de

Zhen Po: The Visual Effect of a Seismic WaveField

Mei-Ling Hsu
National Center for High-
performance Computing
7 R&D Rd.VI, Science Park
HsinChu 300 TAIWAN
c00mrn00@nchc.gov.tw

Wriggon

Yoichiro Kawaguchi
RACE, The University of Tokyo
4-6-1, Komaba,
Meguro-ku
Tokyo 153-8904 JAPAN
yoichiro@race.u-tokyo.ac.jp

Junk Food

Mark Knox
925 Mt. Pleasant Avenue
Columbus, Ohio 43201 USA
mknox@iwaynet.net

Don't Pull the Plug!

Wobbe Koning
ACCAD, The Ohio State University
323 1/2 West Hubbard Avenue
Columbus, Ohio 43215 USA
wkoning@cgrg.ohio-state.edu

Venus Pie Trap

Daniel Lazarow
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu

The Giftbringer

Michael Makara
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu

The Jungle Boy

Ming-Huei Shih
Pratt Institute
139-35, 35th Avenue, 1-D
Flushing, New York 11354 USA
jackyshi@aol.com

Object Lesson

Dylan Sisson
956 10th Avenue East #106
Seattle, Washington 98102 USA
dylan@blarg.net

Computer Animation Festival

Animations, performances, and interactions that show computer graphics as product, media, and process. A broad, international selection of this year's most outstanding work is featured in the Animation Theaters as well as in matinée and evening shows of the Electronic Theater. SIGGRAPH 99 also presents the world premiere of the feature-length documentary, *The Story of Computer Graphics*.



Chair

Brian Blau
SGI

Location

Office: Room 410

Electronic Theater
Shrine Auditorium
655 West Jefferson Boulevard
Los Angeles

Animation Theaters
Los Angeles Convention Center
Rooms 409, 411, 501

The Story of Computer Graphics

World Premier - Shrine Auditorium

Sunday 8 August

8:30 - 10 pm

Los Angeles Convention Center Room 501

Monday-Thursday, 9-12 August

9 am, 10:45 am, 12:30 pm, 2:15 pm, 4 pm

Friday 13 August

9 am, 10:45 am, 12:30 pm

Electronic Theater

Monday 9 August 7 - 9 pm

Tuesday 10 August 7 - 9 pm

Wednesday 11 August 7 - 9 pm

Thursday 12 August 7 - 9 pm

Electronic Theater Matinée

Tuesday 10 August 2 - 4 pm

Wednesday 11 August 2 - 4 pm

Animation Theaters

Sunday 8 August 5 - 7 pm

Monday 9 August 9 am - 6 pm

Tuesday 10 August 9 am - 6 pm

Wednesday 11 August 9 am - 6 pm

Thursday 12 August 9 am - 6 pm

Friday 13 August 9 am - 3 pm

Committee

Tanya Anguita

Administrative Assistant

Diane Piepol

Electronic Theater Producer

Mary Beth Ray

Animation Theater Producer

Alex Lindsay

Animation Theater Production Coordinator

Industrial Light & Magic

Ladd McPartland

Film Editor

Industrial Light & Magic

Frank Foster

Director, "The Story of Computer Graphics"

Sony Picture Imageworks

Jury

Linda Branagan

Click 3X Construct

Paul Debevec

University of California, Berkeley

Clark Dodsworth

Osage Associates

Bill Kroyer

Rhythm & Hues Studios

Lynn Pocock

New York Institute of Technology

Sande Scoredos

Sony Pictures Imageworks

Peter Shirley

University of Utah

Animation Theater Schedules

With "Stories-The Soul of the Performance" as the focus for this year's Computer Animation Festival, the names of the collections in the Animation Theater program have more of a literary flavor.

Commercial FX & Games: the magic in feature films, advertisements, cartoons, and games.

Folklore & Love Tales: tales of the heart and lore from homelands around the world.

Humor: light and amusing (note this is split into three sections.)

In Black and White: diverse themes in shades of gray.

Muse: a state of dreamy abstraction...some might say, "psychedelic, baby."

Visual Poetry: literally or figuratively, the abstract language in these pieces evokes an emotional response through meaning, sound, and rhythm.

Visual Prose: narrative or not, the stories are told and statements are made with more everyday plots and characters.

Visualization & Technique: in architecture and several of the sciences.

PLUS! Three longer stories set apart as Interludes: *Plug*, *Sandland*, and *Rayman-No Parking*.

The Electronic Schoolhouse Annotated Film Show:

Take a look behind the pixels at the splines, NURBS, ideas, and storyboards that form the foundation of many of the incredible animations in the SIGGRAPH 99 Computer Animation Festival. This combination of presentation, film show, and handouts will give all kinds of educators and students a rare perspective on the process of creating animation.

Sunday 8 August

Room 409
 5 pm In Black and White
 5:35 Humor II
 5:55 Visual Poetry
 6:35 Humor III

Room 411
 5 pm Commercial FX & Games
 5:45 Story Interlude: *Rayman - No Parking*
 6 Visualization and Technique
 6:40 Muse

Room 501
 5 pm Visual Prose
 6 Story Interlude: *Sandland*
 6:15 Folklore & Love Tales
 6:55 Story Interlude: *Plug*

Monday 9 August

Room 409
 9 am In Black and White
 9:35 Humor II
 9:55 Visual Poetry
 10:35 Humor III
 10:55 Visual Prose
 11:55 Story Interlude: *Sandland*
 12:10 Commercial FX & Games
 12:55 Story Interlude: *Rayman - No Parking*
 1:10 Visualization and Technique
 1:50 Folklore & Love Tales
 2:30 Story Interlude: *Plug*
 2:45 Humor I
 3:05 Muse
 3:45 Electronic Schoolhouse Annotated Film Show
 5 In Black and White
 5:35 Humor II

Room 411
 9 am Commercial FX & Games
 9:45 Story Interlude: *Rayman - No Parking*
 10 Visualization and Technique
 10:40 Folklore & Love Tales
 11:20 Story Interlude: *Plug*
 11:35 Humor I
 11:55 Muse
 12:20 In Black and White
 12:55 Humor II
 1:15 Visual Poetry
 1:55 Humor III
 2:15 Visual Prose
 3:15 Story Interlude: *Sandland*
 3:30 Commercial FX & Games
 4:15 Story Interlude: *Rayman - No Parking*
 4:30 Visualization and Technique
 5:10 Folklore & Love Tales
 5:50 Story Interlude: *Plug*

Room 501
 The Story of Computer Graphics
 9 am, 10:45 am, 12:30 pm,
 2:15 pm, 4 pm

Tuesday 10 August**Room 409**

9 am Humor II
 9:20 Visual Poetry
 10 Humor III
 10:20 Visual Prose
 11:20 Story Interlude: *Sandland*
 11:35 Commercial FX & Games
 12:20 Story Interlude: *Rayman*
 - No Parking
 12:35 Visualization and Technique
 1:15 Folklore & Love Tales
 1:55 Story Interlude: *Plug*
 2:10 Humor I
 2:30 Muse
 2:55 In Black and White
 3:45 Electronic Schoolhouse
 Annotated Film Show
 5 Humor II
 5:20 Visual Poetry

Room 411

9 am Visualization and Technique
 9:40 Folklore & Love Tales
 10:20 Story Interlude: *Plug*
 10:35 Humor I
 10:55 Muse
 11:20 In Black and White
 11:55 Humor II
 12:15 Visual Poetry
 12:55 Humor III
 1:15 Visual Prose
 2:15 Story Interlude: *Sandland*
 2:30 Commercial FX & Games
 3:15 Story Interlude: *Rayman*
 - No Parking
 3:30 Visualization and Technique
 4:10 Folklore & Love Tales
 4:50 Story Interlude: *Plug*
 5:05 Humor I
 5:25 Muse

Room 501

The Story of Computer Graphics
 9 am, 10:45 am, 12:30 pm,
 2:15 pm, 4 pm

Wednesday 11 August**Room 409**

9 am Visual Poetry
 9:40 Humor III
 10 Visual Prose
 11 Story Interlude: *Sandland*
 11:15 Commercial FX & Games
 noon Story Interlude: *Rayman*
 - No Parking
 12:15 Visualization and Technique
 12:55 Folklore & Love Tales
 1:35 Story Interlude: *Plug*
 1:50 Humor I
 2:10 Muse
 2:35 In Black and White
 3:10 Humor II
 3:45 Electronic Schoolhouse
 Annotated Film Show
 5 Visual Poetry
 5:40 Humor III

Room 411

9 am Folklore & Love Tales
 9:40 Story Interlude: *Plug*
 9:55 Humor I
 10:15 Muse
 10:40 In Black and White
 11:15 Humor II
 11:35 Visual Poetry
 12:15 Humor III
 12:35 Visual Prose
 1:35 Story Interlude: *Sandland*
 1:50 Commercial FX & Games
 2:35 Story Interlude: *Rayman*
 - No Parking
 2:50 Visualization and Technique
 3:30 Folklore & Love Tales
 4:10 Story Interlude: *Plug*
 4:25 Humor I
 4:45 Commercial FX & Games
 5:30 Story Interlude: *Rayman*
 - No Parking

Room 501

The Story of Computer Graphics
 9 am, 10:45 am, 12:30 pm,
 2:15 pm, 4 pm

Thursday 12 August**Room 409**

9 am Humor III
 9:20 Visual Prose
 10:20 Story Interlude: *Sandland*
 10:35 Commercial FX & Games
 11:20 Story Interlude: *Rayman*
 - No Parking
 11:35 Visualization and Technique
 12:15 Folklore & Love Tales
 12:55 Story Interlude: *Plug*
 1:10 Humor I
 1:30 Muse
 1:55 In Black and White
 2:30 Humor II
 2:50 Visual Poetry
 3:45 Electronic Schoolhouse
 Annotated Film Show
 4:45 Visual Prose
 5:45 Story Interlude: *Sandland*

Room 411

9 am Humor I
 9:20 Muse
 9:45 In Black and White
 10:20 Humor II
 10:40 Visual Poetry
 11:20 Humor III
 11:40 Visual Prose
 12:40 Story Interlude: *Sandland*
 12:55 Commercial FX & Games
 1:40 Story Interlude: *Rayman*
 - No Parking
 1:55 Visualization and Technique
 2:35 Folklore & Love Tales
 3:20 Story Interlude: *Plug*
 3:35 Humor I
 3:55 Muse
 4:20 In Black and White
 4:55 Humor III
 5:15 Visual Poetry

Room 501

The Story of Computer Graphics
 9 am, 10:45 am, 12:30 pm,
 2:15 pm, 4 pm

Friday 13 August**Room 409**

9 am Visual Prose
 10 Story Interlude: *Sandland*
 10:15 Commercial FX & Games
 11 Story Interlude: *Rayman*
 - No Parking
 11:15 Visualization and Technique
 11:55 Folklore & Love Tales
 12:35 Story Interlude: *Plug*
 12:50 Humor I
 1:10 Muse
 1:35 In Black and White
 2:10 Humor II
 2:30 Humor III

Room 411

9 am Muse
 9:25 In Black and White
 10 Humor II
 10:20 Visual Poetry
 11 Humor III
 11:20 Visual Prose
 12:20 Story Interlude: *Sandland*
 12:35 Commercial FX & Games
 1:20 Story Interlude: *Rayman*
 - No Parking
 1:35 Visualization and Technique
 2:15 Humor I

Room 501

The Story of Computer Graphics
 9 am, 10:45 am, 12:30 pm,
 2:15 pm, 4 pm

Electronic Theater

Bjork: All Is Full Of Love

James Mann
Glassworks Ltd.
33-34 Gt Pulteney
London W1R 3DE
UNITED KINGDOM
james@glassworks.co.uk

Body Story

Briohny Pogue
4:2:2 Bristol
St Johns Court, Whiteladies Road
Bristol BS8 2QY
UNITED KINGDOM
mail@422.com
www.422.com

Breaking Objects

James O'Brien
Georgia Institute of Technology
GVU Center, College of Computing
801 Atlantic Drive
Atlanta, Georgia 30332 USA
job@acm.org

Bunny

Chris Wedge
Blue Sky Studios
One South Road
Harrison, New York 10528 USA
chris@blueskystudios.com
www.bunny.blueskystudios.com

Deep Canvas in Disney's Tarzan

Eric Daniels
Walt Disney Feature Animation
500 South Buena Vista Street
Burbank, California 91521 USA
eric.daniels@disney.com

The Duck Father

Tomoyuki Harashima
2739-122 Negoya, Tsukui-machi,
Tsukui-gun
Kanagawa 220-0203 JAPAN
tomoyuu@ca2.so-net.ne.jp

Fiat Lux

Paul Debevec
University of California, Berkeley
387 Soda Hall #1776
Berkeley, California 94720 USA
debevec@cs.berkeley.edu
www.cs.berkeley.edu/~debevec

First Union: Launch

Yves Metraux
Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
yves@lucasdigital.com

Fishing

Julie Haddon
Pacific Data Images
3101 Park Boulevard
Palo Alto, California 94306 USA
info@pdi.com
www.pdi.com

The Fort at Mashantucket

(also in Animation Theater)

Raymond Doherty
Nicholson NY
295 Lafayette Street
New York, New York 10024 USA
lochinvr@aol.com
www.nny.com/3d

Galaxy Cluster Dynamics

Anjana Kar
Pittsburgh Supercomputing Center
4400 Fifth Avenue
Mellon Institute, Room 401
Pittsburgh, Pennsylvania 15213 USA
kar@psc.edu

Hollow

Jason Shulman
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

Impel

Brandon Morse
ACCAD
The Ohio State University
3031 Neal Avenue, Apartment C
Columbus, Ohio 43202 USA
emorse@cgrg.ohio-state.edu
www.cgrg.ohio-state.edu/~emorse/

The Jester

Mark Sagar
Pacific Title / Mirage Studio
1149 North Gower
Hollywood, California 90038 USA
mark@pactitle.com

The Legend of Dragoon

Shuji Hiramatsu
Sony Computer Entertainment Inc.
Sumitomo Nakanosakaue Building,
38-1, Chuo 1-chome
Nakano-ku, Tokyo 164-0011
JAPAN
shuji@ddd.scei.sony.co.jp
www.scei.co.jp/

LIDAR: Reality Capture

Eric Wong
Cyra Technologies
8000 Capwell Drive
Oakland, California 94621 USA
eric.wong@cyra.com
www.cyra.com

Masks

Thomas Haegele
Filmakademie Baden-Wuerttemberg
Mathildenstrasse 20
Ludwigsburg 71638 GERMANY
thomas.haegele@filmakademie.de

Mighty Joe Young

Mary Reardon
Dream Quest Images
2635 Park Center Drive
Simi Valley, California 93065 USA
mreardon@dqimages.com

Moebius: The City of Fire

Victor Wong
Menfond Electronic Art
30/F Sunshine Plaza
353 Lockhart Road
Wanchai, HONG KONG
menfond@hk.super.net

MTV-Forests

Thomas Haegele
Filmakademie Baden-Wuerttemberg
Mathildenstrasse 20
Ludwigsburg 71638 GERMANY
thomas.haegele@filmakademie.de

The Mummy

Yves Metraux
Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
yves@lucasdigital.com

Oddworld: Abe's Exoddus

(also in Animation Theater)
Geri Wilhelm
Oddworld Inhabitants
869 Monterey Street
San Luis Obispo, California 93401
USA
geri@oddworld.com

Polar Bear Swim

Suzanne Datz
Rhythm & Hues Studios
5404 Jandy Place
Los Angeles, California 90066 USA
suze@rhythm.com
www.rhythm.com

The Prince of Egypt: The Red Sea

Stacey Pauly
DreamWorks Animation
1000 Flower Street
Glendale, California 91201 USA
spauly@dreamworks.com

Ronin Romance Classics

Bruce Pukema
Ronin Animation
420 North 5th Street, #690
Minneapolis, Minnesota 55401 USA
ronininc@intxxnet.com

The Round Earth Project

Andrew Johnson
Electronic Visualization Laboratory
EECS Department (M/C 154)
University of Illinois at Chicago
Chicago, Illinois 60607 USA
ajohnson@uic.edu
www.evl.uic.edu/roundearth

Sandland

(also in Animation Theater)
Heiko Lueg
Schulstrasse 30
Dasing D-86453 GERMANY
Dr.Lueg@t-online.de

Saving Private Ryan

Yves Metraux
Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
yves@lucasdigital.com

SCInema Event**Jeff Linnell**

Liquid Design Group
833 Broadway, Floor 2
New York, New York 10003 USA
jeff@liquidesign.com
www.liquidesign.com

**SIGGRAPH 99 Paper
Retrospective: Real Time****Camille Cellucci**

No Road Productions
PMB 1-271
8205 Santa Monica Boulevard
West Hollywood, California
90046-5977 USA
noroad@earthlink.net
www.noroad.com

Silent Hill**Gozo Kitao**

Konami Computer Entertainment
Tokyo
3-25 Jinbo-cho, Kanda Chiyoda-ku
Tokyo 101-0051 JAPAN
kitao@konami.co.jp

Softy Puffs: Paper Chase**Shannon Gilley**

Windlight Studios
c/o 6324 Humboldt Avenue South
Richfield, Minnesota 55423 USA
sgilley@uswest.net

Spatial Frames

(also in Animation Theater)

Robert Jensen

Pixar Animation Studios
1001 West Cutting Boulevard
Richmond, California 94709 USA
rj@pixar.com

**Star Wars Episode I:
The Phantom Menace****Yves Metraux**

Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
yves@lucasdigital.com

**Star Wars Episode I: The
Phantom Menace - Research
and Development Hightlights****Christian Rouet**

Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
cr@lucasdigital.com

Stuart Little**Donald Levy**

Sony Pictures Imageworks
10202 West Washington Boulevard
Culver City, California 90232 USA
don@imageworks.com

Tightrope

(also in Animation Theater)

Bob Hoffman

Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
bhoffman@d2.com
www.d2.com

To Build A Better Mousetrap**Christopher Leone**

Digital Filmworks
3330 Cahuenga Boulevard West,
Suite 300
Los Angeles, California 90068 USA
leone@dfw-la.com
www.dfw-la.com

Tokitama Hustle**Momoyo Iwase**

TRILOGY Corporation
Nagashimaya PARABO
Jingumae Building
6F 6-23-2 Jingumae Shibuya-ku
Tokyo 150-0001 JAPAN
moyo@trilogy.co.jp
www.trilogy.co.jp

**Twinkle, Twinkle, Shooting
Star****Yasuhiro Yamaguchi**

Tokyo Broadcasting System, Inc.
5-3-6 Akasaka, Minato-ku
Tokyo 107-8006 JAPAN
yamatsb@msn.com

**What Dreams May Come:
The Painted World Sequence****Nicholas Brooks**

Honey
48 Market Street
Venice, California 90291 USA
mesmer@pop.net

Wild Card**Van Phan**

USC Film School
4644 W137th Street A
Hawthorne, California 90250 USA
phan@felix.usc.edu

Wild Wild West**Yves Metraux**

Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
yves@lucasdigital.com

Animation Theaters**4****Stephen Gressak**

305 Washington Avenue
Apartment B-2
Brooklyn, New York 11205 USA
sgressak@pratt.edu

**A Letter from the Western
Front****Daniel Kanemoto**

Ex Mortis Films
306 West 51st Street, #6F
New York, New York 10019 USA
dkanemoto@aol.com

**A Little Curious (Pad &
Pencil Song)****Rae Morris**

Curious Pictures
440 Lafayette Street, 6th Floor
New York City, New York 10003
USA
rmorris@curiouspictures.com
www.curiouspictures.com

The Artifice of Dimension**Steven Churchill**

Odyssey Productions
4413 Ocean Valley Lane
San Diego, California 92130 USA
steven@odyssey3d.com
www.odyssey3d.com

Artistic Evolution**Doug Pfeifer**

8333 Knollwood Drive
Mounds View, Minnesota 55112
USA
doug@creativeimages.com

The Battle Scene**Seiichi Ishii**

Dream Factory Co., Ltd.
Arco Tower
1-8-1 Shimomeguro Floor 17,
Meguro-ku
Tokyo 153-0064 JAPAN
drf@drf.square.co.jp
www.drf.co.jp

bike**Dietmar Offenhuber**

Ars Electronica Futurelab
Leonfeldnerstr. 27/8
Linz 4040 AUSTRIA
didi@fl.aec.at

Bill Gates' Basement**Brumbaer Matzerath**

725 Oxford Avenue
Marina del Rey, California 90292
USA
SatPMUni@aol.com

Boing**David Kury**

UCLA Animation Workshop
1444 South Saltair Avenue, #107
Los Angeles, California 90025 USA
dkury@ucla.edu

Brillia**Yoichiro Kawaguchi**

RACE, The University of Tokyo
4-6-1, Komaba, Meguro-ku
Tokyo 153-8904 JAPAN
yoichiro@race.u-tokyo.ac.jp

Buddies**Robin Roepstorff**

c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

Buzz Off**Naoki Fujiwara**

1228-C 46th Avenue
San Francisco, California 94122
USA
nfujiwara@hotmail.com

**The Cambrian Burgess Shale
Creatures: Early Evolution of
Animals****Tetsuhiko Awaji**

Fujitsu Limited
1-17-25 Shin-kamata, Ohta-ku
Tokyo 144-8588 JAPAN
awaji@soc.se.fujitsu.co.jp
www.fujitsu.co.jp

CarouseL**Ami & FunnyBoys**

904 16th Street #A
Santa Monica, California 90403
USA
nobsato@ja2.so-net.ne.jp
www.02.so-net.ne.jp/~nobsato

Case #M1251

Geof Pelaia
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

Censor-Sheep

Dani Rosen
2063 Olentary Street, #A
Sarasota, Florida 34231 USA
drosen@ringling.edu
www.ringling.edu/~drosen

Chancy

Mitch Butler
Mitch Butler Company, Inc.
5605 Kercliff Court
Boise, Idaho 83704 USA
mitch@mitchbutler.com
www.mitchbutler.com

Cino

Thomas Inesi
580 Rialto Avenue
Venice, California 90291 USA
tom@nichimen.com

Clock

Aaron Lim
828 Franklin #501
San Francisco California 94102
USA
ahron_68@yahoo.com

The Condiment League

David Elliott
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

Converging Flows

Craig Bowman
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

The Delivery

Marc Brind'Amour
College Inter-Dec
2120 Sainte-Catherine Ouest
Montréal, Québec H3H 1M7
CANADA
mbrindamour@admin.clasalle.qc.ca

Der Eindecker Walzer

Hidetoshi Oneda
Dentsu Inc.
Digital Business Design Division
Akashicho 8-1
Chuo-ku, Tokyo 104-8561 JAPAN
d12118@dentsu.co.jp

Desert Dreams

Paul Rademacher
University of North Carolina at
Chapel Hill
Campus Box #3175, Sitterson Hall
Chapel Hill, North Carolina 27599
USA
rademach@cs.unc.edu

Division

George M. Nadeau
1726 Paddlewheel Drive
Marietta, Georgia 30062 USA
monkeygeo@aol.com

Dodge Perfection

Mark Voelpel
R/Greenberg Associates
350 West 39th Street
New York, New York 10018 USA
mark@rga.com

Dr. Strangeheight

Keith Kramer
5328 South Cobble Creek Road
#29C
Salt Lake City, Utah 84117 USA
kkramer200@aol.com

Dragon Gate

Geoff Wyvill
Department of Computer Science
University of Otago
523 Castle Street, Box 56
Dunedin, NEW ZEALAND
geoff@otago.ac.nz
atlas.otago.ac.nz:800/graphics/
Geoff.html

Drive-In House

Takehiko Nagakura
Massachusetts Institute of
Technology ARC Group
77 Massachusetts Avenue
Room 10-472M
Cambridge, Massachusetts 02139
USA
takehiko@mit.edu

El Arca/L'Arche

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

**Elements in Transformations
#2**

Ying Tan
School of Architecture
and Allied Art
University of Oregon
5232 University
Eugene, Oregon 97403 USA
tanying@darkwing.uoregon.edu
www.uoregon.edu/~tanying

En Derive

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

Evian: Babies

Nicolas Trout
Mac Guff Ligne
6 Rue de la cavalerie
Paris 75015 FRANCE
niko@macguff.fr
www.macguff.fr

Evolution in the First Person

Elouise Oyzon
Oyzon Animation
45 Kingsboro Road
Rochester, New York 14619 USA
oyzoni@slip.net

Exotica

Steven Churchill
Odyssey Productions
4413 Ocean Valley Lane
San Diego, California 92130 USA
steven@odyssey3d.com
www.odyssey3d.com

Explosion Potion

Yin-Fang Liao
School of Visual Arts
30 New Port Parkway
Apartment #1914
Jersey City, New Jersey 07310 USA
yinfang@sva.edu

**Facial Surgery - Today and
Tomorrow**

Yogi Parish
ETH Zurich
Raemistrasse 101
Hauptgebäude F 44
Zurich 8092 SWITZERLAND
parish@ikb.mavt.ethz.ch

Fight Club

Bob Hoffman
Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
bhoffman@d2.com
www.d2.com

Final Project Assignment

Eric Kunzendorf
Co-Chair Electronic Art/Computers
The Atlanta College of Art
1280 Peachtree Street NE
Atlanta, Georgia 30309 USA
kunzendorf@mindspring.com

The Forgotten Planet

Marc Urlus
72, Charles Quint Str
Brussels 1000 BELGIUM
marc@avcom.be

The Fort at Mashantucket

(also in Electronic Theater)

Raymond Doherty
Nicholson NY
295 Lafayette Street
New York, New York 10024 USA
lochinvr@aol.com
www.nny.com/3d

Frakenskippy

Lars Magnus Holmgren
Frakenskippy
20 Queens Avenue
Avalon, New South Wales
Sydney 2107 AUSTRALIA
madswede@fl.net.au

freedom

Minoru Sasaki
Technonet Co.,Ltd.
6-8-8, Akasaka,
Matsubara Building 2F
Minato-ku, Tokyo 107-0052
JAPAN
sasaki-m@technonet.co.jp
www.technonet.co.jp/sasaki-m/

Frisk Spider

Alastair Hearsom
Glassworks Ltd
33-34 Gt Pulteney Street
London W1R 3DE
UNITED KINGDOM
alastair@glassworks.co.uk

Genroku-Ryoran

Masayoshi Obata
NHK Enterprises 21
4-14 Kamiyama-cho, Shibuya
Tokyo 150-0047 JAPAN
obata@bc4.so-net.ne.jp

**Georges
Tunon Fernando**

Toon Sprl
45 rue du Chapeau
Brussels 1070 BELGIUM
drtoon@ping.be

Ghostcatching

Paul Kaiser
Riverbed
306 West 38th Street, #402
New York, New York 10018 USA
paul@riverbed.com
www.riverbed.com

**Global Tele-Immersion at the
Electronic Visualization
Laboratory**

Jason Leigh
University of Illinois at Chicago
Electronic Visualization Laboratory
MC154, 1120SEO
Department EECS
851 South Morgan Street
Chicago, Illinois 60607 USA
spiff@uic.edu
www.evl.uic.edu/spiff

Gone Fishin

Keith Turner
Mesmer Animation Labs
659 Clayton Street
San Francisco, California 94117
USA
kturner@earthlink.net

Half Pint Heroes

Everett Downing
3000 West Palmer #2
Chicago, Illinois 60647 USA
edowning@bigidea.com

Head Quarters

Jason Donati
232 East Squire Drive,
Apartment 3
Rochester, New York 14623 USA
jad2782@rit.edu
www.rit.edu/~jad2782

Hollywood and Highland

Peipei Yuan
IOMEDIA
126 5th Avenue, Suite 804
New York, New York 10011 USA
peipei@io-media.com

**How Reovirus Kills Cancer
Cells**

Douglas Bowman
Netera Alliance
525 Biosciences
2500 University Drive NW
Calgary, Alberta T2N 1N4
CANADA
bowman@ucalgary.ca
www.wnet.ca/reovirus/

Humpty Dumpty

Setsuro Sugiyama
Digital Hollywood
DH2001, Building 2-3,
Kanda-Surugada
Chiyoda-ku, Tokyo, JAPAN
sugiya@excite.co.jp

Hypnos

Nick Eberle
Savannah College of Art and
Design
8 Golden Poppy
Coto de Caza, California 92679
USA
nickeberle@earthlink.net

Inspector Gadget

Mary Reardon
Dream Quest Images
2635 Park Center Drive
Simi Valley, California 93065 USA
mreardon@dqimages.com

Iron Bowl

Daiji Imai
WestTower1804, 4-1
Yukarigaoka, Sakura-shi
Chiba 285-0858 JAPAN
da-er.04@b4.mnx.ne.jp

Jabberwocky

Caleb Strauss
Florida Center For Electronic
Communication
220 Southeast Second Avenue
Fort Lauderdale, Florida 33301
USA
calebstrauss@hotmail.com

Jitterbug

Bob Hoffman
Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
bhoffman@d2.com
www.d2.com

K Museum

Shinsuke Baba
Massachusetts Institute of
Technology
ARC Group
77 Massachusetts Avenue
10-472M
Cambridge, Massachusetts 02139
USA
sbaba@mit.edu
www.mit.edu/~sbaba/

Karen and Jennifer

Stephen Shearer
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

Kitan

Kengou Miyakuni
Digital Hollywood
Digital Eight Building 6-5-17
Nishitenma Kita-ku
Osaka 540-0047 JAPAN
vectorjuce@aol.com

Koktoo Gaksi

Semi Ryu
The Korean National
University of Arts
Daelim Apt 101-1204
Taebang-dong Dongjak-gu
Seoul 156-020 KOREA
armonico@chollian.net

KulaQuest

Shuji Hiramatsu
Sony Computer Entertainment Inc.
Sumitomo Nakanosakaue Building,
38-1, Chuo 1-chome
Nakano-ku, Tokyo 164-0011
JAPAN
shuji@ddd.scei.sony.co.jp
www.scei.co.jp/

Lara needs Seat

Sophie Bordone
Ex Machina
22 rue Hegesippe Moreau
Paris 75018 FRANCE
sophie@exmach.fr

Le Bestiaire

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

Le Ciel Est a Tout Le Monde

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

Les Pecheurs de Perles

Hiroyuki Okui
1008,6-25-8 Jinguumae
Shibuya-ku
Tokyo 150-0001 JAPAN
oqi@vc-net.ne.jp

Longing

Amy Moran
Texas A&M University
Visualization Laboratory
216 Langford Building A
College Station, Texas 77843 USA
amoran@viz.tamu.edu

Lords of Sipán

Erwin Gómez Viñales
Cubonegro
Ernesto Pinto Lagarrigue 156 b
Recoleta Santiago, CHILE
egomezv@ctcreuna.cl

Luminaries

David Haxton
2036 Sharon Road
Winter Park, Florida 32789 USA
haxtond@aol.com

Luna

Adam Byrne
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

The Magician and the Rabbit

Siu Chi Hsu
Creature House Ltd.
PO Box 1559
Shatin Central Post Office
HONG KONG
schsu@creaturehouse.com
www.creaturehouse.com

Mighty Joe Young - Research and Development Highlights

Christian Rouet
Industrial Light & Magic
PO Box 2459
San Rafael, California 94912 USA
cr@lucasdigital.com

Murmures

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

Music Lessons

Wilson Smith
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

My Favorite Martian

Lisa Cooke
Tippett Studio
2741 Tenth Street
Berkeley, California 94710 USA
lisa@tippett.com

My Little Alien

Kelvin Lee
Sony Pictures Imageworks
9050 West Washington Boulevard
Suite 210
Culver City, California 90232 USA
kelvin@spimageworks.com

Nada Mas

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

Nilaya

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

Oddworld: Abe's Exoddus

(also in Electronic Theater)

Geri Wilhelm
Oddworld Inhabitants
869 Monterey Street
San Luis Obispo, California 93401
USA
geri@oddworld.com

One Tooth Too Far

Michael Sanborn
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

Only

Weeksang Chang
The Ohio State University
2876 Donnylane Boulevard
Columbus Ohio 43235 USA
chang.350@osu.edu
www.cg.ohio-state.edu/~wchang/

Orkin: Spy Guy

Mark Voelpel
R/Greenberg Associates
350 West 39 Street
New York, New York 10018 USA
mark@rga.com

P'tit Parc

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

The Palace of Soviets

Takehiko Nagakura
ARC Group
Massachusetts Institute of
Technology
77 Massachusetts Avenue
Room 10-472M
Cambridge, Massachusetts 02139
USA
takehiko@mit.edu

Pandas

Bob Hoffman
Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
bhoffman@d2.com
www.d2.com

Party from Final Fantasy VIII

Satoshi Tsukamoto
Square Co., Ltd.
Arco Tower, 1-8-1 Shimomeguro
Meguro-ku, Tokyo 153-8688
JAPAN
tsuka@square.co.jp
www.square.co.jp

Passages

John S. Banks
562 West Arlington Place #4
Chicago, Illinois 60614 USA
jsbanks@interaccess.com

Piccolo's Encore

Sam Chen
SGI
950 High School Way, #3328
Mountain View, California 94041
USA
sambochen@yahoo.com
reality.sgi.com/sambo

Planet Paranoid

Wolfgang Morell
Fachhochschule Wiesbaden
Schulberg 16
Wiesbaden 65183 GERMANY
w.morell@t-online.de

Plug

Meher Gourjian
Jamie Waese
Plugworks Films
14259 Dickens Street #8
Sherman Oaks, California 91423
USA
mg@soldesignfx.com
jamiewaese@aol.com
www.plugworks.com

Pola X

Sophie Bordone
Ex Machina
22 rue Hegesippe Moreau
Paris 75018 FRANCE
sophie@exmach.fr

PolarLust

Joe Fournier
Fournier Studios
151 North Elmwood
Oak Park, Illinois 60302 USA
joedraw@mcs.net

Raleigh-Benard Convection in a Closed Box

Gregory Foss
Pittsburgh Supercomputing Center
4400 Fifth Avenue
Mellon Institute, Room 401
Pittsburgh, Pennsylvania 15213
USA
foss@psc.edu

Rampage Newscast

Jeff Bunker
Avalanche Software
102 West 500 South, Suite 502
Salt Lake City, Utah 84101 USA
jbunker@avalanchesoftware.com
www.avalanchesoftware.com

Rayman - No Parking

Francois Petavy
Ubi Soft Entertainment
28 rue Armand Carrel
Montreuil 93100 FRANCE
fpetavy@ubisoft.fr
www.ubisoft.com

Resent Car

Hotaka Koike
101 Odabekata 5-1-2
Nakameguro, Meguroku
Tokyo 153-0061 JAPAN
hota@ma4.jsutnet.ne.jp

**Revival of Lost Creatures,
Planet of Ocean**

Yukiko Homma
NHK Art, Inc.
NR Building 4th Floor
5-5, Kamiyama-cho, Shibuya
Tokyo 150-0047 JAPAN
homma@n-art.nhk-grp.co.jp

Ribena Cyberries

Geoff Wyvill
Animation Research Limited
442, Moray Place
PO Box 5580
Dunedin NEW ZEALAND
geoff@otago.ac.nz
www.arl.co.nz

Rolie Polie Olie

Pam Lehn
Nelvana
32 Atlantic Avenue
Toronto, Ontario M6K 1X8
CANADA
paml@nelvana.com

Salad Bowl: A Carrot's Tale

Michael S. Blum
Walt Disney Feature Animation
500 South Buena Vista Street
Burbank, California 91521 USA
mike.blum@disney.com
home.pacbell.net/lmking/bowl/

Sandland

(also in Electronic Theater)

Heiko Lueg
Schulstrasse 30
Dasing D-86453 GERMANY
Dr.Lueg@t-online.de

Sea Dance

Steven Churchill
Odyssey Productions
4413 Ocean Valley Lane
San Diego, California 92130 USA
steven@odyssey3d.com
www.odyssey3d.com

Sheeps

Warren Fuller
415 South Genesee Avenue
Los Angeles, California 90036 USA
WarrenScottF@macconnect.com

ShutterBug

Joseph Brumm
Queensland College of Art
Griffith University
19 Elimatta Drive, Ashgrove
Brisbane, Queensland 4060
AUSTRALIA
D.Thomas@mailbox.gu.edu.au

Skydivers

Bob Hoffman
Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
bhoffman@d2.com
www.d2.com

Slacker

Andreas Procopiou
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

Snack and Drink

Tommy Pallotta
Flat Black Films
4204 Avenue H
Austin, Texas 78751 USA
d9@eden.com

Sorb

Heath Hanlin
Syracuse University
102 Shaffer Art
Syracuse, New York 13244 USA
hahanlin@syr.edu
creativity.syr.edu/~hhanlin

Spatial Frames

(also in Electronic Theater)

Robert Jensen
Pixar Animation Studios
1001 West Cutting Boulevard
Richmond, California 94709 USA
rj@pixar.com

Stray Sheep

Yoshihisa Hirano
LINKS Corporation
2-14-1 Higashi-Gotanda
Shinagawa-Ku
Tokyo 141-0022 JAPAN
hira@links.imagica.co.jp

Supernova

Bob Hoffman
Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
bhoffman@d2.com
www.d2.com

Tatlin's Tower

Takehiko Nagakura
ARC Group
Massachusetts Institute of
Technology
77 Massachusetts Avenue
Room 10-472M
Cambridge, Massachusetts 02139
USA
takehiko@mit.edu

Tightrope

(also in Electronic Theater)

Bob Hoffman
Digital Domain, Inc.
300 Rose Avenue
Venice, California 90291 USA
bhoffman@d2.com
www.d2.com

To Be or Not To Be

Peter Lee
1 Palace Pier Crescent, Suite 312
Toronto, Ontario M8V 3W9
CANADA
peter3d@hotmail.com
www.geocities.com/hollywood/
cinema/4865

Tribu

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

Trophomotion

Amanda Roth
Kleiser-Walczak Construction Co.
6315 Yucca Street
Hollywood, California 90028 USA
amanda@kwcc.com
www.kwcc.com

Turtle Trouble

Josh Nizzi
718 Ashton Lane South
Champaign, Illinois 61820 USA
nizzi@students.uiuc.edu

Un Temps Pour Elle

Bruno Follet
Heure Exquise! Distribution
Le Fort, Avenue De Normandie
B.P. 113
Mons En Baroeul F-59370
FRANCE
exquise@nordnet.fr
www.cr-npdc.fr/neure_exquise/
f-heure-exquise.htm

Under Construction

Wooksang Chang
ACCAD
The Ohio State University
2876 Donnylane Boulevard
Columbus, Ohio 43235 USA
chang.350@osu.edu
www.cgrg.ohio-state.edu/~wchang/

Vision

Satoshi Kitahara
#306, 4-17-13, Shimo-Odanaka
Nakahara-ku, Kawasaki 211-0041
JAPAN
kitahara@mars.dti.ne.jp
www.mars.dti.ne.jp/~kitahara/satos
hitop.html

The Vortex

Steven Churchill
Odyssey Productions
4413 Ocean Valley Lane
San Diego, California 92130 USA
steven@odyssey3d.com
www.odyssey3d.com

Wanted

Milla Moilanen
Kroma Productions Ltd.
Magnusborg Studios
Porvoo 06100 FINLAND
milla@magnusborg.fi
www.magnusborg.fi

Whirlygig

Jason Wen
1801 Lakeland Park Drive
Garland, Texas 75043 USA
wen@airmail.net
www.rsad.edu/~jwen

Why Cows Go Moon

Andrew Welihozkiy
c/o S. Trovas
Ringling School of Art and Design
2700 North Tamiami Trail
Sarasota, Florida 34234 USA
strovas@ringling.edu
www.rsad.edu

Emerging Technologies: The Millennium Motel

Enter The Millennium Motel and take an interactive journey into our collective future. Create three-dimensional surfaces by moving your hands in space, interact with intelligent objects to construct complex computer models, conduct a virtual orchestra with only your gestures, and enjoy talking to friends by placing interactive images of them on your desk.

The Millennium Motel showcases provocative research projects from some of the world's top scientists. The interactions with the projects are designed to allow attendees to tinker, experiment, and explore new horizons of innovations.



Chair
Kathryn Saunders
Royal Ontario Museum

Location
Kentia Hall
Office: Kentia Hall

Days	Hours
Sunday 8 August	5 - 7 pm
Monday 9 August	9 am - 6 pm
Tuesday 10 August	9 am - 6 pm *
Wednesday 11 August	9 am - 6 pm *
Thursday 12 August	9 am - 6 pm *
Friday 13 August	9 am - 1 pm

* Restricted admission during select hours.

Committee

- Mark Davies
- Kristen Douglas
- Randy Dreger
- Tara England
- Drew Gauley
- Rick Hopkins
- Cici Koenig
- Richard May
- Marshall Pittman
- Preston Smith
- Kevin Sugden

Jury

- Bruce Blumberg
Massachusetts Institute of Technology
- Jeff Close
ThinkOne, Inc.
- Clark Dodsworth
Osage Associates
- David Ebert
University of Maryland-Baltimore County
- Linda Jacobson
SGI
- Ken Perlin
New York University

Building Virtual Worlds

Randy Pausch

Carnegie Mellon University
Entertainment Technology Center

“Building Virtual Worlds” is an undergraduate course at CMU; teams of undergraduates, use the Alice authoring system to build VR worlds on a two-week production schedule. Their worlds can be experienced via an HMD or a WWW browser. This area demonstrates some of the worlds built by CMU students plus the Alice 3D animation tool and Teddy 3D modeling tool (by Takeo Igarashi, University of Tokyo). More information, and a free set of 3D authoring tools (model, paint, and animate) is available at www.alice.org.

City of News

Flavia Sparacino

MIT Media Lab
20 Ames Street, E15-384a
Cambridge, Massachusetts 02139
USA
flavia@media.mit.edu

An immersive, interactive, and dynamically growing 3D Web browser. This browser fetches and displays URLs, forming skyscrapers and alleys of text and images which participants can visit as if they were exploring an urban landscape of information. The system starts with a wireframe floor map of a chosen city or area and, as the participant follows paths, it dynamically builds a virtual 3D Web world of information. It creates mental associations between information and geography as if people were living in a customized memory palace.

Curlybot

Phil Frei

Massachusetts Institute of
Technology
20 Ames Street, E15-468C
Cambridge, Massachusetts 02139
USA
frei@media.mit.edu

Recent trends of embedding digital technology in toys have led to greater possibilities for manipulation and interaction. Curlybot is a two-wheeled toy with embedded electronics that can record and play back motion. It remembers its change in position and replays its movements with all the intricacies of the original gesture.

Digital Cloning System

Barnabas Takacs

Virtual Celebrity Productions LLC
3679 Motor Avenue, Suite 200
Los Angeles, California 90034 USA
takacsb@virtualceleb.com

A 3D, realistic “human” digital character that appears on screen with the look and feel of a live actor. A state-of-the-art facial tracking and animation system tracks the motion of an actor on a live set (without a cumbersome motion capture suit) and drives the movement of a 3D digital character.

Emergence

Rebecca Allen

University of California, Los Angeles
1200 Dickson Art Center
Los Angeles, California 90095 USA
rallen@arts.ucla.edu

A PC-based, real-time 3D software system that explores the role of human presence in a world of artificial life. A unique interface system utilizes voice input and a haptic device for tactile feedback. Novel forms of communication between human participants and artificial life forms include symbolic and expressive sounds, gestures, and movements.

Ensphered Vision

Hiroo Iwata

Institute of Engineering Mechanics
University of Tsukuba
305-8573 JAPAN
iwata@kz.tsukuba.ac.jp

In this image display system, a large screen is used as an alternative to HMDs. The sphere is an ideal shape for a screen that encompasses the human visual field because it maintains a constant distance between the eyes and the screen as the viewer’s head rotates. Ensphered Vision uses a single projector and a convex mirror to display seamless images.

HandSCAPE

Jay Lee

Massachusetts Institute of
Technology
20 Ames Street, E15-425
Cambridge, Massachusetts 02142
USA
vsu@mit.edu

HandSCAPE is an orientation-aware digital measuring tape. While a traditional measuring tape only measures linear distance, the addition of orientation sensors allows a vector measurement of both length and direction, and the tape can serve as an input device to computer drawing and modeling applications.

Head-Mounted Projector

Masahiko Inami

Tachi Laboratory
MEIP, School of Engineering
The University of Tokyo
7-3-1 Hongo Bunkyo-ku
Tokyo 113-8656 JAPAN
media3@start.u-tokyo.ac.jp

A head-mounted projector using the X’tal Vision (Crystal Vision) technology that was demonstrated in Enhanced Realities at SIGGRAPH 98 allows users to observe stereoscopic images. These include a transparent human body, a paper-type display, and a visuo-haptic integrated display.

Hologram/Head-Mounted Display

Takahisa Ando

Laboratories of Image Information Science and Technology
Daiichi-Kasai Senri-Chuo Building 3F
1-1-8, Shinsenri-Nishimachi Toyonaka, Osaka 565-0083 JAPAN
ando@image-lab.or.jp

This experimental see-through HMD (head-mounted display) uses holographic optical elements (HOE) instead of the half mirror that is usually used in conventional HMDs. Because it is grated, the system can produce images by diffraction, and it behaves like a heads-up display. It delivers the left and right images into both eyes, so users experience binocular parallax (stereoscopic) images.

HyperMask: Virtual Reactive Faces for Storytelling

Kim Binsted

Sony Computer Science Laboratories
3-14-13 Higashi-Gotanda Shinagawa-ku
Tokyo 141 JAPAN
kimb@csl.sony.co.jp

HyperMask projects an animated face onto a physical mask that is worn by an actor. As the mask moves within a prescribed area (the stage), its position and orientation are detected by a camera, and the computed projected image moves accordingly. If the orientation of the mask changes, the projected image changes with respect to the viewpoint of the audience.

Life Species

Christa Sommerer

ATR Media Integration and Communications Research Lab
2-2 Hikaridai, Seika-cho, Soraku-gun
Kyoto 61902 JAPAN
christa@mic.atr.co.jp

An interaction and communication environment where remotely located visitors in a global environment (the Internet) and onsite visitors (in the local environment) interact with each other through artificial creatures.

The Luminous Room: Some of It, Anyway

John Underkoffler

Massachusetts Institute of Technology
20 Ames Street, E15-425
Cambridge, Massachusetts 02139 USA
jh@media.mit.edu

When the CRT breaks open and the pixels inside leak out to stain everything, one of the results can be a Luminous Room. When graphical display is not only free to occur on any surface in the room but can also react to what's happening at those surfaces and within the space, certain kinds of usefulness may ensue.

metaField Maze

Bill Keays

MIT Media Lab
20 Ames Street, E15-447
Cambridge, Massachusetts 02139 USA
keays@media.mit.edu

In this familiar maze game, a marble rolls on a flat surface, its direction determined by two knobs that control the level on perpendicular axes. The surface is crisscrossed with a network of passages separated by shallow barriers and is accented here and there with the dreaded holes that swallow the marble and end the game.

Microworlds, Sirens, and Argonauts

Agueda Simó

University of Southern California
simo@felix.usc.edu

A fantastic journey through multi-scale microscopic worlds that grow and transform as users interact with them, revealing new patterns, structures, and sounds. It introduces the concept of "living narrative landscapes:" virtual spaces that allow users to successfully construct their own navigational maps and build their own representational models that can coexist with the narrative of the environments.

musicBottles

Hiroshi Ishii

Massachusetts Institute of Technology
20 Ames Street, E15-485
Cambridge, Massachusetts 02139 USA
ishii@media.mit.edu

musicBottles introduces a tangible interface that deploys bottles as containers and controls for digital information. The system consists of a specially designed table and three corked bottles that "contain" the sounds of the violin, the cello, and the piano in Édouard Lalo's Piano Trio in C Minor, Op. 7.

POND

Brad Paley

Digital Image Design Incorporated
New York USA
brad@didi.com

A community play space.

ROUTE 66

Daniel Szecket

Magritte's Cow
szecket@primenet.com

A live, interactive, MIDI-driven, 3D world outside the Motel. An ever-changing environment that can be transformed by visitors using MIDI interfaces linked to SideEffects Houdini software and driven by Intergraph workstations.

Shared Space: Collaborative Augmented Reality

Mark Billingham

Human Interface Technology Lab
University of Washington
215 Fluke Hall Box 352142
Seattle, Washington 98195 USA
grof@hitl.washington.edu

Shared Space merges real and virtual worlds in a way that can radically enhance face-to-face and remote collaboration. By wearing a lightweight, see-through head-mounted display, face-to-face and remote users create interactive art together using virtual animated characters and props in a real tabletop environment.

Surface Drawing

Steven Schkolne

California Institute of Technology
MS 256-80
Pasadena, California 91125 USA
ss@cs.caltech.edu

In this medium, which enables creation of a wide variety of intricate, organic 3D shapes, objects are created by moving the hand through space. The path of the hand forms surface pieces that seamlessly merge when they touch. Users can also erase, add details, and manipulate objects with a simple two-handed interface.

Touchable 3D Display

Hideki Kakeya

Communications Research
Laboratory
4-2-1 Nukui-Kitamachi
Koganei, Tokyo 184-0003 JAPAN
kake@crl.go.jp

In this reality-enhanced 3D display, Fresnel lenses are set so that parallax adds a sense of depth to a "real" image. Three-dimensional images appear very close to viewers (an effect that is difficult to achieve with conventional 3D displays), so viewers feel that their bodies are included in the 3D space. They interact with the images as if they were a part of the virtual environment.

TV Guides

Don Ritter

204 15th Street, 3rd Floor
Brooklyn, New York 11215 USA
ritter@interport.net

Viewers confront a living room environment that contains a video display playing live-broadcast programs. When viewers move within the installation, the audio and video fade out, and the cross hairs recede into a black screen followed by text that requests viewers to remain still. The television imagery and sound resume only after all viewers within the installation have remained motionless for at least five seconds.

VisiPhone

Fernanda Viegas

Massachusetts Institute of
Technology
fviegas@media.mit.edu

A communication object that opens a visual and auditory portal through space by visualizing the sounds flowing between two places. VisiPhone's graphical rendering of the audio brings greater continuity and expressiveness to this connection. It portrays the existence of the connection even in moments of silence, and it expresses the dynamics and inflections of conversation.

Visual Conductor

Jakub Segen

Bell Labs
segen@lucent.com

A "live" conductor directs a complex electronic orchestra with natural expressions of hands and baton. No sensors or wires impede the conductor's movements, which are sensed with video cameras. The system detects beat events and gestures related to rhythm patterns and dynamics, and uses this information to control the tempo and volume.

(void*): A Cast of Characters

Bruce Blumberg

Massachusetts Institute of
Technology
bruce@media.mit.edu

In this novel gathering place that unites the physical and the digital, the interactions focus on movement, groups, and body language. This allows the audience and a cast of controllable plus autonomous characters to interact with each other.

Water Display

Yuki Sugihara

University of Tokyo
Tachi Laboratory
7-3-1, Hongo Bunkyo-ku
Tokyo 113-8653 JAPAN
yuki@star.t.u-tokyo.ac.jp

This hemispheric, see-through display reveals images, sounds, and movement in a head-mounted system. Its hemispheric virtual immersion gives users a transparent sensation of being covered with water without getting wet.

Zowie Powered Smart Toys

Mary Francis Miller

Zowie Entertainment Inc.
1900 O'Farrell Street, Suite 250
San Mateo, California 94403 USA

Zowie Entertainment is a new high-tech toy and entertainment company that creates innovative play experiences for both kids and adults. Smart Toys combine the best of two worlds: traditional toys plus the power of computers and electronic chips. Experts predict that almost every toy will be powered by technology in the very near future. Today's techno-savvy kids crave increasingly sophisticated play experiences.

The Studio

The Studio focuses on teaming technologists with artists to imagine, create, and collaborate on the state of the art in a computer graphics laboratory. It is a working laboratory with high-end computer workstations, a multitude of software featuring 2D and 3D design and print technologies, and an array of high-end printers.

And for SIGGRAPH 99, The Studio moves into the third dimension with 3D printing. Artists, scientists, and engineers can walk in, create, and realize their creations as animations, 2D prints, and 3D objects.



Chair
Anshuman Razdan
Arizona State University

Location
West Hall A

Days	Hours
Sunday 8 August	1- 6 pm
Monday 9 August	9 am - 6 pm
Tuesday 10 August	9 am - 6 pm
Wednesday 11 August	9 am - 6 pm
Thursday 12 August	9 am - 6 pm
Friday 13 August	9 am - 5:30 pm*

* The computer workstation part of The Studio will close at 1 pm. However, outputs may be collected until 5:30 pm.

2D Large Format Printing

The Studio is hosting a wide array of computers loaded with industry-leading software programs. Using ICC workflow, these machines are color calibrated and color matched to the large format printers to ensure superior results. Color management training is provided by professional master printers.

The large-format printing section has access to printers from a variety of the top manufacturers. Take home a copy of your work up to 72 inches wide. State-of-the-art scanning capabilities is available.

3D Rapid Prototyping

The Guerilla Gallery started into the 3D realm at SIGGRAPH 98, and The Studio is continuing the trek. SIGGRAPH 99 features a full complement of UNIX, Windows NT, and Macintosh computers loaded with top-of-the-line 3D and 2D software.

The 3D "printing" section features rapid prototyping machines, so attendees can take home 3D models of their creations. Three-dimensional scanning of existing models is also provided.

Committee

Lyn Bishop
Zama Online Design

Peter Braccio
Naval Postgraduate School

Dan Collins
Arizona State University

Jon Cone
Cone Additions Press, Ltd.

Larry Danque
Cone Additions Press, Ltd.

Bharath Rao
Arizona State University

Michael Rees

Ben Steinberg
Arizona State University

Chris Tome
3D Magazine

Kimberly Voigt
Tyler School of Art

NEW! Animation

Discover the wild world of 3D animation, compositing, and editing. Become the next DeMille (or, at least, the next Ed Woods). Bring a BetacamSP tape with you so you can take your masterpiece home.

Make Art

The ever-popular Make Art section is for just what the name suggests, to make your art from scratch. The computers in this section have the same software that is loaded on the computers in the 2D and 3D areas. While this section does not have access to the large printers or rapid prototyping machines, you can print up to tabloid (11-inch x 17-inch) size prints on color inkjet and color laser printers. Also, this is where you can transfer your artwork to a t-shirt and take advantage of high-end, color-calibrated scanners.

GraphicsNet

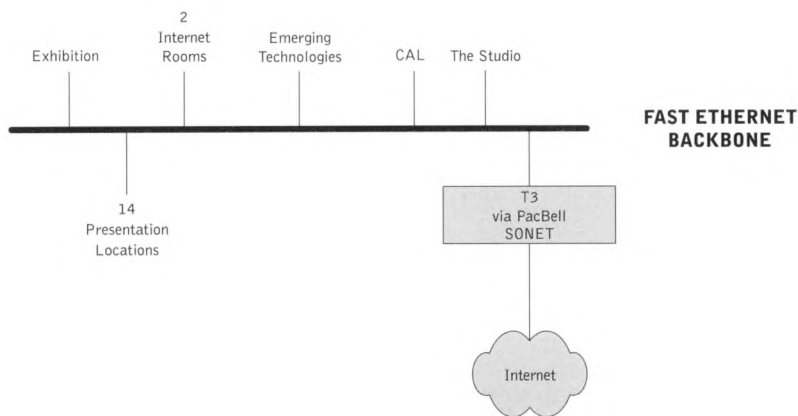
A state-of-the-art fiber backbone network linking programs and exhibitors within the conference to the global computer graphics community.

GraphicsNet is the SIGGRAPH 99 conference intranet. It serves as the link among the many conference programs and events, and as the gateway to the global graphics community. GraphicsNet is a production backbone based on Fast Ethernet (100 Mbps) links to the Exhibition; the Internet Access Centers; the 14 presentation rooms for Papers, Panels, Courses, Sketches & Applications; and the Electronic Schoolhouse: Educators Program | sigKIDS | Community Outreach; Emerging Technologies: The Millennium Motel; the Creative Applications Lab: The Digital Cafe; and The Studio. The production backbone is built with products from Cisco Systems, 3COM, Fluke, and others. It is connected to the Internet through a T3 circuit on the Pac Bell optical fiber Synchronous Optical Network (SONET) ring that serves the Los Angeles Convention Center.

The primary network management workstation and servers used in the Network Operations Center (NOC) are supplied by Sun Microsystems, Inc.



Chair
David Spoelstra
Media Machine



Networking Committee

David Evans
Sandia National Laboratories

Larry Kauffman
USA Group, Inc.

Ed Klaus
Sandia National Laboratories

CJ Murzyn
Encyclopedia Britannica

Steve Van Frank
Van Frank Consulting

On-site Support

Joe Cychosz
WorldServer, Inc.

Ben Kao
University of Illinois at Chicago

Michelle Kaysen
University of Illinois at Chicago

Ed Konowal
Lee County School District

Mike Medley
Infinite Blue

Keith Nesson
FSC End2End, Inc.

Paul Rossman
University of Illinois at Chicago

Fred Seals
WhitEyes Enterprises

Alan Verlo
University of Illinois at Chicago

John Yancey
University of Illinois at Chicago

Career Services

Are you looking for a job in the computer graphics industry?
Does your company have openings for qualified individuals in the computer graphics industry? If so, then the SIGGRAPH 99 Career Center and Job Fair are the perfect places for you!

- Résumés and job openings are posted and distributed.
- Interview scheduling is offered.
- Career mentoring services are available.
- A CD-ROM of résumés is available for purchase.

Career Center

All registered SIGGRAPH 99 attendees and exhibitors are invited to meet and explore mutual interests in the Career Center.

- Post résumés and job openings.
- Schedule job interviews.
- Distribute résumés and demo reels to employers.
- Talk with experienced professionals about your computer graphics career.

Companies that are not SIGGRAPH 99 exhibitors must pay a \$500 fee to participate in the Career Center. A discount applies to non-profit organizations.

Career Center Location

Room 150

Days

Saturday 7 August
Sunday 8 August
Monday 9 August
Tuesday 10 August
Wednesday 11 August
Thursday 12 August
Friday 13 August

Hours

6 - 8 pm
noon - 7 pm
8 am - 6 pm
8 am - 6 pm
8 am - 6 pm
8 am - 6 pm
8 am - 3 pm

Job Fair

All registered SIGGRAPH 99 attendees are welcome to attend. Exhibitors and non-exhibitors are eligible to participate for a \$750 fee.

Job Fair Location

Room 515

Day

Wednesday 11 August

Hours

8 am - 6 pm

Job Fair Participants (as of 7/1/99)*

The 3D0 Company
Redwood City, California USA

The Aerospace Corporation
El Segundo, California USA

Alias|Wavefront
Toronto, Ontario CANADA

Blizzard Entertainment
Irvine, California USA

Boris FX
Boston, Massachusetts USA

Cinesite, Inc.
Los Angeles, California USA

Discreet
Montreal, Quebec CANADA

Education Management Corporation
Pittsburgh, Pennsylvania USA

Electronic Arts - Tiburon
Maitland, Florida USA

GAMEQUEST
Van Nuys, California USA

High Voltage Software, Inc.
Hoffman Estates, Illinois USA

Los Angeles Times New Media
Los Angeles, California USA

LucasArts Entertainment Company LLC
San Rafael, California USA

MetaCreations Corporation
Carpinteria, California USA

Mondo Media
San Francisco, California USA

Nvidia
Santa Clara, California USA

Oddworld Inhabitants, Inc.
San Luis Obispo, California USA

Play, Incorporated
Rancho Cordova, California USA

Savannah College of Art and Design
Savannah, Georgia USA

SGI
Mountain View, California USA

Turner Entertainment Network
Atlanta, Georgia USA

* See sign in Career Center for updated list of participating companies.

Birds of a Feather/ Special Interest Groups

Birds of a Feather meetings (Room 508A) are impromptu gatherings. They can be scheduled at any time, to discuss any subject. To organize your own impromptu meeting, simply use the sign-up board in the South Lobby, where late additions and revisions to the Special Interest Groups and Birds of a Feather schedule are posted.

Special Interest Groups (SIGs)

are for attendees who think and work in similar technologies and environments. Special Interest Groups are open to all attendees. They are usually informal. At some, general subjects are discussed; others convene around topics related to specific product vendors. See the SIGGRAPH 99 Conference and Exhibition Locator for room locations and times of SIGs.

For more information on these Special Interest Groups, contact:

3rd Annual Ozone - Art, A-Life, Tech Innovation

Kevin Cain
+1.415.274.2205

AMAPI 3D Modeling SIG

Stefanie Stagnaro
+1.619.457.5359

Cal Poly Alumni and Friends Meeting

Chris Buckalew
+1.805.438.5678

Component-Based Visualization and Interaction Environment

Arthur Olson
+1.858.784.9702

Computer Graphics Pioneers

Sherry Keowen
+1.818.347.2210

Eurographics Workshop on Graphics Hardware

Ulrich Neumann
+1.213.740.4489

GIMP Developers & Users Meeting

Calvin Williamson
+1.310.448.7595

Hash's Animation: Master SIG

Ken Baer
+1.360.750.0042

IEEE TCVG Meeting

William Ribarsky
+1.404.894.6148

ISEA

Katarina Soukup
+1.514.847.8912

Massively Parallel Rendering SIG

Patricia Crossno
+1.505.845.7506

Molecular Graphics

Arthur Olson
+1.858.784.9702

OpenGL/OpenGL Optimizer/OpenGL Volumizer SIG

Stacy Maller
+1.650.933.5164

OpenInventor SIG

Stefanie Stagnaro
+1.619.457.5359

OSU Alumni Reception

Sharon Ferguson
+1.614.292.5171

Production Management

Jonathan Luskin
+1.510.548.3600

Quarterly Meeting of California Community Colleges

Laurie Burruss
+1.626.798.7129

Ray Tracing Roundtable

Eric Haines
+1.607.255.6706

Rochester Institute of Technology Alumni and Special Guest Reception

Dan Hickey
+1.716.475.7638

SIGGRAPH Carto BOF Meeting

Theresa-Marie Rhyne
+1.919.541.0207

SIGGRAPH Education Committee Meeting

Mike McGrath
+1.303.278.4644

SIGGRAPH Professional Chapters Meetings

Scott Lang
+1.201.343.6000 x 3380

SPEC/GPC Press Conference

Bob Cramblitt
+1.919.481.4599

Tokyo ACM SIGGRAPH

Michio Nagashima
+1.81.3.5468.0121

University of North Carolina at Chapel Hill Graphics Reunion

Jai Glasgow
+1.919.962.1791

International Services

SIGGRAPH 99 welcomes thousands of international computer graphics scientists, developers, and practitioners to this year's annual conference. Members of the SIGGRAPH 99 International Committee and a multilingual staff of student volunteers are available to help international attendees take full advantage of all the programs, events, and the Exhibition.

International Center

West Lobby

All international attendees are invited to make the SIGGRAPH 99 International Center their home away from home. During the conference, student volunteers provide assistance and conference information. Look for their yellow vest with flags that indicate their language fluency.

International Welcome Reception

Wednesday 11 August, 6 - 8 pm

Westin Bonaventure Pool Area, 4th Floor

All registered international attendees are invited.



International Chairs

Linda Hersom & James Scidmore
Scidmore, Hersom, & Others, Inc.

International Committee

Igor Alexandrov
Russian
+7.095.189.4094 Russia
+1.617.236.7356 USA
+1.617.262.5268 fax
igorsa@aol.com

Bongsung Andrew Bac
Korean
+1.219.434.7479 USA
+1.219.434.7444 fax
abac@sfc.edu

Christian Bauer
German
+43.6562.4867 Austria
+43.6562.4804 fax
chris@well.com

Alvaro De Oliveira
Portuguese
+3511.4870697 Portugal
+3511.4866752 fax
alvaro.oliveira@alfamicro.pt

Thierry Frey
French
+33.1.55.49.84.09 France
frey@siggraph.org

Erika Galvao Hinkle
Portuguese
+55.34.236.6697 Brazil
+614.873.1558 USA
+55.34.239.4144 fax
erika@nanet.com.br

Masa Inakage
Japanese
+81.467.32.7941 Japan
+81.467.32.7943 fax
inakage@cyberagenz.com

Maria Grazia Mattei
Italian
+39.02.798760 Italy
+39.02.798701 fax
mgm@mi.camcom.it

Ayumi Miyai
Japanese
+81.3.3535.3501 Japan
+81.3.3562.4840 fax
miyai@cgartarts.or.jp

Ahmad H. Nasri
Arabic
+961.3.233210 Lebanon
+961.1.353465 x 4223
+961.1.744461 fax
anasri@aub.edu.lb

Marilenis Olivera
Spanish
+58.2.5754141 Venezuela
+58.2.9063243 fax
olivera@ldc.usb.ve

Mark Ollila
Swedish
+46.26.648.865 Sweden
+46.26.648.788 fax
molly@hig.se

Pedro Cervantes Pintor
Spanish
+52.5.6722297 Mexico
+52.5.6722297 fax
pedrocp@netscape.net

Lalita Rajasingham
English
+0064.04.495.5266
New Zealand
+0064.04.495.5235 fax
lalita.rajasingham@vuw.ac.nz

Marcelo Knorich Zuffo
Portuguese
+55.11.8185661 Brazil
+55.11.8185664 fax
marcelo-knorich-zuffo@siggraph.org

Advisory Board

Alain Chesnais-Canada
achesnais@aw.sgi.com

Carolina Cruz-Neira-USA
carolina@siggraph.org

Midori Kitagawa-USA
midori@cgrg.ohio-state.edu

John Michael Pierobon-USA
pierobon@siggraph.org

English is the official language of SIGGRAPH 99.

英文是SIGGRAPH 99的法定語言。

L'anglais est la langue officielle du SIGGRAPH 99.

Englisch is die offizielle Sprache der SIGGRAPH 99.

L'inglese è la lingua ufficiale di SIGGRAPH 99.

SIGGRAPH 99の公用語は英語です。

SIGGRAPH 99의 정식 언어는 영어입니다.

O inglês é língua oficial da SIGGRAPH 99.

Английский язык является официальным языком общения SIGGRAPH 99.

El inglés es el idioma oficial de SIGGRAPH 99.

會說多種語言的國際運作委員會的成員，可解答問題及提供有關 SIGGRAPH 99 的資訊。

Les membres polyglotes de notre Comité Internationale restent à votre disposition pour répondre à vos questions et pour vous fournir toutes informations complémentaires sur le SIGGRAPH 99.

Mitglieder des mehrsprachigen Internationalen Komitees stehen bereit, um Fragen zu beantworten und Auskunft über SIGGRAPH 99 zu erteilen.

Membri multilingue del Comitato Internazionale sono disponibili a rispondere alle domande ed a fornire informazioni in riguardo a SIGGRAPH 99.

マルチリンガルな国際委員が SIGGRAPH 99に関する質問にお答えし、インフォメーションを提供いたします。

다 언어 국제운영위원회의 위원들은 SIGGRAPH 99에 관한 여러분의 모든 문의의 대답을 위해 대기하고 있습니다.

Membros políglotas do Comitê Internacional estarão disponíveis para responder as suas perguntas e para dar informação a respeito da SIGGRAPH 99.

Члены-сопидники многоязычного Международного комитета смогут ответить на ваши вопросы и предоставить информацию по СИГГРАПЖ 99.

Miembros multilingües del Comité Internacional están a su disposición para responder preguntas y proveer información sobre SIGGRAPH 99.

SIGGRAPH 99 offers simultaneous Japanese interpretation of select sessions and activities. For complete information, including interpretation fees, contact:

Sachiyo Ikeda
Link International NYC
Kentia Hall

- 1 **Wilshire Grand Hotel & Centre**
(Formerly Omni Los Angeles)
Headquarters Hotel
930 Wilshire Boulevard
Los Angeles, California 90017
+1.213.688.7777
+1.213.612.3989 fax
- 2 **Best Western Colorado Inn**
2156 E. Colorado Boulevard
Pasadena, California 91107
+1.626.793.9339
+1.626.568.2731 fax
- 3 **Best Western Mayfair**
1256 West Seventh Street
Los Angeles, California 90017
+1.213.484.9789
+1.213.484.2769 fax
- 4 **Best Western Pasadena Inn**
3570 East Colorado Boulevard
Pasadena, California 91107
+1.626.796.9100
+1.626.405.9948 fax
- 5 **Best Western Pasadena Royale**
3600 East Colorado Boulevard
Pasadena, California 91107
+1.626.793.0950
+1.626.568.2827 fax
- 6 **Beverly Garland Holiday Inn**
4222 Vineland
North Hollywood, California 91602
+1.818.980.8000
+1.818.766.5230 fax
- 7 **Beverly Hilton**
9876 Wilshire Boulevard
Los Angeles, California 90024
+1.310.274.7777
+1.310.285.1313 fax
- 8 **Courtyard by Marriott - Century City**
10320 West Olympic Boulevard
Los Angeles, California 90064
+1.310.556.2777
+1.310.203.0563 fax
- 9 **Doubletree Hotel Pasadena**
191 North Los Robles Avenue
Pasadena, California 91101
+1.626.792.2727
+1.626.792.3755 fax
- 10 **Holiday Inn Downtown Los Angeles**
750 Garland Avenue
Los Angeles, California 90017
+1.213.628.5242
+1.213.628.1201 fax
- 11 **Holiday Inn Los Angeles City Center**
1020 South Figueroa Street
Los Angeles, California 90015
+1.213.748.1291
+1.213.748.6028 fax
- 12 **Holiday Inn Pasadena**
303 East Cordova Street
Pasadena, California 91101
+1.626.449.4000
+1.626.584.1390 fax
- 13 **Hotel Figueroa**
939 South Figueroa Street
Los Angeles, California 90015
+1.213.627.8971
+1.213.689.0305 fax
- 14 **Hotel Inter-Continental**
251 South Olive Street
Los Angeles, California 90012
+1.213.617.3300
+1.213.617.3399 fax
- 15 **Hyatt Regency Los Angeles**
711 South Hope Street
Los Angeles, California 90017
+1.213.683.1234
+1.213.629.3230 fax
- 16 **Hyatt West Hollywood**
8401 Sunset Boulevard
West Hollywood, California 90069
+1.323.848.3817
+1.323.650.7024 fax
- 17 **In Town Hotel Los Angeles**
913 South Figueroa Street
Los Angeles, California 90015
+1.213.628.2222
+1.213.687.0566 fax
- 18 **Kawada Hotel**
200 South Hill Street
Los Angeles, California 90012
+1.213.621.4455
+1.213.687.4455 fax
- 19 **Los Angeles Athletic Club**
431 West Seventh Street
Los Angeles, California 90014
+1.213.625.2211
+1.213.689.1194 fax
- 20 **Los Angeles Marriott**
333 South Figueroa Street
Los Angeles, California 90071
+1.213.617.1133
+1.213.613.0291 fax
- 21 **Miyako Inn**
328 East 1st Avenue
Los Angeles, California 90012
+1.213.617.0202
+1.213.617.2700 fax
- 22 **New Otani Hotel**
120 South Los Angeles Street
Los Angeles, California 90012
+1.213.629.1200
+1.213.622.0980 fax
- 23 **Pasadena Hilton**
150 South Los Robles Avenue
Pasadena, California 91101
+1.626.577.1000
+1.626.584.3148 fax
- 24 **Quality Inn**
3321 East Colorado Boulevard
Pasadena, California 91107
+1.626.796.9291
+1.626.796.9780 fax
- 25 **Quality Inn & Suites Downtown Los Angeles**
1901 West Olympic Boulevard
Los Angeles, California 90006
+1.213.385.7141
+1.213.385.5808 fax
- 26 **Radisson Hotel Midtown Los Angeles**
3540 South Figueroa Street
Los Angeles, California 90007
+1.213.748.4141
+1.213.746.3255 fax
- 27 **Radisson Wilshire Plaza**
3515 Wilshire Boulevard
Los Angeles, California 90010
+1.213.381.7411
+1.213.386.7379 fax
- 28 **Ramada Inn Pasadena**
3500 East Colorado Boulevard
Pasadena, California 91107
+1.626.792.1363
+1.626.792.9213 fax
- 29 **Regal Biltmore**
506 South Grand Avenue
Los Angeles, California 90071
+1.213.624.1011
+1.213.612.1545 fax
- 30 **Ritz-Carlton Huntington**
140 South Oak Knoll Avenue
Pasadena, California 91106
+1.626.568.3900
+1.626.568.3700 fax

- 31 Sheraton Universal**
333 Universal Terrace Parkway
Universal City, California 91603
+1.818.980.1212
+1.818.985.4980 fax
- 32 Travelodge Pasadena**
2131 East Colorado
Pasadena, California 91107
+1.626.796.3121
+1.626.793.4713 fax
- 33 Universal City Hilton and Towers**
555 Universal Terrace Parkway
Universal City, California 91608
+1.818.506.2500
+1.818.509.2058 fax
- 34 USC Dormitories**
620 West 35th Street
Los Angeles, California 90089
+1.213.740.5956
- 35 Vagabond Inn Pasadena West**
1203 East Colorado Boulevard
Pasadena, California 91106
+1.626.449.3170
+1.626.577-8873 fax

- 36 Westin Bonaventure**
404 South Figueroa Street
Los Angeles, California 90071
+1.213.624.1000
+1.213.612.4800 fax
- 37 Westin Century Plaza Hotel & Tower**
2025 Avenue of the Stars
Los Angeles, California 90071
+1.310.277.2000
+1.310.551.3355 fax
- 38 Wilshire Royale Howard**
Johnson Plaza
2619 Wilshire Boulevard
Los Angeles, California 90057
+1.213.387.5311
+1.213.380.8174 fax
- 39 Wyndham Checkers**
535 South Grand Avenue
Los Angeles, California 90071
+1.213.624.0000
+1.213.626.9906 fax
- 40 Westway Inn**
1599 East Colorado Boulevard
Pasadena, California 91106
+1.626.304.9678
+1.626.449.3493 fax



Registration and Media Information

Programs, activities, and documentation included with your registration

Full Conference
Conference Select
Exhibits Plus

Technical Program

Conference Programs/Activities

Conference Documentation

Receptions

Exhibition/Startup Park	●	●	●
Courses	●		
Papers/Panels	●		
Sketches & Applications	●	●	
Electronic Schoolhouse	●	●	
Art Gallery: technOasis	●	●	●
Computer Animation Festival			
Electronic Theater Ticket	●		
Electronic Theater Matinée Ticket		●	
Animation Theaters	●	●	●
The Story of Computer Graphics	●	●	●
Creative Applications Lab: The Digital Cafe	●	●	
Emerging Technologies: The Millennium Motel	●	●	●*
Special Sessions/Daytime	●	●	
Special Sessions/Evening	●	●	●
The Studio	●	●	
Birds of a Feather	●	●	●
Career Center	●	●	●
Fundamentals Seminar	●	●	●
International Services	●	●	●
Internet Access Centers	●	●	●
Job Fair	●	●	●
Keynote Address/Awards	●	●	●
Pathfinders	●	●	●
Special Interest Groups	●	●	●
Conference Abstracts & Applications and CD-ROM	●	●	
Conference Proceedings, Video, and CD-ROM	●		
Course Notes CD-ROM	●		
Electronic Art & Animation Catalog and CD-ROM	●	●	
Course Reception	●		
Papers/Panels Reception	●		
Welcome Reception	●	●	●

Member Rate

If you are currently an ACM of SIGGRAPH member, you are eligible for member discounts. You must provide your current ACM or SIGGRAPH membership number in order to receive the discount, otherwise you will be charged the non-member rate. Local or regional SIGGRAPH memberships are not eligible for registration discounts.

Student Rate

You must be a full-time student in order to qualify. You must attach copies of the following to your registration form to qualify for student rates:
 * Your 1999 ACM student membership card OR
 * Your valid 1999 student identification card, AND a letter on school letterhead verifying you are a student. The letter must include your registrar's name, address, and phone number so we can verify your student status.

If you do not follow the above instructions, you will not receive the student discount and will be charged the non-member rate. In addition, you must present your ID card (not a copy) in order to pick up your credentials.

Registration Hours

If you registered by Friday 2 July, please go to Advanced Registration in Kentia Hall. Otherwise proceed to Onsite Registration, also in Kentia Hall.

Days	Hours
Saturday 7 August	6 - 8 pm
Sunday 8 August	noon - 7 pm
Monday 9 August	8 am - 6 pm
Tuesday 10 August	8 am - 6 pm
Wednesday 11 August	8 am - 6 pm
Thursday 12 August	8 am - 5 pm
Friday 13 August	8 am - 1 pm

Media Headquarters Hours

Days	Hours
Sunday 8 August	10 am - 6 pm
Monday 9 August	8 am - 6 pm
Tuesday 10 August	8 am - 6 pm
Wednesday 11 August	8 am - 6 pm
Thursday 12 August	8 am - 5 pm
Friday 13 August	8:30 am - 1 pm

Media Registration

Media representatives must register in the Media Headquarters Office, Room 301. You must submit full and proper media credentials for a media pass. No exceptions will be made.

Media Briefing

LACC Theater (Room 411)
 Tuesday 10 August 8:15 - 8:45 am

The official SIGGRAPH media briefing is the place to hear what's new and what's hot at SIGGRAPH 99. Preview the Electronic Theater and receive insight into SIGGRAPH 99 programs and activities.

Exhibition Floor Tour

Immediately following the Media Briefing
 Tuesday 10 August

The SIGGRAPH 99 Exhibition, a benchmark for the diversity and exponential growth of digital technologies, showcases over 325 exhibitors in more than 150,000 square feet. Gain access to the exhibit floor before it opens to the public. Get a "sneak preview" of the latest products and applications. Small groups of media representatives will be escorted onto the exhibit floor.

Media Tours

Art Gallery: technOasis
 Monday 9 August 9 - 10 am

Emerging Technologies:

The Millennium Motel
 Monday 9 August 9 - 10 am
 Thursday 12 August 9 - 10 am

Exhibitor Media Events

A schedule of various exhibitor media events will be available in the Media Headquarters Office, Room 301.

* Restricted admission during select hours.

Attendee Services

SIGGRAPH 99 and the Los Angeles Convention Center offer several services during the conference to make your week more enjoyable.

Airport Shuttle Desk

Kentia Hall

Wednesday 11 August	8 am - 6 pm
Thursday 12 August	8 am - 5 pm
Friday 13 August	8 am - 1 pm

A service desk is available to make airport shuttle reservations. Return reservations should be made at least one day prior to your departure.

Audio/Visual Services

West Hall A

+1.213.765.4616

Sunday 8 August	7 am - 7 pm
Monday 9 August	7 am - 7 pm
Tuesday 10 August	7 am - 7 pm
Wednesday 11 August	7 am - 7 pm
Thursday 12 August	7 am - 7 pm
Friday 13 August	7 am - 2 pm

Direct all questions about audio/visual needs to this office. For more information on audio/visual services for speakers, see Speaker Prep Room.

Automated Teller Machines (ATMs)

There is an ATM in the Los Angeles Convention Center located next to the Business Center on the Concourse walkway.

Baggage Check

South Lobby

SIGGRAPH 99 provides complimentary luggage check services for briefcases, backpacks, and other small items during conference hours. SIGGRAPH 99 is not responsible for items left in the Baggage Check overnight. Items left after hours will be unattended.

Banks/Currency Exchange

The nearest bank to the Los Angeles Convention Center is Ist Business Bank, 601 West Fifth Street, +1.213.489.1000. The nearest currency exchange is the World Banknotes Exchange, 406B West Sixth Street, +1.213.627.5404.

Bookstore

West Lobby

Business Outreach Books offers computer-graphics related books at the Los Angeles Convention Center during SIGGRAPH 99. Titles will also be available online after SIGGRAPH 99. See the SIGGRAPH 99 Web site for further details: www.siggraph.org/s99/

Sunday 8 August	noon - 7 pm
Monday 9 August	8 am - 6 pm
Tuesday 10 August	8 am - 6 pm
Wednesday 11 August	8 am - 6 pm
Thursday 12 August	8 am - 5 pm
Friday 13 August	8 am - 5 pm

Note: Bookstore returns will be accepted up to 30 days after the conference. All bookstore policies are those of Business Outreach Books and not SIGGRAPH 99.

Child Care

Rooms 517, 518, 519

Accent on Children's Arrangements provides age-appropriate child care activities for children from three months to 16 years of age at the Los Angeles Convention Center. Children must be registered for a minimum of three hours. Individualized evening child care is also available on a limited, first-come, first-served basis. If you need to cancel a registration, you must call 48 hours in advance to qualify for a full refund of your child care fees.

The Accent on Arrangements staff is certified in infant and child CPR. Child care services are guaranteed to be available during the following hours.

Sunday 8 August	11:30 am - 7 pm
Monday 9 August	8 am - 6 pm
Tuesday 10 August	8 am - 7 pm
Wednesday 11 August	8 am - 7 pm
Thursday 12 August	8 am - 6 pm
Friday 13 August	8 am - 6 pm

Conference Management Office

Room 304

+1.213.765.4620

If you have questions regarding SIGGRAPH 99, call or stop by this office at anytime.

Exhibition Management Office

Room 303

+1.213.765.4620

If you have any questions regarding the SIGGRAPH 99 Exhibition, call or visit a staff member here.

Exhibitor Registration

Outside South Hall

Exhibitors should pick up their badges at the exhibitor registration counter, which is open during registration hours. See Registration.

First Aid Offices

South Hall (North Side adjacent to the Taxi dropoff)

+1.213.741.1151 x 5136

Petree Hall/West Hall

+1.213.741.1151 x 5133

A nurse or paramedic is on duty at the first aid areas.

Food Services

The Los Angeles Convention Center operates several food concessions for the convenience of SIGGRAPH 99 attendees. Food carts and casual seating are available throughout the convention center.

Information Desks

South Lobby, West Lobby

For answers to your questions about SIGGRAPH 99, stop by the information desks. The staff can provide information on conference programs and events and Los Angeles-related questions.

International Services

West Lobby

+1.213.765.4220

In the International Center, members of the SIGGRAPH 99 International Committee and a multi-lingual staff of student volunteers are available to help international attendees take full advantage of all the programs, events, and the Exhibition. Look for the student volunteers with yellow vests and flags indicating their language fluency.

Internet Access Centers

West West Hall A & Kentia Hall

Two fully networked areas in the LACC provide complete Internet access.

Los Angeles Convention Center

1201 South Figueroa Street

Los Angeles, California

+1.213.741.1151

+1.213.765.4266 fax

Accessibility

The convention center is wheel-chair accessible. It has no curbs, and there are elevators to the upper levels.

Business Center

+1.213.741.1151

The business center is located in the South Lobby. A variety of services are offered by the Business Center including: computer time rental, faxing services, photocopying, and small package mailing. The Business Center also sells office supplies and US stamps.

Parking

SIGGRAPH 99 attendees can park at the Los Angeles Convention Center for \$7 per day.

Lost and Found Security

+1.213.765.4605

After the conference, all items will be turned over to the LACC security office. To inquire about lost items during and after the conference, call LACC security. Lost registration badges will be located in Special Assistance in Kentia Hall.

Merchandise Fulfillment Center

Kentia Hall

+1.213.765.4226

Your conference documentation (included with registration) must be picked up at the Fulfillment Center.

Technical materials and conference documentation will not be shipped, nor will refunds be given for any materials that are not picked up at the conference.

Merchandise Fulfillment Hours:

Saturday 7 August	6 - 8 pm
Sunday 8 August	noon - 7 pm
Monday 9 August	8 am - 6 pm
Tuesday 10 August	8 am - 6 pm
Wednesday 11 August	8 am - 6 pm
Thursday 12 August	8 am - 5 pm
Friday 13 August	8 am - 1 pm

Technical Material Sold After the Conference

SIGGRAPH 99 Conference Proceedings contains the permanent record of the technical papers and conference awards from SIGGRAPH 99.

SIGGRAPH 99 Proceedings CD-ROM contains the electronic version of the conference proceedings, including papers, images, and additional material not found in the printed version including QuickTime movies and extended versions of papers.

SIGGRAPH 99 Conference Proceedings Videotape contains videotape supplements to technical papers.

SIGGRAPH 99 Conference Abstracts & Applications and CD-ROM contains the permanent record of Panels, Sketches & Applications, Electronic Schoolhouse, and Emerging Technologies: The Millennium Motel.

SIGGRAPH 99 Electronic Art & Animation Catalog and CD-ROM contains the permanent record of the Art Gallery: technOasis and the Computer Animation Festival.

SIGGRAPH 99 Course Notes CD-ROM contains the electronic version of the course notes.

SIGGRAPH 99 Video Review contains animations presented in the Electronic Theater and Animation Theaters.

To order, contact:

ACM Order Department
 P.O. Box 12114
 Church Street Station
 New York, New York 10257 USA
 800.342.6626 (Continental US and Canada)
 +1.212.626.0500 (International)
 +1.212.944.1318 fax
 orders@acm.org

Message Center

South Lobby
 +1.213.765.4600

The message center is located in the South Lobby of the LACC. Here you will find kiosks corresponding to each letter of the alphabet. You may leave a note for a friend pinned to one of the kiosks.

Registration (Advance & Onsite)

Kentia Hall

Saturday 7 August	6 - 8 pm
Sunday 8 August	noon - 7 pm
Monday 9 August	8 am - 6 pm
Tuesday 10 August	8 am - 6 pm
Wednesday 11 August	8 am - 6 pm
Thursday 12 August	8 am - 5 pm
Friday 13 August	8 am - 1 pm

Restaurant Information Desks

South Lobby, West Lobby

These desks are staffed with individuals to assist you in making reservations at local Los Angeles restaurants. These desks are open during registration hours. The Restaurant Information desks are closed on Saturday.

Shipping Desk

South Lobby

Staff can assist you in shipping your merchandise, Course Notes, and other conference materials. For your convenience, the shipping desk provides next-day air, second-day air, and regular ground shipping services to destinations throughout the world. The shipping desk is open during registration hours.

Shuttle Service

800.642.3287

Los Angeles Convention Center

Shuttle Hours:

Saturday 7 August	4:30 - 8:30 pm
Sunday 8 August	10 am - 7:30 pm
Monday 9 August	7:30 am - 6:30 pm
Tuesday 10 August	7:30 am - 7 pm
Wednesday 11 August	7 am - 10 pm
Thursday 12 August	7:30 am - 9 pm
Friday 13 August	7:30 am - 6:30 pm

SIGGRAPH 99 provides complimentary shuttle bus service between most conference hotels, University of Southern California dormitories, and the Los Angeles Convention Center, and to and from SIGGRAPH 99 receptions and the Electronic Theater. Look for signs and flyers indicating pick-up times and locations at your hotel, the information desks located in the LACC, and the information desk outside the West Lobby entrance. Please note: the Figueroa Hotel and the Holiday Inn City Center are considered "walk" hotels and will not have shuttle service to or from the Los Angeles Convention Center.

If you have any shuttle questions, contact the Shuttle Service directly during official shuttle hours. Also, for assistance with handicapped service, please call 800.642.3287. SIGGRAPH 99 provides buses with wheel-chair lifts and tie-downs.

Shuttles to Receptions

Courses Reception
 Pershing Square
 Olive and 6th Streets

Papers/Panels Reception
 Westin Bonaventure
 404 South Figueroa Street

Coaches begin shuttling from all hotels 30 minutes before the receptions start. The last coach departs 15 minutes after the receptions close. Shuttles will transport attendees staying at the "walk" hotels (Figueroa Hotel and Holiday Inn City Center) to and from the reception.

Shuttles to Electronic Theater

The Electronic Theater will take place at the Shrine Auditorium.

Matinée

Tuesday 10 August	2 - 4 pm
Wednesday 11 August	2 - 4 pm

Matinée shuttles begin transporting attendees to the Shrine one hour prior to the start time. Shuttles return to the LACC only after the performance. Electronic Theater matinee shuttles do not deliver attendees to hotels.

Evening

Monday 9 August	7 - 9 pm
Tuesday 10 August	7 - 9 pm
Wednesday 11 August	7 - 9 pm
Thursday 12 August	7 - 9 pm

Evening shuttles begin transporting attendees to the Shrine 1.5 hours prior to the start time. Shuttles return to the LACC, hotels, and any corresponding receptions after the performance.

SIGGRAPH Store

South Lobby
 +1.213.765.4227

The store is for casual browsers and serious shoppers. Stop by to purchase additional technical materials plus gifts for your family, co-workers, and yourself. Technical material and conference documentation are available for purchase at the store. SIGGRAPH 99 merchandise is available on a first-come, first-served basis.

Merchandise vouchers are only valid in the Fulfillment Center located in Kentia Hall of the Los Angeles Convention Center.

SIGGRAPH Store Hours:

Saturday 7 August	6 - 8 pm
Sunday 8 August	noon - 7 pm
Monday 9 August	8 am - 6 pm
Tuesday 10 August	8 am - 6 pm
Wednesday 11 August	8 am - 6 pm
Thursday 12 August	8 am - 5 pm
Friday 13 August	8 am - 1 pm

Speaker Prep Room

Front of West Hall A
+1.213.765.4270

Saturday 7 August	noon - 7 pm
Sunday 8 August	7 am - 7 pm
Monday 9 August	7 am - 7 pm
Tuesday 10 August	7 am - 7 pm
Wednesday 11 August	7 am - 7 pm
Thursday 12 August	7 am - 7 pm
Friday 13 August	7 am - 2 pm

All speakers must check in at the Speaker Prep Room at least 24 hours before their presentation.

Speakers and contributors should use the contributor registration desk to pick up registration credentials and obtain conference information.

Speaker ribbons and badge holders are available only in the Speaker Prep Room.

Speakers may use the Speaker Prep Room to prepare for their presentation, preview slides and videotapes, sort slides, and obtain slide carousels.

Changes in audio/visual equipment needs in presentation rooms should be directed to the Speaker Prep Room.

Special Assistance Desk

Kentia Hall
+1.213.765.4202

Staff members at the special assistance desk can help attendees resolve a wide range of possible problems and concerns, including:

- Credit card problems (validations, errors)
- Lost badges
- Registration corrections and upgrades
- Substitute registration (only if authorized on company letterhead)

Special Policies

- You must be 16 years or older to register.
- No cameras or recording devices are permitted at SIGGRAPH 99.
- SIGGRAPH 99 may record all, or portions of, conference programs and events.
- Food and beverages cannot be brought into Electronic Theater performances.

Technical Session Lounge

West Lobby

After each technical session, join presenters and authors for continued discussion in a comfortable, informal lounge setting.

Ticket Purchase and Exchange Counter

Kentia Hall

Electronic Theater Tickets

One ticket per person is included with Full Conference and Conference Select registrations. Every attempt is made to accommodate your requested Electronic Theater evening. If you would like to exchange your ticket, you may do so at this counter based on availability. All performances contain the same material.

Badged attendees may purchase up to four Electronic Theater tickets (subject to availability) at Onsite Registration beginning at 6 pm Saturday, 7 August. Last-minute tickets are generally available. They will be sold at the door to the Electronic Theater one hour prior to showtime. All sales are final.

Reception Tickets

Course and Papers/Panels reception tickets are also available at this counter. Cost is \$45 per person, per reception. All sales are final.

Telephone Numbers

Art Gallery: technOasis Office
+1.213.765.4212

Audio/Visual Services
+1.213.765.4616

Computer Animation Festival Office
+1.213.765.4210

Conference Management Office
+1.213.765.4620

Creative Applications Lab Office
+1.213.765.4240

Electronic Schoolhouse Office
+1.213.765.4251

Emerging Technologies:
The Millennium Motel Office
+1.213.765.4213

Exhibition Management Office
+1.213.765.4630

First Aid Offices
South Hall +1.213.741.1151, ext. 5136
West Hall +1.213.741.1151, ext. 5133

Housing and Travel Desk
+1.213.765.4618

International Center
+1.213.765.4220

Los Angeles Convention Center
+1.213.741.1151

Media Headquarters
+1.213.765.4640
+1.213.765.4201 fax

Merchandise Fulfillment
+1.213.765.4226

Message Center
+1.213.765.4600

Registration
+1.213.765.4200

Security
+1.213.765.4605

Shuttle Service
800.642.3287

SIGGRAPH Store
+1.213.765.4227

Special Assistance Desk
+1.213.765.4202

Speaker Prep Room
+1.213.765.4270

The Studio Office
+1.213.765.4214

Exhibition

The world's epicenter of computer graphics and interactive technologies: hundreds of companies offering thousands of products and services for the new century. See, explore, and interact with essential tools and techniques produced by today's worldwide trendsetters and tomorrow's upstart innovators.

Startup Park

Exclusively reserved for small, first-time exhibitors who are introducing their technologies to the SIGGRAPH audience. Many of the companies that dominate the computer graphics industry didn't even exist 10 years ago. Startup Park presents the products and services that could dominate the SIGGRAPH 2002 Exhibition.

Exhibits Plus Registration

With Exhibits Plus, you receive admission to the Exhibition, Startup Park, Art Gallery: technOasis, Animation Theaters, The Story of Computer Graphics, Emerging Technologies: The Millennium Motel, Special Sessions/Evening, Birds of a Feather, Career Center, Fundamentals Seminar, International Services, Internet Access Centers, Job Fair, Keynote Address/Awards, Pathfinders, Special Interest Groups, and Welcome Reception. Exhibits Plus registration is non-refundable.

Location

South Hall

Days

Tuesday 10 August	10 am - 6 pm
Wednesday 11 August	10 am - 6 pm
Thursday 12 August	10 am - 5 pm

Hours

Space Reservation

To purchase exhibition space for SIGGRAPH 2000, call or write:

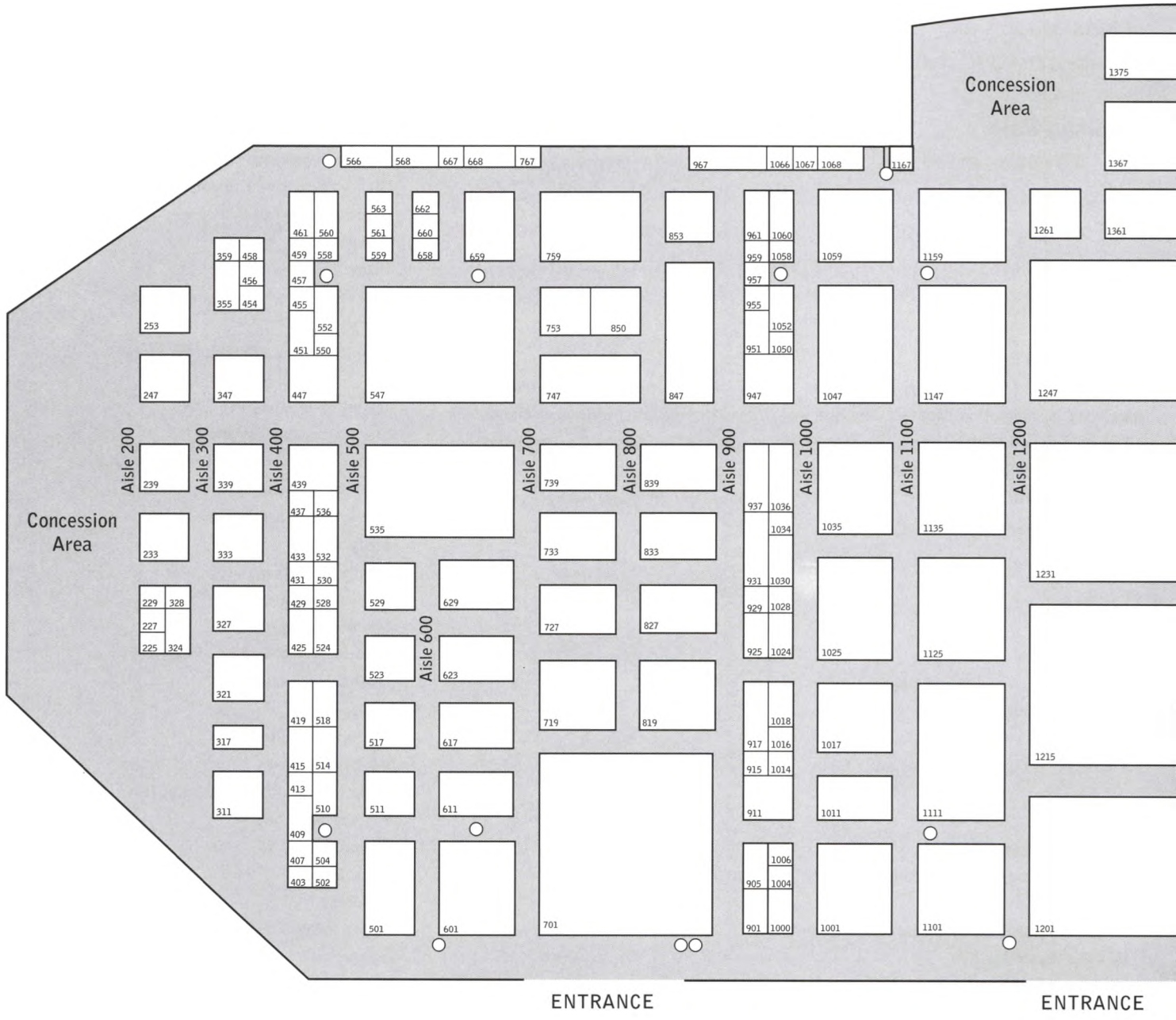
SIGGRAPH 2000 Exhibition Management
Hall-Erickson, Inc.
98 East Naperville Road
Westmont, Illinois 60559 USA
+1.630.434.7779
+1.630.434.1216 fax
halleric@siggraph.org

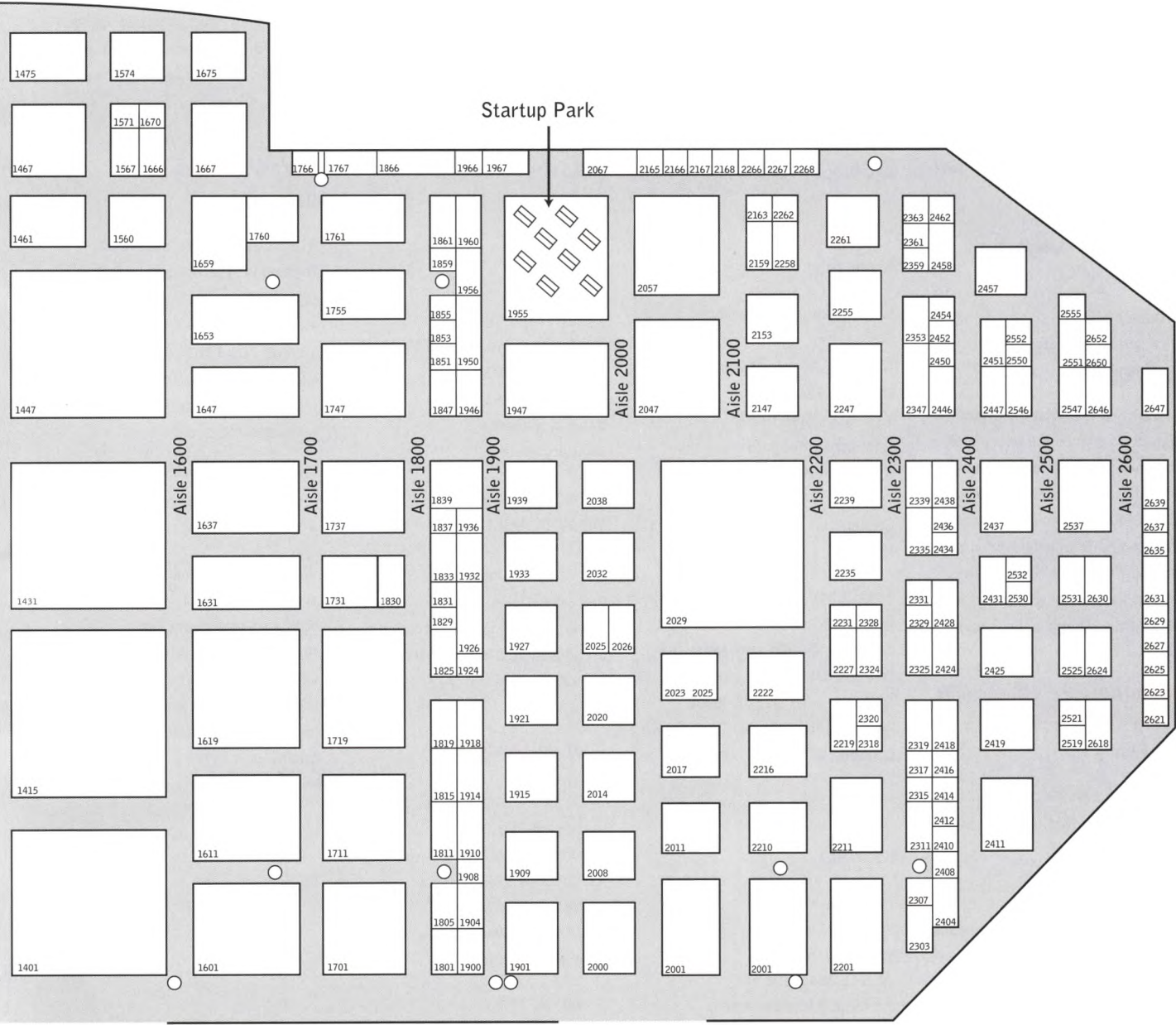
Products and Services on Display

3D Modeling
Animation
Artificial Intelligence
Business and Financial Graphics
CAD/CAM/CAE/CIM/Robotics
Cameras and Scanners; Scan Converters
Computer-Video Interfacing
Desktop Publishing
Digital Cameras
Digital Imaging
Electronic Publishing
Encoders/Decoders
Gaming Support Tools
Geographic Information Systems
Graphic Art Systems
Graphic Design Systems
Graphics Accelerator Boards
Graphics Standards Software
Groupware
Haptic Input Devices
Hardcopy Devices: Photographs/Slides
HDTV
High-Performance Graphics Processors
High-Resolution Technologies
Image-Based Modeling
Information Visualization
Input Devices: Digitizers, Light Pens, Mice
Low-Cost Graphics Systems
Mapping and Cartography
Medical Imaging Software
Mobile Computing
Motion Capture
Multimedia/Hypermedia
Networking: Hardware, Software, Services
OEM Components
Paint Systems
PC Add-On Products
PC-Based Systems
PDAs (Personal Digital Applications)
Printers and Plotters
Projectors
Publications
Rendering
Scientific Visualization Software
Simulation
Storage Devices: Tape/Disk
Terminals, Monitors, and Displays
User Interface Tools & Techniques
Virtual Reality
Visual Effects Software
Web 3D

All product names printed in this publication are trademarks or registered names of their respective companies.

Exhibition Floor Plan





ENTRANCE

ENTRANCE

2d3

Booth 2266

14 Minns Estate, West Way
Oxford OX2 0JB
UNITED KINGDOM
+44.1865.261826
+44.1865.240527 fax
nick@2d3.com

Nick Bolton
Marketing Manager

3Dlabs, Inc.

Booth 1467

480 Potrero Avenue
Sunnyvale, California 94086 USA
+1.408.530.4766
+1.408.530.4701 fax
elizabeth.riegel@3dlabs.com
www.3dlabs.com

Elizabeth Riegel
Director of Marketing
Communications

3Dlabs is a leading provider of high-performance hardware and software graphics accelerators for workstation and design professionals. 3Dlabs sells its award-winning Oxygen and Permedia products to leading PC OEMs, through an international reseller network and directly on 3Dlabs' online store.

3DMetrics, Inc. (Division of In-Harmony Technology)

Booth 1034

101 South San Antonio Road
Petaluma, California 94952 USA
+1.707.769.5057
+1.707.773.1578 fax
anna@3dmetrics.com
www.inharmonytech.com/venus3d/

Anna Levinson
Vice President of Sales

3DMetrics has developed a patented system for capturing highly accurate, 3D images with the simplicity and convenience of a "point-and-shoot" camera.

3D Pipeline Corporation

Booth 2462

1250 Prospect Avenue, Suite 100
La Jolla, California 92037 USA
+1.619.551.5493
info@3dpipeline.com
www.3dpipeline.com

Heather Walders
Public Relations

Contract product development services including software development and content creation for hardware manufacturers, game producers, and toy companies. Fast development cycles, reasonably priced, and leading-edge technology.

The3DShop

Booth 1950

5555 Oakbrook Parkway
Suite 540
Norcross, Georgia 30093 USA
888.368.3268
+1.770.368.8839 fax
sales@the3dshop.com
www.the3dshop.com

CK Tan
President

The3DShop.com specializes in 3D OpenGL graphics cards, NLE boards, and build your own workstations. Introducing our New GRA-VT & TACHYON 2000 – includes Intel, 3Dlabs, E&S, ELISA, Canopus, Miro, DPS, and others.

3D Systems

Booth 501

26081 Avenue Hall
Valencia, California 91355 USA
+1.661.295.5600
+1.661.294.8406 fax
moreinfo@3dsystems.com
www.3dsystems.com

Patti Brown
Special Events Manager

3D Systems provides solid imaging products and services that fabricate solid objects from digital input. This allows users to quickly turn 3D designs into 3D parts.

5D

Booth 1653

Guardian House, Borough Road
Godalming, Surrey GU7 2AE
UNITED KINGDOM
+44.1483.426421
+44.1483.419541 fax
sales@five-d.com
www.five-d.com

Karen Breedon
Channels Manager

5D demonstrates the extensive Monsters range of visual effects plug-ins, 3D shaders for Softimage, and new 3D visualization software linked to a motion control rig.

Accom, Inc.

Booth 517

1490 O'Brien Drive
Menlo Park, California 94025 USA
+1.650.328.3818
+1.650.327.2511 fax
info@accom.com
www.accom.com

Accom designs, manufactures, sells, and supports a complete line of digital video production, disk recording, editing, and ELSET virtual set systems for worldwide television production, post production, broadcasting, and computer video marketplaces.

Addison-Wesley

Booth 2165

One Jacob Way
Reading, Massachusetts 01867 USA
+1.781.944.3700
+1.781.942.3077 fax
chanda.leary@awl.com
www.awl.com/cseng/

Chanda D. Leary
Marketing Specialist

Addison-Wesley is a leading publisher of high-quality and timely information for programmers, developers, engineers, and system administrators. Our mission is to provide educational materials about new technologies and new approaches to current technologies written by the leading authorities.

Adobe Systems, Inc.

Booth 1601

345 Park Avenue
San Jose, California 95110 USA
+1.408.536.6000
+1.408.537.4031 fax
www.adobe.com

Founded in 1982, Adobe Systems is a leading provider of graphic design, publishing, and imaging software for Web and print production, and the second largest desktop software company in the world.

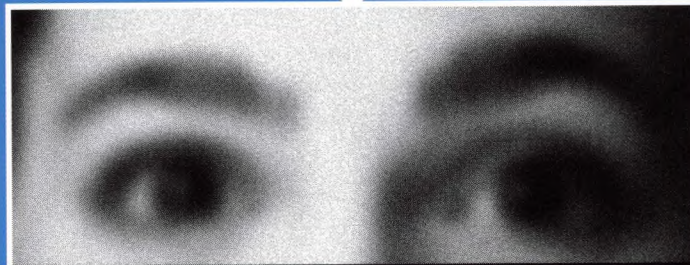
adsGallery.com/Portfolio.com Warp 10 Technologies

Booth 2625

9120 Leslie Street, Suite 101
Richmond Hill, Ontario L4B 3J9
CANADA
+1.905.763.9277
+1.905.763.1360 fax
support@adsgallery.com
www.adsgallery.com
www.portfolios.com

Mira Shemtov
Chief Creative Officer/Vice
President of Marketing

Warp 10 Technologies (NASDAQ: WARP), is proud to be presenting both adsGallery.com and Portfolios.com at SIGGRAPH. LOGIN - UPLOAD - SHOWOFF. We offer a FREE online showcase for great advertising and creative talent.



You'll be **SHOCKED** by our
GRAPHIC DEPICTIONS.

They're **SO EASY** to understand.

SUBSCRIBE NOW WWW.ADOBEMAG.COM

Adobe Magazine

Advanced Imaging Magazine

Booth 566

445 Broad Hollow Road
 Melville, New York 11747 USA
 +1.516.845.2700
 +1.516.845.2736 fax
 info@advancedimagingmag.com
 www.advancedimagingmag.com

Charles Grecky
 Publisher

Specifically designed to meet the needs of professionals using all forms of electronic imaging technologies. Offering "hands on" coverage of video/digital video, graphics, animation, photo, and document-based imaging technologies used for the capture, manipulation, display, output, storage, and transmission of images.

Advanced Media Production

Booth 1837

1250 Bellflower Boulevard
 UTC 113
 Long Beach, California
 90840-2802 USA
 +1.562.985.4352
 +1.562.985.5292 fax
 ampc@csulb.edu
 www.amp.csulb.edu

Shannon Peitzman
 Training Coordinator

Advanced Media Production at California State University, Long Beach offers continuing education programs on animation software from Alias|Wavefront, Softimage, Discreet, NewTek, and Autodesk. Facilities are also available for demo reel creation.

Advanced Rendering Technology

Booth 601

444 Castro Street, Suite 130
 Mountain View, California 94041 USA
 +1.650.254.7610
 +1.650.254.7615 fax
 info@art-render.com
 www.art-render.com

Nick Gross
 Sales Manager

RenderDrive: 3D. Animation. Visualization. Architecture. Virtual reality. Raytracing. Networked appliance. Hardware. Software. Integration. 3D Studio MAX/Viz. RenderMan. Speed. Image quality. Depth of field. Motion blur. Volumetrics. Soft shadows. Photorealism. Your creative opportunity.

Advanstar Digital Media Group

Booth 528.1927

201 Sandpointe Avenue
 Suite 600
 Santa Ana, California 92707 USA
 +1.714.513.8400
 +1.714.513.8612 fax
 ystifter@advanstar.com
 www.advanstar.com

Yvonne Stifter
 Marketing/Promotions Coordinator

Advanstar Digital Media Group is DCC Magazine and Post. DCC Magazine is the premier publication for high-end digital content creators. Post Magazine is the primary source for news, business, and technology trends of the dynamic post-production marketplace.

AFA Products Group, Inc.

Booth 227

100 Stonehurst Court
 Northvale, New Jersey 07647 USA
 +1.201.750.3200
 +1.201.750.3049 fax
 Bobh@afassoc.com
 www.afassoc.com

Bob Hemsley
 Director of Sales and Marketing

AFA Products Group, Inc. exhibits TRAX'IM, a computed solution to quick and easy isolation of selected objects over a sequence of frames for use as mattes or color correction windows.

AIST Inc.

Booth 253

P.O. Box 1890, 1927 Boblett Street
 Blaine, Washington 98231-1890 USA
 888.558.3348
 +1.604.669.6347 fax
 sales@aistinc.com
 www.aist.com

Peter von Tiesenhausen
 Vice President of Marketing

AIST demonstrates MoviePack, their new software developed to satisfy all your image processing, video compositing, editing, and motion graphics needs. Features include: real-time previews, unlimited layers, 3D effects, QPM, and AMT.

AJA Video

Booth 1767

433 Crown Point Circle
 Grass Valley, California 95945 USA
 +1.530.274.2048
 +1.530.274.9442 fax
 sales@aja.com
 www.aja.com

Bruce K. McGrew
 Sales & Marketing Manager

AJA VIDEO shows two high-definition products: the HD-NTV, which adds uncompressed SMPTE-292 digital video & key to a PCI computer, and the HD Serial Digital to SVGA/Component Converter.

A K Peters, Ltd.

Booth 1829

63 South Avenue
 Natick, Massachusetts 01760 USA
 +1.508.655.9933
 +1.508.655.5847 fax
 service@akpeters.com
 www.akpeters.com

Rebecca Howland
 Sales Manager

The latest in computer graphics titles: Real-Time Rendering (Tomas Möller and Eric Haines), AI for Computer Games and Animation (John David Funge), Graphica I and II (John Bonadies, editor), and more. Catch up with jgt (journal of graphics tools) and try your hand at graphics poetry.

Alias|Wavefront

Booth 1415.1631

210 King Street East
Toronto, Ontario M5A 1J7
CANADA
800.447.2542 (North America)
+1.978.466.7623 (International)
+1.416.369.6140 fax
info@aw.sgi.com
www.alias|wavefront.com

As the world's leading innovator of 2D and 3D graphics technology, Alias|Wavefront demonstrates the latest technology in advanced software for the film and video, games and interactive media, industrial design, and visualization markets.

Alien Skin Software

Booth 1910

1100 Haynes Street, Suite Zero
Raleigh, North Carolina 27604 USA
+1.919.832.4124
+1.919.832.4065 fax
michaelp@alienskin.com
www.alienskin.com

Michael Pilmer
Marketing Director

Alien Skin Software develops software that adds features to larger graphics applications. The company is located in Raleigh, North Carolina and distributes its products worldwide. Alien Skin has earned a reputation for practical, easy-to-use plug-ins. We will never wear suits.

Alpha Processor, Inc.

Booth 739

130 C Baker Avenue Extension
Concord, Massachusetts 01742
USA
+1.978.318.1185
+1.978.318.3177 fax
info@alpha-processor.com
www.alpha-processor.com

Bruce Bradshaw
Marketing Communications
Manager

Amazon/Interactive Effects

Booth 1659

P.O. Box 51270
Irvine, California 92619-1270 USA
+1.714.247.1200
+1.714.573.9424 fax
info@ifx.com
www.ifx.com

Scott Michelson
Director of Marketing

Piranha Visual Effects System - hardware graphics accelerated, resolution independent compositing/editing system for film/HDTV with integrated 2D/3D paintbox. Piranha features real-time uncompressed film/HDTV playback, and real-time tracking, stabilizing, and match moves.

Animation Magazine

Booth 957

30101 Agoura Court, Suite 110
Agoura Hills, California 91301 USA
+1.818.991.2884
+1.818.991.3773 fax
animagexec@aol.com
www.animag.com

Bill Buck
President & Publisher

The only international publication focusing on the global animation industry. Coverage includes television, feature, video, commercials, post-production, gaming, computer technologies, and schools. Each issue contains sections on career opportunities, animation markets, and production advances.

Anthro Corporation

Booth 2325

10450 Southwest Manhasset Drive
Tualatin, Oregon 97062 USA
800.325.3841
800.325.0045 fax
sales@anthro.com
www.anthro.com

Kim Faks
Marketing

AnthroCarts! Mobile, modular, and incredibly strong computer furniture for personal computers, engineering, and multimedia equipment. Lots of shapes, sizes, and accessories. Configure them exactly the way you want. AnthroCarts come with a lifetime warranty and ship within 24 hours!

Appian Graphics

Booth 2335

18047 Northeast 68th Street
Suite B-100
Redmond, Washington 98052 USA
+1.425.882.2020
+1.425.882.8618 fax
sales@appiangraphics.com
www.appiangraphics.com

Derek Hayes
Channel Manager

Appian Graphics is the leading supplier of multi-monitor solutions including the Jeronimo and Duet product lines and HydraVision, our patented display management software.

Applied Computer Solutions

Booth 355

17911 Sampson Lane
Huntington Beach, California
92647 USA
+1.714.861.2200
+1.714.842.8299 fax
www.acsacs.com

Sara Clow
Marketing Manager

ArchVision

Booth 2530

110 South Upper Street
Lexington, Kentucky 40507 USA
+1.606.252.3118 x 104
+1.606.381.1108 fax
rstevens@archvision.com
www.archvision.com

Featuring RPC software.

Arete Entertainment

Booth 524

5000 Van Nuys Boulevard
Suite 450
Sherman Oaks, California 91403
USA
+1.818.501.1045
+1.818.501.1196 fax
reid@arete.com
www.areteis.com

Reid Nicol
Director of Sales and Marketing

Arete Image Software (AIS) is the award-winning developer of Digital Nature Tools – tools that have been used in "Titanic," "Waterworld," and "The Truman Show." Arete Productions combines the talent and software that brought you the special effects in "Pleasantville."

ARRI

Booth 2001

Tuerkenstrasse 89
Munich 80809 GERMANY
+49.89.3809.1038
+49.89.3809.1432 fax
kwilland@arri.de
www.arri.de

Kris Willand
Marketing Manager

Artbeats Digital Film Library

Booth 1918

1405 North Myrtle Road, Unit 5
Myrtle Creek, Oregon 97457 USA
+1.541.863.4429
+1.541.863.4547 fax
lhollifield@artbeats.com
www.artbeats.com

Laura Hollifield
Office Manager

Artbeats is a leading provider of royalty-free stock footage for broadcast, desktop video, multimedia, and the Internet. Content includes pyrotechnic effects, water, backgrounds, clouds, concepts, landscapes, archival, and more.

ARTBYTE

Booth 2318

39 East 78th Street, Suite 501
New York, New York 10021 USA
+1.212.988.5959
+1.212.988.6107 fax
steven@artbyteonline.com
www.artbytemag.com

Steven Estok
Marketing/Advertising Director

ARTBYTE – The Magazine of Digital Culture – focuses on the creative aspects of new media, from innovations in industrial/graphic design and electronic music, to developments in hardware/software and Internet technologies.

The Art Institutes International

Booth 2412

300 Sixth Avenue
Pittsburgh, Pennsylvania
15222-2598 USA
+1.412.562.0900
+1.412.456.2305 fax
orrise@aii.edu
www.aii.edu

Erika Orris
Vice President of Marketing and Admissions

The Art Institutes International is a family of 16 post-secondary schools offering associate and baccalaureate programs in computer animation, culinary arts, fashion, graphic/industrial/interior design, multimedia and Web design, photography, video production, and online media and marketing.

ASC-American Cinematographer

Booth 1028

1782 North Orange Drive
Hollywood, California 90028 USA
+1.323.969.4333
+1.323.882.6391 fax
saul_molina@cinematographer.com
www.cinematographer.com

Saul Molina
Circulation Director

Visitors can obtain copies and subscriptions to AC magazine as well as special discounts on books published by us, including the ASC Film Manual, ASC Video Manual, Reflections. Leave a business card for daily drawings and prizes.

Ascension Technology Corporation

Booth 2000

P.O. Box 527
Burlington, Vermont 05402 USA
+1.802.893.6657
+1.802.893.6659 fax
ascension@ascension-tech.com
www.ascension-tech.com

Jack Scully
Vice President of Sales and Marketing

MotionStar Wireless – the world's most popular motion-capture tracker – animates DreamTeam characters in live and entertaining performance-animation skits. Learn about breakthrough advances that make MotionStar easier than ever to set up and use in all types of environments.

Atomic Power Corporation

Booth 1904

P.O. Box 231777
Encinitas, California 92023 USA
+1.760.516.9000
+1.760.516.9001 fax
tom@atomicpower.com
www.atomicpower.com

Tom Sullivan
Vice President Sales and Marketing

Atomic Power Corporation features Psunami 1.0, photorealistic ocean design technology seen in "Titanic," and Evolution 1.0 with z-space, a flocking particle system, and 3D explosions for Adobe After Effects.

ATTO Technology, Inc.

Booth 2331

40 Hazelwood Drive
Amherst, New York 14228 USA
+1.716.691.1999
+1.716.691.3724 fax
mkt@attotech.com
www.attotech.com

Lisa Setlik
Tradeshow Coordinator

Manufacturer of Fibre Channel and SCSI storage connectivity solutions. Since its founding in 1988, ATTO has been engineering award-winning solutions specifically for data-intensive digital video, multimedia, Enterprise IT, and Internet applications.

auto.des.sys, Inc.

Booth 623

2011 Riverside Drive
Columbus, Ohio 43221 USA
+1.614.488.8838
+1.614.488.0848 fax
marketing@formz.com
www.formz.com

Alexandra Yessios
Vice President of Sales and Marketing

form*Z is a 3D solid and surface modeler with drafting, photorealistic rendering, radiosity, walkthrough animation, and a full range of unique and state-of-the-art 3D modeling operations.

form•Z

3D FORM SYNTHESIZER

Visit
Booth #623



The Green Fly by Sharkawi Che Din.

University Malaysia Sarawak, Malaysia. ©1999 Sharkawi Che Din.

The most complete set of modeling tools for 3D design.

Sharkawi Che Din: "form•Z is a unique package that offers the tools artists need to build both mechanical and organic models within a short period of time. It allows the artist to concentrate on transferring ideas from conceptual sketches to 3D form with greater control over every aspect of the modeling process, such as cross-sections, control points, mesh density, and boolean operations. form•Z is the best multi-platform modeling package available, capable of producing high quality 3D models at a lower cost than the high-end applications running on SGI workstations."

3D solid and surface modeling software at its best, with
Visit us at www.formz.com to download a free demo.



photorealistic rendering, radiosity, and animation.
Call (614) 488-8838 or fax (614) 488-0848 for information.



Autologic Information International, Cinema Systems

Booth 419

1050 Rancho Conejo Boulevard
Thousand Oaks, California
91320-1794 USA
+1.805.376.5118
+1.805.376.5002 fax
jconnolly@autoiii.com
www.autoiii.com

Jim Connolly
Director of Sales and Marketing,
Cinema Systems

Autologic Information International, Cinema Systems is pleased to announce new pricing, faster speeds, and more capabilities for the LUX laser film recorder, plus new LUX rental plans.

Autonomous Effects Inc.

Booth 2414

1350 Pear Avenue, Suite B
Mountain View, California 94043
USA
+1.650.934.0131
+1.650.934.0132 fax

Monnett Soldo
President

Creators of SceneGenie, the match-box that does everything you need to merge CG effects with live action, and motion-capture based character animation as well! Interactive robotics, too!

AvatarMe Ltd.

Booth 447

South Bank Technopark
90 London Road
London SE1 6LN
UNITED KINGDOM
+44.207.922.8822
+44.207.922.8899 fax
info@avatarme.com
www.avatarme.com

Stephen Crampton
CEO

AvatarMe Ltd. is dedicated to pioneering the move towards photorealistic 3D Avatar interfaces on the Internet. At SIGGRAPH 99, they are generating photorealistic 3D Avatars of attendees using the "AvatarBooth."

Avid Technology

Booth 1447

1 Park West
Tewksbury, Massachusetts 01876
USA
+1.514.840.0299
+1.514.845.5676 fax
vfroment@softimage.com
www.avid.com

Veronique Froment
Public Relations Manager

Avid Technology, which acquired Softimage in 1998, is an international, industry-leading provider of digital audio and video tools for information and entertainment applications. Avid's products are used by customers worldwide including film, television and interactive content producers, TV news broadcasters, corporate communicators, and consumers.

B & H Photo-Video-Pro Audio

Booth 2347

420 Ninth Avenue
New York, New York 10001 USA
800.947.9910
800.947.9003 fax
provideo@bhphotovideo.com
www.bhphotovideo.com

Sales Department

B&H features a side-by-side "shoot-out" of 10 of today's latest DV, DVCAM, and DVCPR0 camcorders from Canon, Sony, and Panasonic. We also have the Canopus DV Rex-M1, a complete hardware and software solution for DV-based editing.

B & L Engineering

Booth 1967

3002 Dow Avenue
Tustin, California 92780 USA
+1.714.505.9492
+1.714.505.9492 fax
gus@bleng.com
www.bleng.com

Gus Lopez
Vice President

B & L Engineering is the exclusive distributor for the CODA mpx30 optical motion capture system. The real-time, non-tethered design of the CODA mpx30, offers superior flexibility, portability, resolution, and accuracy, making it a natural for motion capture.

Balboa Capital

Booth 1167

2010 Main Street, Suite 1150
Irvine, California 92614 USA
+1.949.756.0800
+1.949.553.8502 fax
info@balboacapital.com
www.balboacapital.com

Tyona Matz
Marketing Coordinator

Balboa Capital provides equipment leasing and financing for high-technology industries such as audio and video. Customers can get approved for up to \$100,000 by simply filling out a one-page credit application.

BARCO Projection Systems America

Booth 2025

3240 Town Point Drive
Kennesaw, Georgia 30144 USA
+1.770.218.3200
+1.770.218.3250 fax
sales.us.bps@barco.com
www.barco.com

Steven Barlow
Marketing Manager

BARCO is a global leader in high-performance large screen projection systems. BARCO's products utilize a diverse array of cutting-edge CRT, LCD, and DLP projection technologies to meet highly specialized customer requirements.

Baydel North America

Booth 328

2370 Bering Drive
San Jose, California 95131 USA
+1.408.383.7474
+1.408.432.1891 fax
markus@baydelna.com
www.baydel.com

Markus Harry
North American Inside Sales

Baydel RAIDS are a feature-rich RAID subsystem designed and manufactured by Baydel using state-of-the-art microprocessor, disk, and memory technology; displaying excellent reliability and incredible performance.

Be, Incorporated

Booth 827

800 El Camino Real, Suite 400
Menlo Park, California 94025 USA
+1.650.462.4113
+1.650.462.4129 fax
sylvie@be.com
www.be.com

Sylvie Pelapat
Marketing Communications/Public Relations Manager

The BeOS is an operating system that provides a rich user experience to people who handle high-bandwidth digital media, such as graphics, audio, and video in real time, on personal computers and Web devices.

Big Idea Productions, Inc.

Booth 853

168 North Clinton, 6th Floor
Chicago, Illinois 60661 USA
+1.312.669.1400
+1.312.669.1520 fax
cjackson@bigidea.com
www.bigidea.com

Charlotte Jackson
Animation Studio Administration

VeggieTales is the 3D computer animated series for kids that mixes Sunday morning values with Saturday morning fun.

Biomorph Interactive Desk

Booth 2418

11 Broadway, Room 1010
New York, New York 10004 USA
+1.212.809.4323
+1.212.809.4324 fax
biomorph@walrus.com

Stephen Barlow-Lawson
Owner and Design Director

A full range of ergonomic, height-adjustable computer desks and chairs for professional and home office use that complements the human body and allows more comfortable and healthful computing.

blaxxun interactive

Booth 2635

375 Alabama Street, Suite 415
San Francisco, California 94110 USA
+1.415.437.6160
+1.415.437.6170 fax
info@blaxxun.com
www.blaxxun.com

John Golden
Director of Marketing

blaxxun interactive is delivering today's most advanced products and solutions for building compelling communities and e-commerce venues on the Internet. Our community platform combines a multimedia interface with rich communication features so you can build visually striking 3D worlds.

Blue Sky Studios, Inc.

Booth 1567

One South Road
Harrison, New York 10528 USA
+1.914.381.8400
+1.914.381.9790 fax
www.blueskystudios.com

Linda Reilly
Assistant to the CEO

Blue Sky Studios, based in Harrison, New York, is an Oscar award-winning digital animation studio specializing in superior computer-generated character animation and effects for the motion picture, commercial, television, and entertainment industries.

Boris FX

Booth 2547

381 Congress Street
Boston, Massachusetts 02210 USA
+1.617.451.9900
+1.617.451.9916 fax
janicef@artelsoft.com
www.borifix.com

Janice Fahey
Director of Marketing

Boris FX develops integrated tools that enable 2D artists and editors to work in an added dimension. Boris RED is a sophisticated compositing and effects tool; Boris AE is a complete plug-in solution, and Boris FX is a 3D DVE and effects plug-in.

BOXX Technologies, Inc.

Booth 233

9421 Neils Thompson Drive
Austin, Texas 78758 USA
+1.512.835.0400
+1.512.835.0434 fax
todd@boxxtech.com
www.boxxtech.com

Todd Bryant
President/CEO

BOXX Technologies is a cutting-edge developer and manufacturer of high-performance, high-bandwidth Windows NT-based workstations and rendering technology for 3D animation, game development, film, and HDTV post production and non-linear editing.

Caligari Corporation

Booth 629

1959 Landings Drive
Mountain View, California 94043 USA
+1.650.390.9600
+1.650.390.9755 fax
sales@caligari.com
www.caligari.com

Aimee Jones
Marketing Director

Caligari Corporation, creators of the award winning 3D authoring package trueSpace, will be showing the latest version. The only 3D authoring program that is "born to accelerate," trueSpace is filled with high-end features and is the only package with a true immersive 3D user interface.

Cambridge University Press

Booth 2315

40 West 20th Street
New York, New York 10011-4211
USA
+1.212.924.3900
+1.212.691.3239 fax
marketing@cup.org
www.cup.org

James Murphy
Exhibits Manager

Visit Cambridge's booth and see Melhorn and Naher's "LEDA: A Platform for Combinatorial and Geometric Computing," O'Rourke's "Computational Geometry in C, 2nd edition," and Wolfram's "The MATHEMATICA Book, Version 4."

CamSys, Inc.

Booth 2434

1223 Peoples Avenue
Troy, New York 12180 USA
+1.518.276.4082
+1.518.276.6380 fax
nastasia@camsysinc.com
www.camsysinc.com

Leighann Nastasia

ShadowBox is a PC-based automatic 3D scanner. It uses natural light, a CCD video camera, and a motorized turntable to capture object surfaces. Its accuracy is 10 to 50 microns.

Catalogic

Booth 1067

990 Richard Avenue, Suite 103
Santa Clara, California 95050 USA
+1.408.486.0800
+1.408.486.0809 fax
sales@catalogic.com
www.catalogic.com

Scott Messing
Sales Manager

Publish your content on compact disc! Catalogic offers DVD and CD-ROM manufacturing and packaging, plus short-turnaround CD-ROM duplication and silkscreening.

Cebas Computer

Booth 2303

Lilienthalstr. 19
Eppelheim 69214 GERMANY
+1.816.525.0103
+1.816.525.1594 fax
info@cebas.com
www.cebas.com

Jim Lammers
President of Trinity

Cebas Computer showcases the latest plug-ins for 3D Studio MAX, Maya, and trueSpace. Plug-in demonstrations include: ProOpticSuite, LumaObject, PyroCluster, MatterWaves, ScalpelMAX, RayMAX, and Anthrosop.

CELCO

Booth 1801

10291A Trademark Street
Rancho Cucamonga, California
91730 USA
+1.909.481.4648
+1.909.481.6899 fax
mike@celco.com
www.celco.com

Michael Constantine
President

Only the CELCO EXTREME NITRO advanced digital color motion picture film recorder can expose 5244 color intermediate stock and 5245 camera negative stock directly to 16mm, 35mm, and 65mm formats.

Charles River Media

Booth 1936

403 VFW Drive, P.O. Box 417
Rockland, Massachusetts 02370
USA
+1.781.871.4184
+1.781.871.4376 fax
jlniles@aol.com
www.charlesriver.com

Jenifer Niles
Director of Marketing/Executive Editor

Come see our newest titles on Maya, form-Z, ElectricImage, 3D Games and Comics, and more. Receive a 20% discount and enter to win a free copy of Animation:Master 99.

Ciprico

Booth 529

2800 Campus Drive
Plymouth, Minnesota 55441 USA
+1.612.551.4000
+1.612.551.4002 fax
sales_inquiry@ciprico.com
www.ciprico.com

Sue Leenerman
Director of Marketing

Ciprico demonstrates several high-performance storage solutions including FibreSTORE RAID Systems, complete end-to-end fibre channel storage solutions combining Ciprico's award-winning FibreSTORE JBOD Disk Arrays with FibreSTORE RAID Controllers.

Cogswell Polytechnical College

Booth 451

1175 Bordeaux Drive
Sunnyvale, California 94089 USA
+1.408.541.0100
+1.408.747.0764 fax
www.cogswell.edu

Paul A. Shreivogel
Director, Marketing/Recruitment

Cogswell Polytechnical College is a small, prestigious digital arts and engineering institution that has recognized that the fast-changing global economy demands a strong focus on personalized life-long education and careers that encompass a silicon future.

Would You Paint Blindfolded?



Painting a masterpiece is a lot easier when you can see your canvas!

• **3D MODELING** on the computer is a lot easier when you can feel your work.

• With **FreeForm**, a powerful new way to create 3D MODELS, sculptors and designers can use their sense of touch while modeling on the computer.

• Hands-on quick start classes begin on the hour in the SensAble booth. The finest creation will **win a complete FreeForm system** valued at over \$20K, including an IBM IntelliStation®.

SensAble
TECHNOLOGIES
Booth #1101

IntelliStation
Booth #1231

3
SYSTEMS
Booth #501

SensAble Technologies • Booth # 1101

Communication Arts

Booth 2268

P.O. Box 10300
Palo Alto, California 94303 USA
+1.650.326.6040
+1.650.326.1648 fax
subscription@commarts.com
www.commarts.com

Michael Krigel
General Manager

Get inspired! Get Communication Arts, the world's top visual communication magazine. CA showcases cutting-edge work in graphic design, advertising, illustration, photography, and interactive design. It's the essential resource for creative professionals.

Compaq Computer Corporation

Booth 1431

20555 SH 249
Houston, Texas 77070 USA
800.OK.COMPAQ
www.compaq.com

Compaq Computer Corporation, a Fortune Global 100 company, is the second largest computer company in the world and the largest global supplier of computer systems. Compaq develops and markets hardware, software, solutions, and services, including industry-leading enterprise computing solutions.

CompuPlus Inc.

Booth 2551

130 McCormick Avenue, Suite 106
Costa Mesa, California 92626 USA
+1.714.438.1100
+1.714.438.1106 fax
sales@compuplusinc.com
www.compuplusinc.com

Michael S. Murray
President

CompuPlus Inc., is an authorized SGI reseller. We specialize in custom-configured SGI systems, storage products to include RAID systems, disk arrays, tape libraries, memory enhancements, and fibre channel storage for SGI, Sun, HP, and NT systems.

Computer Graphics Systems Development Corporation

Booth 905

2483 Old Middlefield Way
Suite 140
Mountain View, California 94043 USA
+1.650.903.4920
+1.650.967.5252 fax
pcheng@cgsd.com
www.cgsd.com

P.Y. Cheng
Vice President of Marketing

CGSD produces custom virtual reality systems for research, training, and entertainment. It also publishes Real Time Graphics and sells texture tools and patterns, automatic database software, and head-mounted displays.

Computer Graphics World

Booth 2147

98 Spit Brook Road
Nashua, New Hampshire 03062
USA
+1.603.891.9425
+1.603.891.9492 fax
shughes@pennwell.com
www.cgw.com

Susan Hughes
Marketing Manager

Computer Graphics World, a monthly publication of visual computing, highlights the newest technologies for film, broadcast TV, video, interactive entertainment, and CAD/CAM. SIGGRAPH 99 Special: Free subscriptions available at booth 2147.

Computer Publishing Group

Booth 1851

1340 Centre Street
Newton Center, Massachusetts
02459 USA
+1.617.641.9101
+1.617.641.9102 fax
circulation@cpg.com
www.cpg.com

Melanie DeCarolis
Promotions Manager

Computer Publishing Group publishes Server/Workstation Expert (formerly SunExpert), the largest magazine for server-based computing solutions. It covers business and technical trends for network managers. Subscriptions are free.

Consensys Corporation

Booth 2623

35 Riviera Drive
Markham, Ontario L3R 8N4
CANADA
+1.905.940.2900
+1.905.940.2903 fax
bob@consensys.com
www.consensys.com

Vas Rajevski
Vice President of Sales

RAIDZONE disk arrays employ Ultra ATA/66 drives and a direct PCI bus architecture to support data streaming rates in excess of 100 MB/s at less than half the cost of slower SCSI-based disk arrays.

The Coriolis Group

Booth 532

14455 North Hayden Road
Suite 220
Scottsdale, Arizona 85260 USA
+1.602.483.0192
+1.602.483.0193 fax
info@coriolis.com
www.coriolis.com

Deanna Gogol
Tradeshow/Event Coordinator

The Coriolis Group is a publishing leader in the computer technologies field. Coriolis offers a multitude of titles such as certification, programming, operating systems, and graphic design.

Crater Software

Booth 719

1550 Metcalfe, Suite 1500
Montréal, Québec H3A 1X6
CANADA
+1.514.284.7771
+1.514.284.4847 fax
melissa@cratersoftware.com
www.cratersoftware.com

Melissa Thibodeau
Sales and Marketing Assistant

Crater Software is a developer and facilitator of animation software for the film and television production sector. Flagship product, CTP, provides the full package of tools for the post-paper production of 2D cel animation.

Creation Engine LLC

Booth 407

3980 Fabian Way
Palo Alto, California 94303 USA
+1.650.843.0650
+1.650.843.0598 fax
info@creationengine.com
www.creationengine.com

Charles Lai
President

Academic prices on graphics, multimedia, Web, and 3D software from Adobe, Hash, Kinetix, Macromedia, MetaCreations, Microsoft, NewTek, Softimage, and Strata.

Creative Planet

Booth 2652

4146 Lankershim Boulevard
Suite 210
North Hollywood, California 91602
USA
+1.818.623.9260
+1.818.623.7857 fax
news@creativeplanet.com
www.creativeplanet.com

John Valenti
Vice President, Business
Development

Creative Planet is a Web-based news and information service for digital content creators.

CYBELIUS Software, Inc.

Booth 2032

111 North Market Street
Suite 1000-10
San Jose, California 95113 USA
+1.408.971.1800
+1.408.971.1802 fax
sales@cybelius.com
www.cybelius.com

Marja Murray
Marketing Manager

CYBELIUS Software develops and markets leading-edge virtual reality tools based on the VRML standard. CYBELIUS products enable users to create interactivity in 3D virtual products for use in professional Internet markets.



Unprecedented Creation
of Full-Length CG
Feature Films

FINAL FANTASY®

Opportunities:

Modeling
Texture
Lighting
Tech Support
Editorial
Compositing

Visit us at SIGGRAPH '99
booth #2458

Send your reel & resume to:

SQUARE USA, INC.
55 Merchant St., #3100
Honolulu, HI 96813

Fax: 808-535-9100
Email: hr@squareusa.com

SQUARE®
www.squareusa.com

© 1999 Square USA, Inc. All rights reserved.

Square and FINAL FANTASY are registered
trademarks of Square Co., Ltd.

Cyberware

Booth 1915

2110 Del Monte Avenue
 Monterey, California 93940 USA
 +1.831.657.1450
 +1.831.657.1494 fax
 steve@cyberware.com
 www.cyberware.com

Stephen Addleman
 Vice President

3D scanners that capture both the shape and color of the human body or design models. Scan objects for animation, special effects, simulation, research, and design. Resulting meshes can be intelligently reduced, combined, and translated for a wide variety of uses.

Cycore Computers

Booth 1017

Dragarbrunnsgatan 35
 Uppsala 75320 SWEDEN
 +46.18.656560
 +46.18.656566 fax
 info@cycore.com
 www.cycore.com

Nils Schneider

Cult3D: Multi-platform, high-quality, real-time interactive 3D technology for the Web. Cult Effects: CE Paint, for the first time, allows painting directly on movies within After Effects.

Cyra Technologies

Booth 2451

8000 Capwell Drive
 Oakland, California 94621 USA
 +1.510.633.5000x260
 +1.510.633.5009 fax
 o.destandau@cyra.com
 www.cyra.com

Olivia Destandau
 Marketing Communications
 Manager

Cyrax is a portable, PC software and auto-scanning laser system that measures, visualizes, and models large structures and sites with an unprecedented combination of speed, completeness, and accuracy.

DataDirect Networks

Booth 2227

9201 Oakdale Avenue
 Chatsworth, California 91311 USA
 +1.818.700.7600
 +1.818.700.7601 fax
 sales@datadirectnet.com
 www.datadirectnet.com

DataDirect Networks breaks down the barriers between data and creativity with premier data sharing software; SANshare, SANDs, and CDNA, each fully integrated with a fibre channel network SAN storage solution.

Dell Computer Corporation

Booth 1159

One Dell Way
 Round Rock, Texas 78682 USA
 800.825.9911
 www.dell.com/products/workstat

Dell offers a variety of solutions for digital content creators – from pre-press to 3D-animation and video. Our Precision 210, 410, and 610 are certified and tested on your software, including 3D Studio MAX.

Desktop Engineering Magazine

Booth 510

174 Concord Street
 Peterborough, New Hampshire
 03458 USA
 +1.603.924.9631
 +1.603.924.4004 fax
 www.deskeng.com

Desktop Engineering magazine focuses on the latest hardware and software for engineers, including CAD, data analysis, PDM, and data acquisition. Stop by the Desktop Engineering booth and pick up a free copy of the August issue.

Desktop Images

Booth 536

1805 West Magnolia Boulevard
 Burbank, California 91506 USA
 +1.818.841.8980
 info@desktopimages.com
 www.desktopimages.com

Cheryl Olson
 Sales & Marketing

Desktop Images produces high-quality instructional videotapes for software and hardware products, such as NewTek's LightWave 3D & Aura, Adobe Photoshop, and Adobe After Effects. Desktop Images now offers 56+ titles for professional graphic artists.

Digibotics, Inc.

Booth 2353

2800 Longhorn Boulevard
 Suite 104
 Austin, Texas 78758 USA
 +1.512.832.6544
 +1.512.832.1163 fax
 jeff@digibotics.com
 www.digibotics.com

Jeff Koch
 Vice President of Sales

Digibotics, Inc. manufactures Digibot 3D laser digitizing systems. We offer contract scanning, CAD, and 3D modeling services. Digibot's are automated 3D coordinate input devices based on patented technology and advanced operation software.

DigiEffects

Booth 1811

1806 Congressional Circle
 Austin, Texas 78746 USA
 +1.512.306.0779
 +1.512.306.1310 fax
 info@digieffects.com
 www.digieffects.com

Dan Prochazka
 Director of Marketing

DigiEffects is a cutting edge software company specializing in effects and plug-ins for Adobe After Effects, Avid, and Discreet Logic Advance Systems. DigiEffects' flagship product is CineLook - Make Your Video Look Like Film.

Digimation, Inc.

Booth 2200

107 Mallard Street, Suite D
 St. Rose, Louisiana 70087 USA
 +1.504.468.7898
 +1.504.468.5494 fax
 sold@digimation.com
 www.digimation.com

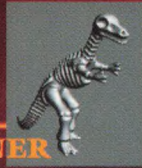
LaVina Larkey
 Vice President

Digimation products include the latest plug-ins for 3D Studio MAX R3, RETAS Pro - the number one 2D ink and paint system and NeMo, a revolutionary 3D content development tool.

Your 3D scanning technology source. . .



MODEL 15 DESKTOP SCANNER



MINI MODEL SHOP HIGH RESOLUTION 3D COLOR SCANNER



fast
ACCURATE
High Resolution
DESIGN



thru slices



MODEL-SHOP 3D COLOR SCANNER



Courtesy of Wildlife Court

Reverse Engineering

medicine

animation

complete hardware & software solutions
ergonomics



HEAD & FACE 3D COLOR SCANNER



Courtesy of Colleen Cruise

entertainment

fashion

www.headus.com



WHOLE BODY
3D COLOR SCANNER

try different clothes on Tammy at our Booth #1915 or our website



<http://www.cyberware.com> • email: info@cyberware.com

831-657-1450

2110 Del Monte Avenue, Monterey, CA 93940

Cyberware™

Digital Domain, Inc.

Booth 2014

300 Rose Avenue
Venice, California 90291 USA
+1.310.314.2800
+1.310.314.2888 fax
digitalhiring@d2.com
www.d2.com

Laurence Plotkin
Director of Human Resources and
Recruitment

Digital Domain is a world leader in the creation of visual effects for features ("What Dreams May Come," "Titanic," "The Fifth Element"), commercials, music videos, location-based entertainment, and CD-ROM productions.

Digital Firepower

Booth 2167

P.O. Box 2937
Hollywood, California 90078 USA
+1.323.467.9438
+1.323.467.9099 fax
info@digitalfirepower.com
www.digitalfirepower.com

Melissa Darby
Matte Effects Producer

Digital Firepower is a premier digital matte painting company providing world-class matte effects for the film industry. Digital Firepower has boutique studios in both Hollywood and London.

Digital Hollywood Institute of Media Arts

Booth 1475

1315 3rd Street Promenade
3rd Floor
Santa Monica, California 90401 USA
+1.310.899.9377
+1.310.899.9307 fax
joe@dhima.com
www.dhima.com

Joe Cloninger
Director

Digital Hollywood in Japan and Digital Hollywood Institute of Media Arts (dhima) in Santa Monica, California make up the largest 2D/3D school system in the world.

Digital Immersion Software Corporation

Booth 617

1360 Kellylake Road
Sudbury, Ontario P3E 5P4
CANADA
+1.705.522.7991
+1.705.522.0709 fax
admin@digital-immersion.com
www.digital-immersion.com

Brian G. Fleury
Vice President

Digital Immersion Software Corporation develops the much-anticipated 3D modeling, animation, and rendering software, Merlin 3D. We're launching Merlin 3D for the first time at SIGGRAPH 99. Be the first to see the latest in high-speed real-time 3D for the desktop PC.

Digital Juice

Booth 225

474 South Pin Oak Place
Suite 106
Longwood, Florida 32779 USA
800.525.2203; +1.407.788.5376
+1.407.788.2435 fax
info@digitaljuice.com
www.digitaljuice.com

Dave Hebel
President

Digital Juice creates CD-ROM graphic libraries for both Presenters and Video Producers. Each library includes a broad range of royalty-free graphics and works with any presentation software or non-linear video editing system.

Digits 'n Art Software inc.

Booth 1375

305 West de la Commune
Suite 100
Montréal, Québec H2Y 2E1
CANADA
+1.514.844.8448
+1.514.844.8844 fax
info@DnAsoft.com
www.DnAsoft.com

Marcel Achard
Sales/Marketing Manager

D'nA provides innovative solutions for the 3D character animation market. Reaching beyond the ordinary, we create efficiency-oriented tools such as flesh 3D paint and LIFEsorce, a complete (face, body, hands, and audio) motion capture and animation system.

Dimension 3D-Systems GmbH

Booth 2404

Vahrenwalder Strasse 7
Hannover 30165 GERMANY
+49.511.935.77.00
+49.511.935.77.09 fax
info@dimension-3d.com
www.dimension-3d.com

Thomas Nacken
Director of Sales & Marketing

DISC, Incorporated

Booth 1855

372 Turquoise Street
Milpitas, California 95035 USA
+1.408.934.7000
+1.408.934.7007 fax
sandrade@discjuke.com
www.discjuke.com

Suzy Andrade
Marcom Coordinator

DISC's family of storage libraries for 5.25-inch optical and CD-ROM are used as storage for Web servers or animation archives. Options include a media management system and fibre channel connectivity.

Discreet

Booth 2029

10 Duke Street
Montréal, Québec H3C 2L7
CANADA
+1.514.393.1616
+1.514.393.0110 fax
info@discreet.com
www.discreet.com

Roula Idriss
Public Relations Specialist

Discreet develops systems and software for visual effects, editing, 3D animation, and production used in the creation of digital moving pictures for video, HDTV, the Web, broadcast graphics, interactive games, and feature films.

In case you hadn't noticed,

The Digital Video Revolution is Picking up Speed.

Keeping up with the latest tools and technologies, figuring out which tools are best for your projects and getting up to speed on them in record time—these are challenges that require stamina, focus, and more than a little talent. *And* the right information sources.

***Digital Video* is your all-purpose pit stop. Fuel up today!**



The Vehicle of Choice
for Keeping Pace with a Fast Growing Market

Digital Video
DV

Digital Video
DV THE DIGITAL VIDEO
CONFERENCE & EXPOSITION
www.dvexpo.com

Digital Video
DV
LIVE

For More Information and Your Complimentary Copy of *Digital Video*, Visit Booth #1035.
www.dv.com

DPS (Digital Processing Systems Inc.)

Booth 1001

11 Spiral Drive
 Florence, Kentucky 41042 USA
 +1.606.371.5533
 +1.606.371.3729 fax
 sale-US@dps.com
 www.dps.com

Jane Perratt
 Marketing and Communications
 Manager

DPS showcases a wide range of products designed specifically for the compositing and animation markets, including the launch of a new digital disk recorder which is certain to become an industry standard.

DVS Digital Video, Inc.

Booth 247

4444 Riverside Drive, Suite 102
 Burbank, California 91505 USA
 +1.818.846.9444
 +1.818.846.7444 fax
 info@digitalvideosystems.de
 www.digitalvideosystems.de

Peter Spoer
 President

DVS offers a comprehensive line of uncompressed and compressed video servers, DDRs, Still&Clip Stores, and PCIbus I/O boards for DTV and HDTV applications in digital post production, broadcast, and computer-video.

Dynamic Graphics

Booth 2363

6000 North Forest Park Drive
 Peoria, Illinois 61614 USA
 +1.309.687.0155
 800.488.3492 fax
 behrends@dgusa.com
 www.dgusa.com

Bob Behrends
 National Trade Show Manager

Dynamic Graphics offers three high-quality, royalty-free art services and a library of over 40,000 digitized images, plus royalty-free stock photography and stock video. We have show specials!

Dynamic Realities

Booth 530

1900-A Pewaukee Road
 Waukesha, Wisconsin 53188 USA
 +1.414.549.2200
 +1.414.549.2225 fax
 andy@dynamic-realities.com
 www.dynamic-realities.com

Andy Frerking
 President

Dynamic Realities is the largest plug-in distributor for Newtek's award-winning 3D animation system LightWave 3D. Dynamic Realities introduces several new products that have been redesigned to take advantage of the new LightWave version 6.

ELSA, Inc.

Booth 819

2231 Calle De Luna
 Santa Clara, California 95054 USA
 +1.408.919.9100
 +1.408.919.9120 fax
 www.elsa.com/america

Jennifer McVey
 Marketing Event Manager

ELSA leads in OpenGL graphics acceleration, offering more than just boards. Through the ELSA Software Advantage, take advantage of our unique drivers and utilities to achieve maximum 2D/3D graphics performance.

Elsevier Science

Booth 961

655 Avenue of the Americas
 New York, New York 10010 USA
 +1.212.633.3758
 +1.212.633.3758 fax
 www.elsevier.com

Sandra Pierre-Lys
 Exhibits Coordinator

Ensemble Designs

Booth 552

P.O. Box 993
 Grass Valley, California 95945 USA
 +1.530.478.1830
 +1.530.478.1832 fax
 info@endes.com
 www.ensembledesigns.com

Cindy Zuelsdorf
 Director of Sales and Marketing

Ensemble Designs creates digital video products that are used in broadcast and post-production facilities around the world. Products include: digital switchers and keyers, video graphics I/O for computers, networkable frame-buffers, TBC remotes, frame syncs, and video converters.

Evans & Sutherland

Booth 1247

600 Komas Drive
 Salt Lake City, Utah 84108 USA
 +1.801.588.1000
 +1.801.588.4551 fax
 jmitchel@es.com
 www.es.com

Joan Mitchell
 Manager, Advertising and
 Collateral; Acting Manager,
 Public Relations

Evans & Sutherland provides visual system products for graphics, education, training, and entertainment applications. E&S products are used for professional workstation graphics, visualization, large format theater, virtual sets, and training simulation.

Exabyte Corporation

Booth 2537

1685 38th Street
 Boulder, Colorado 80301 USA
 800.774.7172
 800.445.7736 fax
 sales@exabyte.com
 www.exabyte.com

Exabyte Corporation is a leading supplier of network backup systems for the data-intensive application and database server markets. Exabyte designs and manufactures industry-leading data storage products including tape drives, automated tape libraries, and premium quality media.

Ex'pression Center for New Media

Booth 1966

6601 Shellmound Street
Emeryville, California 94608 USA
+1.510.654.2934
craig@xnewmedia.com
www.xnewmedia.com

Craig W. Deonik
Director of Marketing

Teaching digital visual media and sound arts using an intensive, 14-month curriculum and high-end equipment and platforms. A private, post-secondary school whose graduates emerge ready to work in a wide variety of coveted global positions in media, arts, and high technology.

Eyetrionics

Booth 454

Kapeldreef 60
Heverlee 3001 BELGIUM
+32.16.298343
+32.16.298319 fax
desi.vanrintel@eyetrionics.com
www.eyetrionics.com

Desi Vanrintel
Marketing Manager

Eyetrionics specializes in fast and flexible 3D-acquisition technologies, such as the ShapeSnatcher 3D Toolkit, a powerful toolkit that turns your camera into a high-quality 3D-acquisition device.

Fakespace, Inc.

Booth 339

241 Polaris Avenue
Mountain View, California 94043 USA
+1.650.688.1940
+1.650.688.1949 fax
sales@fakespace.com
www.fakespace.com

Jeffrey Brum
Marketing Manager

Fakespace, Inc. is a leading developer of visualization systems, from the BOOM stereoscopic display to a new range of intuitive input and projected visualization systems including WorkBenches and Immersive WorkRooms.

FAMOUS Technologies

Booth 2639

Suite 111, 1750 Montgomery Street
San Francisco, California 94111 USA
+1.415.835.9445
+1.415.954.7199 fax
zac@famoustech.com
www.famoustech.com

Zac Jacobs
Vice President Marketing

FAMOUS Faces is a facial animation system, which allows animators to use an actor's performance to animate lipsync and facial expressions from a live or recorded performance, using motion capture or video. Available in NT for Maya, Softimage, Max, and LightWave.

FORE Systems, Inc.

Booth 1932

1000 Fore Drive
Warrendale, Pennsylvania 15086 USA
+1.724.742.4444
+1.724.742.7700 fax
info@fore.com
www.fore.com

Susan Hayden
Event Manager

FORE Systems is a leading global supplier of Application Aware networking solutions designed to handle the networked applications of today and tomorrow. We offer increased capacity, flexibility, scalability, and reduced complexity.

Fraunhofer CRCG, Inc.

Booth 1900

321 South Main Street
Providence, Rhode Island 02903 USA
+1.401.453.6363
+1.401.453.0444 fax
lkarle@crcg.edu
www.crcg.edu

Lars B. Karle
Vice President

Fraunhofer CRCG researchers study the role of 3D computer graphics and interactivity in the areas of digital security technology, scientific and medical visualization, collaborative global environments, and information appliances.

Fujitsu Takamisawa America, Inc./ITU Research, Inc.

Booth 457

250 East Caribbean Drive
Sunnyvale, California 94089 USA
+1.408.745.4900
+1.408.745.4971 fax
marcom@fta.fujitsu.com
www.fujitsu.takamisawa.com

Bruce DeVisser
Product Marketing Manager

Introducing the 3D DomePoint, a new kind of 3D input device – the first desktop input device that permits multiple finger-gesture manipulation of objects in 3D computer graphics. The device allows direct, intuitive manipulation of 3D objects and improves the user interface to 3D software.

Gentle Giant Studios, Inc.

Booth 2047

1115 Chestnut Street
Burbank, California 91506 USA
+1.818.557.8681
+1.818.557.8684 fax
cr.gentlegiant@usa.net
www.gentlegiantstudios.com

Christina Rivera
Studio Director

Gentle Giant combines computer-based 3D digital scanning, modeling, and rapid prototyping technologies with traditional sculpting, molding, casting, and painting skills to create prototypes of toys, premiums, collectibles, and other licensed products.

Geometrix, Inc.

Booth 937

124 Race Street
San Jose, California 95126 USA
+1.408.999.7498
+1.408.289.8258 fax
myronr@geometrixinc.com
www.geometrixinc.com

Myron Rosmarin
Marketing Manager

Geometrix demonstrates its breakthrough 3D scanning products that enable users to easily and rapidly reconstruct real world objects and scenes into fully-textured 3D models compatible with all major 3D programs.

GESTEL

Booth 1261

Viale dell' Oreficeria 30/P
Vicenza 36100 ITALY
+39.0444.991100
+39.0444.991108 fax
info@gestel.it
www.gestel.com

Alex Mazzardo
Managing Director

solidThinking Rel. 3.5, the breakthrough 3D environment. Advanced NURBS/polygonal modeling, exclusive parametric tools, construction history, state-of-the-art rendering (scan-line, raytracing, radiosity, RenderMan). Easy data transfer from/to animation programs including 3D Studio MAX, LightWave, and Maya.

Giant Studios

Booth 2647

768 Marietta Street, Suite 203
Atlanta, Georgia 30318 USA
+1.404.659.6611
+1.404.659.6612 fax
rand@giantstudios.com
www.giantstudios.com

Rand Cabus
Director of Marketing

GigaPixel Corporation

Booth 611

2350 Mission College Boulevard
Suite 800
Santa Clara, California 95054 USA
+1.408.654.8005
+1.408.654.9123 fax
henry@gigapixel.com
www.gigapixel.com

Henry Choy
Director, Sales and Marketing

GigaPixel licenses 3D hardware and software intellectual property (IP). GigaPixel provides IP cores for integration of our customer's final product. PCs, set top boxes, game consoles, information appliances, and other emerging markets require 3D technology.

Global Majic Software, Inc.

Booth 1926

6767 Old Madison Pike Highway
Suite 405
Huntsville, Alabama 35806 USA
800.3D.MAJIC
+1.256.922.0708 fax
gms@globalmajic.com
www.globalmajic.com

Stuart McCafferty
Vice President

New product launched at
SIGGRAPH 99: 3DLinX

Gnomon, Inc. School of Visual Effects

Booth 2359

1015 North Cahuenga Boulevard
Suite 5430i
Hollywood, California 90038 USA
+1.323.466.6663
+1.323.466.6710 fax
admin@gnomon3d.com
www.gnomon3d.com

Kristin Bierschbach
Director of Administration

School of visual effects that specializes in 3D computer graphics and animation for individuals, professionals, and production studios. Extension classes, industry-approved certificate program, custom training on Alias|Wavefront software.

Grande Vitesse Systems

Booth 2219

390 Fremont Street
San Francisco, California 94105 USA
+1.415.777.0320
+1.415.777.9544 fax
kevin@gvsnet.com
www.gvsnet.com

Kevin Young
Director of Marketing

GVS is showcasing the GVS 9000ves (video editing system), the Metropolis3500vas media server, the NomadicV Redundant RAID system, Digital Asset Management (DAM), and All-new GVS SAN. GVS solutions: real powerful, real safe, real time.

Hash Inc.

Booth 511

2800 East Evergreen Boulevard
Vancouver, Washington 98661 USA
+1.360.750.0042
+1.360.750.0451 fax
hash@hash.com
www.hash.com

Marshall Hash
President

Hash's storytelling powerhouse, Animation Master 99, is recognized as the most approachable, affordable, completely patch-based modeling, animation, and rendering application available for Windows, NT, and Macintosh.

Hewlett-Packard

Booth 1637

3404 East Harmony Road
Fort Collins, Colorado 80528 USA
+1.970.898.3917
+1.970.898.0369 fax
carol_ross@hp.com
www.hp.com/visualize

Carol Ross
Marcom Project Manager

It's the toughest job of your life. HP Visualize and HP Kayak personal workstations have amazingly fast graphics, and they're powerful and reliable. It's your reputation...HP workstations... reliable performance.



HP VISUALIZE
PERSONAL WORKSTATIONS

Within you is a world
of ideas that can be
realized with the

power
to VISUALIZE



Starting at \$3,600 (including a 19" monitor)

Within you is the power to visualize - empower yourself with HP VISUALIZE Personal Workstations' leading edge technology, performance and value.

HP's breakthrough fx+ graphics deliver the world's fastest application performance with Intel processors on Windows NT®. The VISUALIZE Personal Workstation features single or dual Intel® Pentium® III or Pentium® III Xeon™ processors up to 550MHz, and ECC SDRAM scalable to 2GB.

Beyond leadership graphics performance, HP bundles innovations for easy, single-point system administration and system diagnostics to maintain and protect your investment.

With HP's leadership in technology, performance and value, the answer is clear. HP's VISUALIZE Personal Workstations are the Ultimate Design Machines – engineered so you can push the limits of 3D design and animation.

For more information visit: www.hp.com/visualize

HP VISUALIZE
PERSONAL
WORKSTATIONS

THE **ULTIMATE** DESIGN MACHINE



Intel, the Intel Inside logo, and Pentium are registered trademarks, and Pentium III Xeon is a trademark of the Intel Corporation.

Get your Free CD with
Models and Textures at Siggraph 99!

Bring this coupon by
the Hewlett-Packard Booth #1637
for your FREE CD with
New Models from 3D Cafe's
Award Winning DCC site.

www.3dcafe.com

The Hollywood Reporter

Booth 2650

5055 Wilshire Boulevard
Los Angeles, California 90036 USA
+1.323.525.2043
+1.323.525.2371 fax
lflamholtz@hollywoodreporter.com
www.hollywoodreporter.com

Laurie Flamholtz
New Media/Interactive Visual
Effects Account Manager

Edited for professionals working in the industry worldwide and including comprehensive coverage includes the latest news developments in television, cable, technology, interactive, music, and theater, as well as box office grosses, film and TV production charts, and entertainment finance.

Hypercosm Inc.

Booth 458

1212 Fourier Drive
Madison, Wisconsin 53717 USA
+1.608.821.0500 x 101
+1.608.821.0505 fax
lfrancis@hypercosm.com
www.hypercosm.com

Carol-Lee Nelson
Marketing

Featuring software for the creation of 3D images.

I.A.T.S.E. Local 16

Booth 2168

240 Second Street
San Francisco, California 94105
USA
+1.415.441.6400
+1.415.243.0175 fax
eddier@local16.org

Eddie Raymond
Vice President

IBM

Booth 1231

3039 Cornwallis Road
Research Triangle Park,
North Carolina 27709 USA
800.426.4968
www.ibm.com/intellistation

IBM features its industry-leading NT graphics workstation, the IntelliStation, showcasing tools for film, video, and game production. Come see why the IntelliStation is taking the industry by storm.

ICE

Booth 1047

460 Totten Pond Road
Waltham, Massachusetts 02451
USA
+1.781.768.2300
+1.781.768.2301 fax
sales@iced.com
www.iced.com

JoAnn Brien
Marketing Programs

ICE showcases 'On ICE' products: Adobe After Effects, Media 100, and Avid 'On ICE' - each with over 120 superfast special effects filters, "look of film" processing, color correction tools, and innovative visual treatments from within these popular compositing and NLE applications.

ID8 Media

Booth 1914

731 Market Street, Suite 520
San Francisco, California 94103
USA
+1.415.495.3930
+1.415.495.4970 fax
sunil@id8media.com
www.id8media.com

Sunil Dhir
President

ID8 Media specializes in tools, services, and training that allow film, broadcast, advertising, gaming, and architectural firms to create state-of-the-art films, games, commercials, kiosks, and 3D interactive virtual space.

I.D. Magazine

Booth 2424

116 East 27th Street
New York, New York 10016 USA
800.284.3728
+1.513.531.2690 x 296
+1.513.531.1025 fax
www.idonline.com

Bev Yuellig
Special Events Manager

I.D. is the International Design Magazine, showcasing the newest and best products, environments, and graphics being created by the world's foremost designers. I.D. is news and analysis of the art, culture, and business of design.

IEEE Computer Society

Booth 1024

10662 Los Vaqueros Circle
Los Alamitos, California
90720-1314 USA
+1.714.821.8380
+1.714.821.4010 fax
membership@computer.org
www.computer.org

Marian Anderson
Advertising Supervisor

One of the most prestigious professional associations in the world, IEEE serves its members through numerous publications, conferences, and workshops. Membership information, magazines, and books are on display. A representative from IEEE is also on hand to offer a special membership discount.

IMAGICA Corporation

Booth 2153

5301 Beethoven Street, Suite 101
Los Angeles, California 90066 USA
+1.310.306.4180
+1.310.306.2334 fax
products@lab.imagica.co.jp
www.ise.imagica.co.jp

Koji Ichihashi
General Manager

IMAGER3000V scans 4K digital images from motion picture film. Mamoe, 3D Match Move, combines CGI to live footage. SpeedRender, a plug-in. Shader/Metaball to SOFTIMAGE3D. Revival, auto-mated scratch/dirt remove solution.

THE HOLLYWOOD REPORTER®

Welcomes you to SIGGRAPH!

Animation Update

Border Crossing

Companies once dependent upon the domestic market must find international partners to survive.

BY HARVEY DENROFF

7 In domestic animation market, the industry has undergone a radical transformation in the past few years due to the rise of computer-generated animation and the rise of the Internet. The industry has seen a shift in the way it produces and distributes its content. Companies once dependent upon the domestic market must find international partners to survive.

Web World

Rave New World

The Web offers animators an environment that lets their imaginations run wild.

BY MELISSA J. PERENON

7 In the past few years, the Web has become a new medium for delivering content, and it's changing the way animators think about their work. The Web offers animators an environment that lets their imaginations run wild.

Festival

Same Time Next Year

Anney — the premiere animation festival — is now an annual event.

BY HARVEY DENROFF

7 The 20th Anney Festival, the premiere animation festival, will be held in Los Angeles on September 28-30. The festival will feature a variety of animation-related events, including a competition, a convention, and a festival.

NO ONE COVERS ANIMATION LIKE WE DO

The global entertainment market is increasing its demand for new product and creating more opportunities than ever for today's industry professional.

That's where The Hollywood Reporter comes in. Read by over 140,000 industry professionals around the world, The Hollywood Reporter delivers the most comprehensive entertainment news coverage available to help you make informed, intelligent decisions.

You'll also get our industry-famous film and TV production charts, U.S. and foreign boxoffice grosses, coverage of trends and technology, as well as Special Issues including Animation, Animation Celebration Special, International/MIPCOM, Careers in Animation and much more.

SUBSCRIBE TODAY!

Supplement your hard copy subscription with daily visits to our Web site for free news summaries
www.hollywoodreporter.com

QUESTIONS? READY TO ORDER?

In Europe call: 44-171-323-6686
All other areas call: (323) 525-2151

IMAGINA-INA

Booth 2026

4, avenue de l'Europe
Bry sur Marne 94360 FRANCE
+33.1.49.83.26.93
+33.1.49.83.31.85 fax
imagina@ina.fr
www.ina.fr/INA/imagina/

IMAGINA, a major European rendezvous for CG professionals (papers and panels, workshops, animation festival, industrial exhibition), is dedicated to the advancement of computer graphics and its applications to industry, cinema, and games. 31 January - 2 February 2000 in Monaco, 2-4 February 2000 in Monaco.

Imagination in Motion

Booth 456

Leuvensesteenweg 290
St. Stevens, Woluwe 1932
BELGIUM
+32.2.721.49.55
+32.2.721.49.57 fax
info@iim.be
www.iim.be

Eric Verbeeck
Vice President

IIM is a leading European digital entertainment company, integrating development of state-of-the-art technology and creation of original computer animated projects, such as filmed, interactive, and online entertainment.

IMAS Publishing Group

Booth 1666

5827 Columbia Pike, Third Floor
Falls Church, Virginia 22041 USA
+1.703.998.7600
+1.703.998.2966 fax
ssubramanya@imaspub.com
www.imaspub.com

Shibani Subramanya
Assistant Marketing Manager

IMAS Publishing Group produces: TV Technology, the leading publication for professional video equipment buyers, and Pro Video Review, the video production industry's only dedicated product review publication.

Immersion Corporation

Booth 2239.2339

2158 Paragon Drive
San Jose, California 95131 USA
+1.408.467.1900
+1.408.467.1901 fax
info@immerse.com
www.microscribe.com

David Hague
Director of Sales and Marketing

MicroScribe 3D provides a low-cost, fast, accurate, and reliable method for creating 3D computer models from physical objects. Trace contours of any physical object and create models directly in software programs such as 3D Studio MAX, SolidWorks, Alias, AutoCAD, and others.

Industrial Light & Magic

Booth 1760

P.O. Box 2459
San Rafael, California 94912 USA
+1.415.448.2100
www.ilm.com

ILM Recruiting

At George Lucas' Academy Award-winning visual effects facility, artists and software developers have pushed the envelope of digital technology. ILM is looking for the best digital artists, software developers, and systems support to contribute their talents to groundbreaking projects.

Infinite Pictures, Inc.

Booth 2023

33 Northwest First Avenue, Suite 1
Portland, Oregon 97209 USA
+1.503.221.2449
+1.503.221.2172 fax
info@smoothmove.com
www.smoothmove.com

Gerry Hunt
Vice President of Sales and Marketing

Infinite Pictures offers the next level of visualization - proprietary software and hardware that enables users to create interactive spherical images, objects, and movies using computer graphics, photographs, and video streams.

Inscriber Technology Corporation

Booth 2262

180 King Street South, 3rd Floor
Waterloo, Ontario N2J 1P8
CANADA
+1.519.570.9111
+1.519.570.9140 fax
info@inscriber.com
www.inscriber.com

Douglas Grant
Marketing Coordinator

Inscriber Technology develops the INSCRIBER line of open system-based character generators and digital graphics tools for the television broadcast and video post-production industries. At SIGGRAPH 99, see the latest real-time videographic tools developed for the SGI.

InSpeck inc.

Booth 1861

3530 Boulevard St-Laurent
Suite 303
Montréal, Québec H2X 2V1
CANADA
+1.514.284.1101
+1.514.284.1108 fax
inspeck@inspeck.com
www.inspeck.com

Jay-Jay Roboz
Marketing Director

InSpeck inc. is a manufacturer and developer of color optical 3D digitizers and 3D modeling software specializing in the field of digitizing real objects, particularly living beings, as well as the full human body.

IntelliStation M Pro
with Windows NT®

price

from \$2,359*
monitor not included

speed

up to two Pentium® III processors
550mhz / up to 1gb ram
IBM® Fire GL1¹ / Intense 3D graphics

options

21" crt monitor (19.8" viewable)
256mb ecc sdram
cd read / write drive

creative

You're in the hot seat. It's time to create. Time to direct. Time you don't have. Unless you have the IntelliStation M Pro. Load it with accelerated graphics solutions like IBM Fire GL1, the first 256 bit graphics accelerator, and you'll have time to do everything. Visit www.ibm.com/intellistation or call 800 426 7255, ext. 4217.

e-business tools

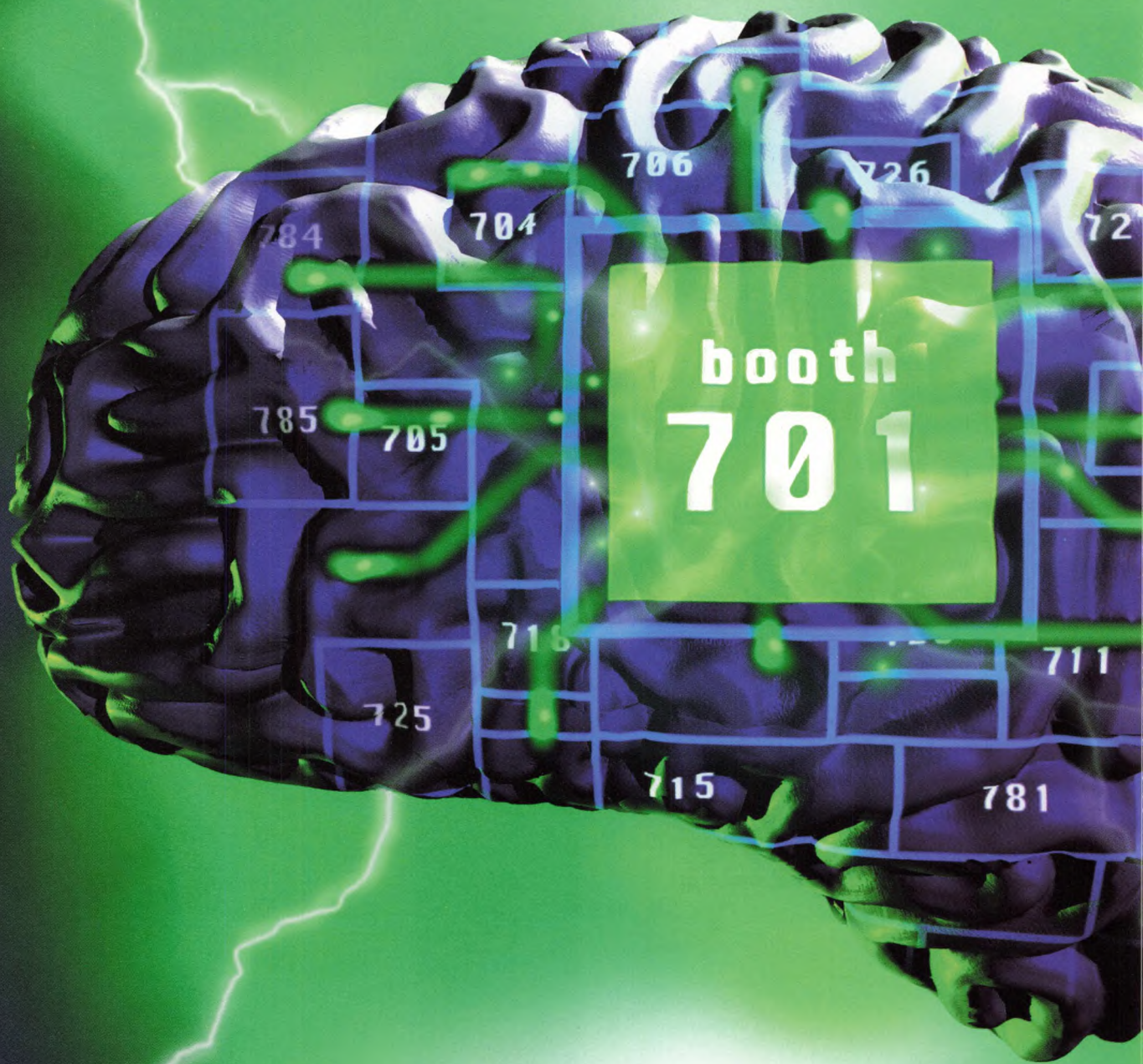


creative.director

IBM



*Estimated reseller price for model 6889/63U. Actual prices may vary. MHz refers to microprocessor speed; other factors can affect performance. ¹Fire GL1 is a trademark of Diamond Multimedia Systems, used under license. PCs referenced in this ad include an operating system. IBM product names are trademarks of International Business Machines Corporation. Adelta's Bubble Chair by Eero Aarnio, Finland. Tel. 49-(0) 2064-40797, Adelta@t-online.de, www.adelta.de. Microsoft, Windows and Windows NT are trademarks of Microsoft Corporation. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. © 1999 IBM Corp. All rights reserved.



Where to find
3-D graphics that will
blow your mind.



The Intel 3-D theater at Booth 701.

It's an amazing stereoscopic 3-D presentation showcasing some of the industry's hottest digital artists. A truly memorable experience, made possible by the mind-boggling power of the Intel® Pentium® III Xeon™ processor. But that's just part of a stunning sensory overload. You can also test-drive the latest high-performance workstations in a hands-on workshop featuring tutorials on leading 3-D animation and effects software. Visit Booth 701 to experience how the power of the Intel Pentium III Xeon processor lets you quickly create what you imagine. It won't just open your eyes. It will blow your parietal lobe.*

intel®

Intel Corporation

Booth 701

2800 Center Drive
DuPont, Washington 98327 USA
+1.253.371.8080
leo.wojnar@intel.com
www.intel.com

Leo Wojnar

Intel's Pentium III Xeon processor can help make your ideas come to life. Experience this awesome performance in Intel's theatre and at our hands-on workshop, and see first-hand why Intel Pentium III Xeon processor-based workstations are your best choice for digital content creation.

Intergraph Computer Systems

Booth 547

One Madison Industrial Park
Huntsville, Alabama 35894-0001 USA
800.763.0242
www.intergraph.com/ics

Intergraph Computer Systems showcases its Intel/Windows NT-based HD system capable of streaming 1080I or 720P format video or multiple streams of standard definition video. Intergraph also shows its latest 3D ViZual Workstations and expanded turnkey solutions.

International Cinematographers Guild & International Cinematographer Magazine

Booth 1571

7715 Sunset Boulevard, Suite 100
Los Angeles, California 90046 USA
+1.323.876.0160
+1.323.878.1162 fax
cameramag@aol.com
www.cameraguild.com

Jessica Sitomer
Member Services

Featuring information on joining, and staff is on hand to answer your questions. Our members work nationwide in film, video, television, commercials, music videos, documentaries, digital, CGI, etc. Our award-winning publication, International Cinematographer Magazine, is available for subscription.

International Fine Arts College

Booth 437

1737 North Bayshore Drive
Miami, Florida 33132 USA
800.225.9023
+1.305.374.5933 fax
admissions@ifac.edu
www.ifac.edu

Karl Lutgens
Associate Dean

InterSense, Incorporated

Booth 1947

73 Second Avenue
Burlington, Massachusetts 01803 USA
+1.781.270.0090; 888.FLY.THURU
+1.781.229.8995 fax
adamb@isense.com
www.isense.com

Adam N. Bosnian
Vice President of Marketing

InterSense is the leader in precision motion tracking solutions that enable computers to see and understand motion in 3D worlds. InterSense products, including the IS-900, IS-600, IS-300, and InterTrax are the new standard in motion tracking.

Intertec Publishing

Booth 1825

9800 Metcalf
Overland Park, Kansas 66212 USA
+1.913.967.1304
+1.913.967.1898 fax
www.intertec.com

Deborah Wiggins
Marketing Event Planner

Your education and information source for the video and entertainment industries. Video Systems magazine - tools, techniques and technologies for the creative video professional; Millimeter - the magazine of motion picture and television production; and Broadcast Engineering - the journal of digital television industries.

ISLIP Media, Inc.

Booth 1853

925 Liberty Avenue
Pittsburgh, Pennsylvania 15222 USA
+1.412.288.9910
+1.412.288.9905 fax
info@islip.com
www.islip.com

Molly Spore
Marketing Specialist

ISLIP Media is the leading developer of software, systems, and services to create searchable media sites (video and audio focused Web sites). With ISLIP's MediaSite System, video becomes as searchable as text.

JLCooper Electronics

Booth 2231

142 Arena Street
El Segundo, California 90245 USA
+1.310.322.9990
+1.310.335.0110 fax
sales@jlcooper.com
www.jlcooper.com

Chuck Thompson
Vice President/General Manager

JLCooper Electronics designs and manufactures a range of control, synchronization, interfacing, and automation products for professional audio, video, and multimedia markets. JLC products are sold through distributors and dealers worldwide.

Journey Education Marketing

Booth 1960

1325 Capital Parkway, Suite 130
Carrollton, Texas 75006 USA
800.874.9001
+1.972.245.3585 fax
sales@journeyed.com
www.journeyed.com

Allan Fischler
Director of Marketing

Journey is a nationally authorized academic software reseller, offering students and educators the ability to purchase popular software at up to 75% off the commercial SRP. Thousands of software programs available from Kinetix, Alias|Wavefront, Softimage, Adobe, Macromedia, MetaCreations, Corel, and more.

KAYDARA

Booth 2411

4428, St-Laurent Boulevard
Suite 300
Montréal, Québec H2W 1Z5
CANADA
+1.514.842.8446
+1.514.842.4239 fax
info@kaydara.com
www.kaydara.com

Julie Barrette
Channel Manager

Kaydara's FiLMBOX is a real-time production system, incorporating an advanced suite of animation, motion capture, and interactive rendering tools, and designed for use both at content creation time and playback time.

Kingston Technology Company

Booth 1647

17600 Newhope Street
Fountain Valley, California 92708
USA
+1.714.435.2600
+1.714.435.2699 fax
natalie_ross@kingston.com
www.kingston.com

Natalie Ross
Trade Show Manager

The world's leading independent manufacturer of memory products for workstations, personal computers, and laser printers has over 5,000 products and over \$1 billion in annual sales. In addition, Kingston offers high-quality storage enclosures that include seven year warranty/free technical support.

Knowledge Industry Publications

Booth 1946

701 Westchester Avenue
White Plains, New York 10604 USA
+1.914.328.9157
+1.914.328.9093 fax
jeff.hartford@kipi.com
www.kipinet.com

Jeff Hartford
Circulation Director

Complimentary magazine subscriptions to AV Video, Multimedia Producer, and Film & Video Magazine. Written for the creative professional involved in production of videos, films, TV broadcasts, commercials, games, Web sites, corporate communications, marketing presentations, training, medical, and education.

LambSoft, Inc.

Booth 1921

2429 Nicollet Avenue
Minneapolis, Minnesota 55404 USA
+1.612.872.1700; 800.535.5117
+1.612.879.5776 fax
info@lambsoft.com
www.lambsoft.com

Rafina Larsen
Controller

LambSoft designs, develops, and supports software tools for creation of high-quality and high-volume 3D character animation. Our products solve a range of problems related to performance motion capture.

Leader Instruments Corporation

Booth 2627

380 Oser Avenue
Hauppauge, New York 11778 USA
+1.516.231.6900
+1.516.231.5295 fax
fisher@leaderusa.com
www.leaderusa.com

Joe Fisher
Product Marketing Manager

New Video Encoder model LT 1606 with our RGB generator outputs: HDTV, NTSC, and PAL formats with outputs for composite, Y/C, GBR, and YPbPr (1080I/P, 720P, 480P) modes. Windows-based software offers programming raster parameters and custom test patterns via RS-232C control.

LEGASYS International

Booth 1933

510 Compton Street
Broomfield, Colorado 80020 USA
+1.303.469.6114
+1.303.469.4699 fax
dennis@legasys.com
www.legasys.com

Dennis Wolf

LEGASYS International supplies a full line of Ultra SCSI disk drives, DLT, DAT, and AIT tape drives, memory upgrades, CD-ROMS, and CD-Recorders, Network Attach RAID Arrays, fibre channel RAID Arrays, and high-end DLT and AIT tape library storage.

Lenticular Development Inc.

Booth 1560

570 Central Avenue, Building G
Lake Elsinore, California 92530
USA
+1.909.471.0468
+1.909.471.0478 fax
cservice@lenticulardevelopment.com
www.lenticularsoftware.com

Sean McDonald
President

Lenticular Development Inc. introduces the world's first lenticular software for the purpose of creating and printing lenticular 3D and animated "hardcopies" using any desktop or large format printer.

Lightwave Communications

Booth 1030

261 Pepe's Farm Road
Milford, Connecticut 06460 USA
+1.203.878.9838
+1.203.874.0157 fax
sales@lightwavecom.com
www.lightwavecom.com

Peter Henderson
Vice President of Sales and Marketing

Come see the new extension kit for Digital Flat Panel Displays. Lightwave is also exhibiting the latest technology in matrix switching and extension kits. Products shown include the Matrix-Hub, video, keyboard/mouse, and serial and audio matrix switch.

LightWork Design

Booth 439

78 Clarkehouse Road
Sheffield S10 2DL
UNITED KINGDOM
+44.114.266.8404
+44.114.266.1383 fax
alison@lightwork.co.uk
www.lightwork.com

Alison Abbott
Marketing Executive

LightWork Design unveils its new Kazoo family of software and services at SIGGRAPH 99. Kazoo provides users with an interactive 3D experience and the ability to produce artistic imagery in styles such as charcoal, cartoon, and oil paint.

Linker Systems, Inc.

Booth 518

13612 Onkayha Circle
Irvine, California 92620 USA
877.489.3525 Sales
800.315.1174 Corporate
+1.949.552.6985 fax
linker@linker.com
www.linker.com

David Harrison

Animation Stand is a high-end, 2D broadcast/film quality computer-assisted animation and FX production system, including multi-plane camera, ink and paint, film opticals 2D/3D digital compositing, and transport control.

LIPSinc.

Booth 959

110 MacKenan Drive, Suite 300A
Cary, North Carolina 27511 USA
+1.919.468.7005
+1.919.468.8330 fax
mailto:helpy@lipsinc.com
www.lipsinc.com

Mike Helpingstine

LIPSinc. Ventriloquist for MAX, and LIPSinc. Mimic for Poser, are breakthrough software tools for animators that automate the complex process of lip synching.

LogiCad3D Inc., A Logitech Company

Booth 1125

41758 Christy Street
Fremont, California 94538 USA
+1.510.659.8000
+1.510.659.8828 fax
susanne.gomez@logicad3d.com
www.logicad3d.com

Susanne Gomez
Marketing Communications
Manager

MAGELLAN 3D Motion Controller is an input device used for manipulating 3D objects running on UNIX and PC platforms. The device allows the user to pan, zoom, and rotate models quickly and easily.

MacAcademy/Windows Academy

Booth 2454

100 East Granada Boulevard
Ormond Beach, Florida 32176 USA
+1.904.677.1918; 800.527.1914
+1.904.677.6717 fax
davidd@floridamkt.com
www.windowsacademy.com
www.macacademy.com

David W. Dean
Sales Manager

MacAcademy/Windows Academy produces training videos and CD-ROMs for Macintosh and Windows software. The CD-ROMs and videos are available in the booth, or call 800.527.1914.

Management Graphics, Inc.

Booth 1909

1401 East 79th Street
Minneapolis, Minnesota 55425 USA
+1.612.854.1220
+1.612.851.6159 fax
info@mgi.com
www.mgi.com

John Tuvey
Marcom Specialist

MGI's digital film recorders feature award-winning technology used to image digital effects in over 200 motion pictures. See the professional-level Solitaire Gemini and the Solitaire Cine V.

MathEngine Inc.

Booth 321

580 Howard Street, Suite 404
San Francisco, California 94105 USA
+1.415.495.1738
+1.415.495.1739 fax
michelle.nelson@mathengine.com
www.mathengine.com

Michelle Nelson
Manager of Marketing
Communications

The MathEngine SDK, a toolkit for modeling physical systems for 3D environments, is demonstrated in an interactive simulation game with rich physics built using the MathEngine SDK and a general framework built in Java.

Matrox

Booth 1135

1055 St. Regis Boulevard
Dorval, Québec H9P 2T4 CANADA
+1.514.685.2630
+1.514.685.2853 fax
video.info@matrox.com
www.matrox.com

The Matrox DigiSuite product family offers hardware and software tools to make your Windows NT workstation the ideal platform for professional real-time nonlinear editing, compositing, 3D animation recording, and DVD authoring.

Maxon Computer, Inc.

Booth 317

566 St. Charles Drive, Suite 2
Thousand Oaks, California 91360 USA
877.2ANIMATE
+1.805.494.0718
+1.805.494.0719 fax
info-usa@maxon.net
www.maxon.net

Paul Babb
President/CEO

Developers of Cinema 4D, a powerful, completely integrated 3D modeling, animation and rendering program for Windows95/98/NT, Macintosh, and AlphaNT (XL). Three versions: GO (entry-level), SE (print artists), and XL (production animation).

MBNA America

Booth 2450

9 West 57th Street, 50th Floor
New York, New York 10019 USA
+1.212.407.2839
+1.212.407.2148 fax

Julie Markowitz
Direct Promotions Coordinator

MDI Ltd.

Booth 668

3rd Floor, 30/31 Islington Green
London N18DU
UNITED KINGDOM
+44.1712268585
+44.1712268586 fax

Angela Kilkenny

Measurand Inc.

Booth 2267

921 College Hill Road
Fredericton, New Brunswick
E3B 6Z9 CANADA
+1.506.462.9119
+1.506.462.9095 fax
robin@measurand.com
www.measurand.com

Robin Palmer
Business Development Assistant

Measurand's 3D fiber optic curvature sensors, placed directly on objects (human or inanimate) and requiring no extra space, translate shape and motion into computer images and control signals.

Medea Corporation

Booth 324

31826 Village Center Road
Suite C
Westlake Village, California 91361
USA
+1.818.597.7645
+1.818.597.7643 fax
sales@medeacorp.com
www.medeacorp.com

Roger S. Mabon
Director of Marketing

Medea demonstrates its new high-end VideoRaid RT desktop and rack-mount disk arrays for digital content creation. VideoRaid RT sustains 55 MB/second on Mac OS, Windows NT, and SGI systems.

Media 100 Inc.

Booth 2008

290 Donald Lynch Boulevard
Marlboro, Massachusetts 01752
USA
+1.508.460.1600
+1.508.624.9384 fax
www.media100.com

Mike Weitz
Marketing Manager

Broadcast standard video systems for editing and finishing animations and graphics: Finish for Windows NT, Media 100 for Macintosh, and PowerGrade for Windows NT and Macintosh. New ShakeVideo adds advanced compositing and effects.

MediaFORM

Booth 2431

400 Eagleview Boulevard
Suite 104
Exton, Pennsylvania 19341 USA
+1.610.458.9200
+1.610.458.9554 fax
h.stauffer@mediaform.com
www.mediaform.com

Hope Stauffer
Marketing

MediaFORM, the leader in CDR duplication, has developed the most extensive line of manual and autoloading CDR duplicators available today. MediaFORM has a reputation as a quality manufacturer. This has been refined by developing economical and efficient quality products through leading-edge technology.

MediaPEGS

Booth 347

2861 Seattle Drive
Los Angeles, California 90046 USA
+1.323.850.5802
+1.323.850.5804 fax
info-pegs@mediapegs.com
www.mediapegs.com

Youriy Iliev
Director of International Sales

PEGS is a 2D animation production system running on SGI and NT platforms. PEGS software digitizes the entire post-paper animation production process from scanning to recording. Used in more than 45 studios around the world, with over 1000 hours of series and five features produced to date.

MetaCreations Corporation

Booth 1719

6303 Carpinteria Avenue
Carpinteria, California 93013 USA
+1.805.566.6200
+1.805.566.6385 fax
www.metacreations.com

Teresa Bridwell
Vice President, Corporate Communications

MetaCreations Corporation, the creative Web company, provides visualization communication technologies and software to accelerate the ability of graphic artists to create 2D, 3D, and photorealistic graphics for the Web.

MetaStor Storage Solutions

Booth 2521

3718 North Rock Road
Wichita, Kansas 67226-1397 USA
+1.316.636.8000
+1.316.636.8889 fax
info@metastor.com
www.metastor.com

Mike Tenhulzen
Marketing Communication Assistant

MetaStor S-Class Storage: Capacity up to 5.0 TB per cabinet, fibre channel performance ideal for SANs, uninterrupted data access with dual I/O paths and redundant components.

Microboards Technology

Booth 2317

1721 Lake Drive West
Chanhassen, Minnesota 55317 USA
+1.612.556.1600
+1.612.556.1620 fax
calconjr@microboards.com
www.microboards.com

Chuck Alcon, Jr.
Vice President of Sales

DVD video authoring solutions for the Windows NT and SGI platforms. Featuring the DVD AuthorSuite package with encoding technology from Zapex, DVD recorders from Pioneer, and authoring software from Intec, this package is cost effective and easily integrated into most PC or SGI machines.

Miller Freeman, Inc.

Booth 1035

600 Harrison Street
San Francisco, California 94107
USA
+1.415.905.2200
+1.415.905.2232 fax
www.mfi.com

Producers of an expanding reach of publications such as 3D, DV, Dr. Dobb's Journal, Game Developer, Performance Computing, Software Development, and Cadence. Articles focus on the latest technologies and practical applications. Complimentary issues and subscriptions are available.

Minicomputer Exchange, Inc.

Booth 1956

610 North Pastoria Avenue
Sunnyvale, California 94086 USA
+1.408.733.4400
+1.408.733.8009 fax
www.mce.com

Oho J. Lehrack
General Manager

Since 1973, Minicomputer Exchange has sold refurbished workstations. We currently sell Sun and SGI products and peripherals, with a six-month warranty. We offer depot maintenance repair and replacement programs.

Minolta Corporation

Booth 2211

101 Williams Drive
Ramsey, New Jersey 07446 USA
888.473.2656; +1.201.818.3517
+1.201.934.4642 fax
vivid@minolta.com
www.minolta3d.com

Marty Chader
Sales Manager

Introducing a new concept in non-contact 3D scanners – the VIVID 700. Using an eight-step zoom lens and a laser light source, this high-speed, portable, color digitizing system scans objects and outputs 3D polygonal geometry plus color image files.

Miranda Technologies Inc.

Booth 523

2323 Halpern
St. Laurent, Québec H4S 1S3
CANADA
+1.514.333.1772
+1.514.333.9828 fax
amersale@miranda.com
www.miranda.com

Darin Crosby
Director of Sales, The Americas

SDI.LINK – a versatile i.LINK (IEEE 1394) to SDI/AES interface. Aquila Upconverter for HDTV applications. PicoLink miniature encoders, decoders, and converters. Kaleido, ICP-S NT v.3.0, and imaging series also shown.

MMS Multi Media Systems

Booth 247

Krepenstrasse 8
Hannover D-30165 GERMANY
+49.511.678070
+49.511.630070 fax
info@multimediasystems.de
www.multimediasystems.de

Peter Spoer
Vice President/Managing Director

MMS provides a comprehensive line of uncompressed and compressed video servers, DDRs, Still&Clip Stores and PCibus I/O boards for DTV and HDTV applications in digital post production, broadcast, and computer-video.

Morgan Kaufmann Publishers, an Imprint of Academic Press

Booth 2038

340 Pine Street, Sixth Floor
San Francisco, California 94104-3205 USA
+1.415.392.2665
sdean@mkp.com
www.apnet.com/

Sheri Dean
Marketing Manager

Publisher of the finest technical information resources for computer and engineering professionals. We publish in book and digital form about: databases, computer networking, computer systems, human-computer interaction, computer graphics, multimedia information and systems, artificial intelligence, and software engineering.

Motion Analysis Corporation

Booth 2437

3617 Westwind Boulevard
Santa Rosa, California 95403 USA
+1.707.579.6500
+1.707.526.0629 fax
info@motionanalysis.com
www.motionanalysis.com

Tom Whitaker
President/CEO

HiRes Motion Capture Systems: The world's first real-time optical motion capture systems. We are the world's largest manufacturer of optical motion capture systems for film, television, Web, and video games. Our systems are made specifically for film and animation with the Falcon Camera, for up to 32 camera systems.

The Motion Factory, Inc.

Booth 2020

39300 Civic Center Drive
Suite 240
Fremont, California 94538 USA
+1.510.505.5151
+1.510.505.5150 fax
info@motion-factory.com
www.motion-factory.com

Gray Norton
Senior Product Manager

Interactive 3D animation for games and the Web. Develop next-generation 3D games or dynamic 3D sites using the technology chosen by Interplay, Red Orb, Infogrames, and other industry leaders.

Top Producers.

Technology savvy professionals in creative fields turn to these Miller Freeman media products for information.

Power Users.

Relentless in their search for new tools, technology and services, they continually upgrade, buy the latest applications, and utilize the most powerful systems money can buy.

Influencers.

The product choices made by *Digital Video*, *3D*, and *Game Developer* subscribers set the industry standards. If these professionals know you, you are known in the industry.

Find them here:



www.dv.com

Miller Freeman Game Group

www.mfgame.com



www.3d-design.com



www.dvexpo.com



www.3dshow.com

Miller Freeman

Reaching Creative Technologists
See us at Booth #1035

MUSE Technologies, Inc.

Booth 1025

1601 Randolph Southeast
Suite 210
Albuquerque, New Mexico 87106
USA
+1.505.843.6873
+1.505.711.9123 fax
info@musetech.com
www.musetech.com

Steve Sukman
Director of Communications

MUSE Technologies develops and markets multisensory-application development products that let WindowsNT and UNIX users visualize, analyze, and share large and diverse forms of data using sight, sound, and touch.

NAB2000-The Convergence Marketplace

Booth 767

1771 North Street, NW
Washington, District of Columbia
20036 USA
800.342.2460; +1.202.429.4194
+1.202.429.5343 fax
register@nab.org
www.nab.org/conventions/

Lori Smith
Marketing Manager

NAB2000, April 8-13 in Las Vegas, will feature 1,400+ exhibitors and 150+ sessions covering the converging digital media industries from new media, production/post production, and Internet to film, broadcasting, and telecommunications.

NASA Tech Briefs

Booth 2436

317 Madison Avenue
New York, New York 10017 USA
+1.212.490.3999
+1.212.986.7864 fax
www.nasatech.com

Joseph Pramberger
Publisher

The premier monthly magazine serving over 200,000 design and manufacturing engineers and managers, with exclusive first publishing rights to NASA's best new technologies offering "down-to-earth" commercial applications. Free subscription available.

National Animation et Design Centre

Booth 1766

335, Boulevard de Maisonneuve
East, Suite 300
Montréal, Québec H2X 1K1
CANADA
+1.514.288.3447
+1.514.288.5799 fax
info@nad.qc.ca
www.nad.qc.ca

Isabelle Marazzani
Marcom Manager

The National Animation and Design Center (NAD Centre) offers comprehensive training programs in computer graphics imagery and provides authorized training on Softimage|3D, Softimage|DS, Effects/Discreet Logic, and Kaydara's FILMBOX.

New Riders Publishing (Formerly Macmillan)

Booth 931

201 West 103rd Street
Indianapolis, Indiana 46290 USA
+1.317.817.7385
ksturjeon@mcp.com
www.newriders.com

Kourtnaye Sturgeon
Director of Marketing

New Riders – creating books and resources for professionals that inspire, motivate, and support the daily creative quest. Spend some time getting to know us at www.newriders.com.

NewTek

Booth 535

8200 IH-10 West, Suite 900
San Antonio, Texas 78230 USA
+1.210.370.8000
+1.210.370.8001 fax
info@newtek.com
www.newtek.com

Anne Kappmeyer
Marketing Communications
Manager

NewTek's Next Generation Video and 3D products – the industry standard for film, video, and broadcast with over 50% market share. NewTek's next generation LightWave 3D will mark the introduction of a ground-breaking new architecture, revolutionary rendering technologies, amazing character animation, and modeling tools for lifelike animation.

Next Limit SL

Booth 2532

Galileo 104, 4-11
Madrid 28003 SPAIN
+34.91.5542170
+34.91.5540657 fax
info@nextlimit.com
www.realflow.com

Victor Gonzalez
Technical Director

RealFlow is a particle fluid simulator for liquids, gases, viscous, and elastics. RealWave is a wave generator and floating object simulator. Both are available for LightWave, MAX, Softimage, and Maya.

Nichimen Graphics Inc.

Booth 1011

12555 West Jefferson Boulevard
Suite 285
Los Angeles, California 90066 USA
+1.310.577.0500
+1.310.577.0577 fax
sales@nichimen.com
www.nichimen.com

Nichimen Graphics is a leading provider of technology for 3D content creation. Its full-featured integrated animation package, Mirai, includes subdivision surface modeling, revolutionary 1K and advanced animation tools. Also featured is its 3D modeling and paint program, Nendo.

Nikkei Computer Graphics

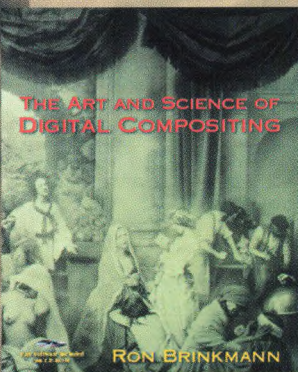
Booth 413

2-7-6 Hirakawacho, Chiyoda-ku
Tokyo 102-8636 JAPAN
+81.3.5210.8330
+81.3.5210.8030 fax
tdanarita@nikkeibp.co.jp
www.nikkeibp.co.jp/ncg/

IT'S A DESIGN THING—

AND MORGAN KAUFMANN HAS THE BOOKS YOU NEED!

Visit us at
SIGGRAPH
Booth # 2038

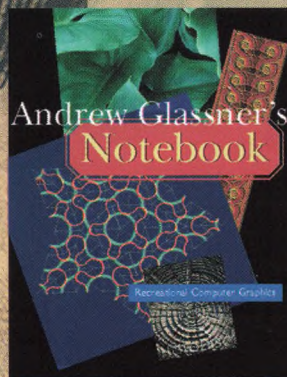


The Art and Science of Digital Compositing

Ron Brinkmann

The Art and Science of Digital Compositing is a comprehensive reference that provides a complete overview of the technical and the artistic nature of digital compositing. This book covers a wide range of topics from basic image creation, representation, and manipulation, to a look at the visual cues that are necessary to create a believable composite.

May 1999; 384 pages; cloth + CD-ROM; \$54.95; ISBN 0-12133-960-2



Andrew Glassner's Notebook Recreational Computer Graphics

Andrew Glassner

Reproducing and expanding almost all of his columns from *IEEE Computer Graphics & Applications* over the past three years, *Andrew Glassner's Notebook* is an eclectic, provocative, and broadly relevant book sure to entertain and inform you. The 4-color illustrations alone, some not previously published, will empower your skills and interest in the graphics world.

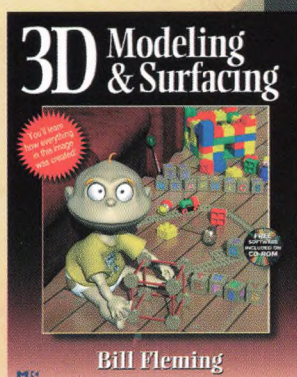
August 1999; 328 pages; paper; \$44.59; ISBN 1-55860-598-3

3D Modeling and Surfacing

Bill Fleming

This book provides a one-of-a-kind guide to mastering the technology and techniques of 3D graphics, with emphasis on modeling and surfacing. It goes beyond mere explanations and tutorials—it actually explains which tools and techniques to choose to accomplish specific goals.

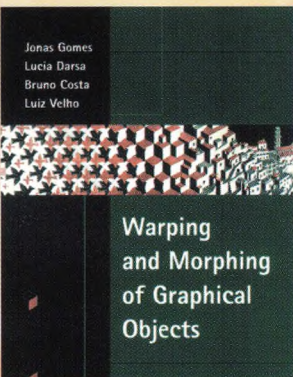
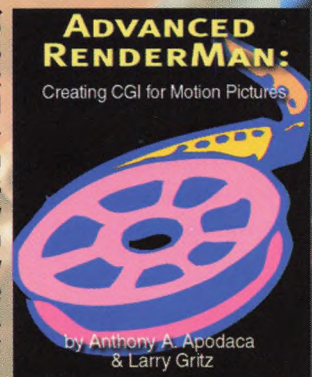
May 1999; 368 pages; paper; \$49.95; ISBN 0-12260-490-3



Advanced RenderMan: Creating CGI for Motion Pictures

Anthony A. Apodaca and Larry Gritz
This book, with 24 pages of color art and supportive online materials, covers the theory and practice of using RenderMan to do the highest quality computer graphics animation production. Not an introductory book, it explores more advanced details on how to define scenes, how to write truly excellent shaders, and how to integrate RenderMan into the studio production pipeline.

ISBN -55860-618-1; October 1999; \$49.95

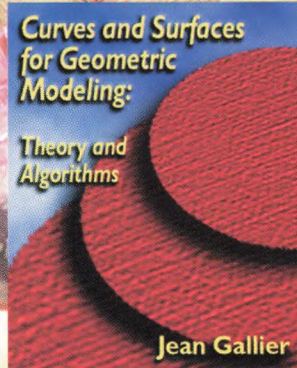


Warping & Morphing of Graphical Objects

Jonas Gomes, Lucia Darsa, Bruno Costa, and Luiz Velho

This classic book defines the field: it presents a unifying view of warping and morphing, combining a conceptual framework with a consolidated view of the state of the art. Coverage includes deformations of various graphical objects such as plane curves, images, surfaces, and volumes.

October 1998; 528 pages; cloth; \$79.95; ISBN 1-55860-464-2

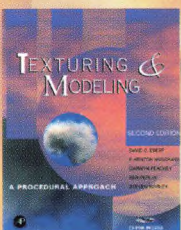


Curves and Surfaces for Geometric Modeling: Theory and Algorithms

Jean Gallier

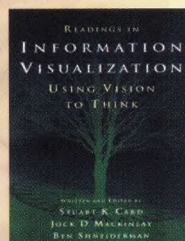
This book is an introduction to the geometry concepts and tools needed for solving problems of a geometric nature with a computer, or geometric modeling methods in engineering. It provides an introduction to the mathematical concepts needed in tackling problems arising notably in computer graphics, geometric modeling, computer vision, and motion planning.

ISBN 1-55860-599-1; September 1999; \$74.95



Texturing and Modeling, Second Edition

David S. Ebert, F. Kenton Musgrave, Darwyn Peachey, Ken Perlin, and Steve Worley
June 1998; 450 pages; Casebound with CD-ROM; \$54.95; ISBN 0-12228-730-4



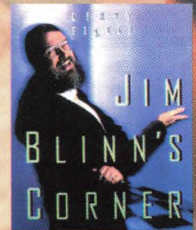
Readings in Information Visualization: Using Vision to Think

Edited by Stuart K. Card, Jock Mackinlay, and Ben Shneiderman
January 1999; 712 pages; paper; \$69.95; ISBN 1-55860-533-9

Jim Blinn's Corner: Dirty Pixels

Jim Blinn

July 1998; 215 pages; Paperback; \$29.95; ISBN 1-55860-455-3



15% OFF
To All
SIGGRAPH
Attendees!

MORGAN KAUFMANN PUBLISHERS

Mail: Harcourt, Inc. - Attn: Order Fulfillment Dept., 6277 Sea Harbor Drive, Orlando, FL 32887
Phone: 800-745-7323 - 407-345-3800 • Fax: 800-847-6418 - 407-345-4060
Email: orders@mkp.com • Visit Morgan Kaufmann on the Web: www.mkp.com



Not a Number

Booth 2067

Horsten 1
Eindhoven 5612 AX
THE NETHERLANDS
+31.40.247.5997
+31.40.247.5707 fax
info@blender.nl
www.blender.nl

Ton Roosendaal

NaN develops and distributes Blender, the freeware 3D software for SGI, Sun, Linux, Windows, and BeOS.

Nothing Real

Booth 239

211 Windward Avenue, 2nd Floor
Venice, California 90291 USA
+1.310.664.6152
+1.310.664.6157 fax
allen@nothingreal.com
www.nothingreal.com

Fleur Hervas
Exhibition Manager

Nothing Real's flagship product, Shake, is a resolution and platform-independent compositing package. It offers an unprecedented combination of functionality, extensibility, speed, and image quality.

nStor

Booth 2235

450 Technology Park
Lake Mary, Florida 32746 USA
+1.407.829.3500
mitch@andataco.com
www.nstor.com

Mitch Becker
Marketing Manager

nStor Corporation manufactures and markets high-availability, high-performance information storage solutions, including external enterprise RAID and SAN systems, desktop disk and tape solutions, AdaptiveRAID, and advanced storage-management software.

Numerical Algorithms Group

Booth 229

1400 Opus Place, Suite 200
Downers Grove, Illinois
60515-5702 USA
+1.630.971.2337
+1.630.971.2706 fax
nagin@nag.com
www.nag.com

Brenda Hufford
Marketing Assistant

NAG's IRIS Explorer, a powerful visualization programming system for data analysis, creates customized applications for displaying and analyzing complex data interactively.

NVIDIA Corporation

Booth 733

3535 Monro Street
Santa Clara, California 95051 USA
+1.408.615.2500
+1.408.615.2800 fax
www.nvidia.com

The NVIDIA RIVA family of high-performance 3D/2D processors offers a complete portfolio of 3D graphics solutions for the performance mainstream PC market ranging from high-end gamers to budget-conscious users.

n-vision, inc.

Booth 925

7680 Old Springhouse Road
McLean, Virginia 22102 USA
+1.703.506.8808
+1.703.903.0455 fax
info@nvis.com
www.nvis.com

Kiera Reilly
Marketing Operations Manager

n-vision, the premier developer of high-performance 3D immersive displays for virtual reality, visual simulation, and training applications, demonstrates its CRT- and LCD-based Datavisor line of head-mounted displays and Virtual Binoculars.

Odyssey Productions

Booth 1006

4413 Ocean Valley Lane
San Diego, California 92130 USA
+1.619.793.1900
+1.619.793.1942 fax
odyssey@odyssey3d.com
www.odyssey3d.com

Steven Churchill
President

Sixteen video collections of the world's best computer animation including: all four Mind's Eye videos, "Luminous Visions" by Yoichiro Kawaguchi, "Ancient Alien," "Turbulence," "Cyberscape," "Computer Animation Classics," "Computer Animation Showcase," "Computer Animation Celebration," "Computer Animation Marvels," and three Computer Animation Festival videos.

Okino Computer Graphics, Inc.

Booth 409

3397 American Drive, Unit 1
Mississauga, Ontario L4V 1T8
CANADA
+1.905.672.9328
+1.905.672.2706 fax
sales@okino.com
www.okino.com

Karen Cleghorn
Sales Manager

Okino introduces innovative new versions of its award winning PolyTrans scene/NURBS/animation translator, its NuGraf rendering/animation system, its NuGraf Developer's Toolkit software, and new non-linear editor.

Orad Hi-Tec Systems

Booth 1859

420 Lexington Avenue, 20th Floor
New York, New York 10170 USA
+1.212.931.0RAD
+1.212.931.6730 fax
mstraeb@orad-ny.com
www.orad-ny.com

Matthew Straeb
President

Orad Hi-Tec Systems, world leading developer of video and real-time image processing technologies for the TV broadcast, post production, and advertising markets. New systems include CyberSet HD Virtual Studio, MobileSet, and CyberSet Post Production.

Orphan Technologies

Booth 415

818 LaSalle Street
Ottawa, Illinois 61350 USA
+1.815.433.6044
+1.815.433.9412 fax
orphan2@theramp.net
www.theramp.net/orphan

Richard Ohlendorf
President

Orphan Technologies is a start-up company. Two functional prototypes demonstrate applications of a new pixel-matching algorithm: stereo image>quantitative model and color correction/image stitching.

Oxberry

Booth 1819

180 Broad Street
Carlstadt, New Jersey 07072 USA
+1.201.935.3000
+1.201.935.0104 fax
oxberry@idt.net
www.idt.net/~oxberry/

Stephen M. Hallett
Vice President of Sales and
Marketing

The world's premier manufacturer of motion picture film scanners and cinematographic film output cameras. The Cinescan 6400 is a high-resolution film scanner used by major post-production and film-restoration facilities throughout the world. The Oxscan-2000 is a lower-resolution product designed for the film-to-digital video marketplace.

PDI (Pacific Data Images)

Booth 2247

3101 Park Boulevard
Palo Alto, California 94306 USA
+1.650.846.8100
+1.650.846.8101 fax
info@pdi.com
www.pdi.com

Julie Haddon
Director of Marketing

An award-winning producer of animation and visual effects for the entertainment and commercial industries. In 1998, PDI created its first computer animated feature, "ANTZ," with DreamWorks. Next up is "SHREK," to be followed by "TUSKER." PDI also boasts a full-service commercials and feature effects division.

Panasonic Broadcast & Television Systems Company

Booth 1711

3330 Cahuenga Boulevard West
Los Angeles, California 90068 USA
+1.323.436.3500
www.panasonic.com/presentations

Tom Moore
Vice President, Sales

Panasonic displays its industry-standard 10-bit D-5 High Definition VTR, the world's brightest 42-inch gas plasma display (model PT-42P1), and its PT-L797U series of ultra-bright XGA, HDTV-compatible projectors.

Panoram Technologies

Booth 2550

10951 Pendleton Street
Sun Valley, California 91352 USA
+1.818.504.0714
+1.818.504.0045 fax
theo@panoramtech.com
www.panoramtech.com

Theo Mayer
President/CEO

Panoram Technologies provides innovative solutions, technologies, and facilities that result in larger, brighter, and higher resolution electronic displays ranging from the single user desktop to the auditorium.

Paraform

Booth 2011

795 San Antonio Road
Palo Alto, California 94303 USA
+1.650.846.2100
+1.650.846.2160 fax
info@paraform.com
www.paraform.com

John H. Doffing
Director of Marketing

Paraform software adds structure and usability to 3D data. Unstructured polygonal data, whether obtained through 3D scanning and digitizing, existing 3D model libraries, or even legacy CAD files, can be intelligently restructured and parameterized into highly manipulable NURBS models using Paraform software.

Peak Performance Technologies, Inc.

Booth 901

7388 South Revere Parkway
Suite 603
Englewood, Colorado 80112 USA
+1.303.799.8686
+1.303.799.8690 fax
info@peakperform.com
www.peakperform.com

Steve Risenhoover
Principal Systems Engineer

The Peak Motus system uses optical, marker-based motion-capture and videotape-based tracking with stationary or moving cameras to allow a virtually unlimited capture space. Real-life movements recorded indoors, outdoors, underwater, or in other natural environments can easily be used to create animated human or animal characters.

Pepper's Ghost Productions

Booth 2428

Clarendon House, 147 London Road
Kingston-upon-Thames KT2 6NH
UNITED KINGDOM
+44.181.546.4900
+44.181.546.4284 fax
ken.royall@peppersghost.com
www.peppersghost.com

Ken Royall
Product Manager, PG Software

Pepper's Ghost Productions commissions and produces 3D animated series and specials for broadcast television, and is a leading developer of animation production-management tools.

PhoeniX Technologies Incorporated

Booth 1068

Unit 550, 655 West Kent Avenue
North, Kent Corporate Center
Vancouver, British Columbia
V6P 6T7 CANADA
+1.604.321.3238
+1.604.321.3286 fax
info@ptiphoenix.com
www.ptiphoenix.com

Primo Seriosa
Marketing Assistant

Able to sample up to 2,000Hz, over 90 degrees, VISUALEYZ is the fastest wireless high-resolution 3D optical motion-capture system, for body, facial, medical, robotics, modeling, and control applications.

Photron USA

Booth 1000

1101 South Winchester Boulevard
Suite D-144
San Jose, California 95128 USA
+1.408.261.3613
+1.408.261.3628 fax
sgross@photron.com
www.photron.com

Scott Gross
Business Development Manager

Photron USA, a developer of high-end chromakey plug-ins, showcases their latest Discreet spark upgrade and other plug-ins for Softimage|DS, Adobe After Effects, and other compositing systems.

Pixar Animation Studios

Booth 1839

1001 West Cutting Boulevard
Richmond, California 94804 USA
+1.510.236.4000
+1.510.236.0388 fax
www.pixar.com

Renee Lamri
Events Manager

Pixar demonstrates the latest advancements to the RenderMan Artist Tools, Pixar's suite of applications designed to bring the full power of RenderMan's award-winning rendering technology to any CGI production facility. Detailed information on products and career opportunities are available.

PixelFusion Limited

Booth 1574

2430 The Quadrant, Aztec West
Bristol BS32 4AQ
UNITED KINGDOM
+44.1454.878740
+44.1454.878644 fax
info@pixelfusion.com
www.pixelfusion.com

Nancy Averis
Marketing Communications

PixelFusion, a fabless semiconductor and IP company, is creating a high-performance processor. Using a massively parallel architecture, these cores will be used in graphics, video, imaging, digital TV, and array processors.

Pixologic, Inc.

Booth 839

320 West 31st Street
Los Angeles, California
90007-3806 USA
+1.213.748.0990
+1.213.748.9888 fax
macmcgary@mediaone.net
www.pixologic.com

Mac McGary
Vice President of Marketing
and Sales

Pixologic reveals, for the first time, the Z-Brush software application. Z-Brush is a new and innovative approach that combines both the capabilities of 3D and 2D painting and sculpting tools.

Play Incorporated

Booth 1111

2890 Kilgore Road
Rancho Cordova, California 95670
USA
+1.916.851.0800
+1.916.851.0801 fax
melissaw@play.com
www.play.com

Melissa Wolfe
Marketing

Polhemus, Inc.

Booth 1747

One Hercules Drive
Colchester, Vermont 05446 USA
+1.802.655.3159
+1.802.655.1439 fax
sales@polhemus.com
www.polhemus.com

Ann Pettyjohn
Marketing/Communications
Manager

Scanning, tracking, and animating are as easy as 1,2,3D with Polhemus products: FastSCAN handheld laser scanners for creating 3D images in real time; STAR*TRAK RF wireless motion capture systems, and six-degree-of-freedom FASTRAK.

Post Impressions (Systems) Inc.

Booth 2163

10950 Washington Boulevard
Suite 220
Culver City, California 90232 USA
+1.310.287.0210
+1.310.287.0211 fax
info@postimpressions.com
www.postimpressions.com

John Miller
President

Post Impressions demonstrates how it bridges the gap between video and data with its SpiDDR storage, I/O and networking device, and High Definition Visualization Utility.

Producción & Distribución Corporation

Booth 550

13040 Southwest 120th Street
Miami, Florida 33186 USA
+1.305.256.6774
+1.305.256.8487 fax
marcilla@produ.com
www.produ.com

Maria Manalle
Events Manager

Professional Marketing Services

Booth 1004

4802 East Ray Road, Suite 2328
Phoenix, Arizona 85044 USA
+1.480.940.5400
+1.480.940.5488 fax
pmsi@promarketinc.com
www.promarketinc.com

Maggie Doehnert
Director of Sales and Marketing

Services include dealers of new and used digital imaging equipment such as drum, slide, and flatbed scanners, film recorders, color laser copiers, electrostatic plotters, wide format inkjet printers, dye sub printers, imagesetters, digital cameras, photo retouching, and restoration workstations.

Puffin Designs, Inc.

Booth 1367

80 Liberty Ship Way, Suite 7
Sausalito, California 94965 USA
+1.415.331.4560
+1.415.331.5230 fax
info@puffindesigns.com
www.puffindesigns.com

Kevin Gallagher
Associate Marketing Manager

Puffin Designs develops visual effects software for video and film professional artists. Commotion, Composite Wizard, Knoll Lens Flare Pro, Image Lounge, and Primatte Keyer are published by Puffin Designs.

Department of Computer Graphics, Purdue University

Booth 929

1419 Knoy Hall, Room 363
West Lafayette, Indiana
47907-1419 USA
+1.765.494.4585
+1.765.494.9267 fax
grbertol@tech.purdue.edu
www.tech.purdue.edu/cg/

Gary Bertoline
Department Head

The Department of Computer Graphics prepares students for careers in computer graphics in one of four program options: interactive multimedia, computer animation, manufacturing graphics, or construction graphics.

Quantel Inc.

Booth 1701

28 Thorndal Circle
Darien, Connecticut 06820 USA
+1.203.656.3100
+1.203.656.3459 fax
quantel@quantel.com
www.quantel.com

Debbie Brenner
Director of Marketing

The 16:9 DTV-ready Editbox FX has powerful effects plug-ins, Clipnet background load, enhanced ergonomics, up to four hours non-compressed storage, a clear HD upgrade path, and optional 24fps editing capabilities.

Questar Productions

Booth 514

5740 Olde Wadsworth, Suite C
Arvada, Colorado 80002 USA
+1.303.659.4028
+1.303.425.1364 fax
wcsinfo@questarproductions.com
www.questarproductions.com

Mindy K. Bieging
Sales and Marketing Manager

Stop by Booth 514 for the hottest news and the latest version of World Construction Set, the premiere photorealistic landscape modeling, rendering, and animation software with LightWave/Inspire 3D/3D Studio MAX integration.

QuVIS

Booth 833

2921 Southwest Wanamaker Drive
Suite 107
Topeka, Kansas 66614 USA
+1.785.272.3656; 800.554.8116
+1.785.272.3656 fax
gscheckel@quvis.com
www.quvis.com

George D. Scheckel, Jr.
Vice President of Marketing and Sales

QuVIS manufactures QuBit, the format- and resolution-independent disk-based motion image recorder that uses wavelet-based image processing to guarantee image quality and efficient storage. QuBit is networkable and uses standard SMPTE I/O's for acquisition and playback.

Raindrop Geomagic, Inc.

Booth 2311

617 Davis Drive, Suite 300
Durham, North Carolina 27713 USA
+1.919.474.0122
+1.919.474.0216 fax
inquiry@geomagic.com
www.geomagic.com

Ashley W. Sharp
Marketing Communications Manager

Raindrop Geomagic, Inc. is a 3D software company dedicated to developing the most technically advanced solutions for automatic creation of production-quality digital 3D models from existing objects and data.

Real3D

Booth 311

2603 Discovery Drive, Suite 100
Orlando, Florida 32826 USA
+1.407.515.5054
+1.407.515.5396 fax
real3d@real3d.com
www.real3d.com

Director of Marketing

Real 3D provides technology and assistance to customers seeking innovative 3D graphics solutions. Demonstrations of the company's real-time image generation, 3D scanning, and digital content creation solutions are provided.

Real Time Visualization

Booth 1737

300 Baker Avenue, Suite 301
Concord, Massachusetts 01742
USA
877.467.8849
rtviz@rtviz.com
www.rtviz.com

Steve Artim
Applications Development Manager

VolumePro is the world's first real-time 3D volume rendering solution. The board enables users of WindowsNT PCs and UNIX workstations to achieve unparalleled performance at PC price points.

REALVIZ

Booth 747

Arep Center, 1 Traverse des Brucs
Sophia Antipolis 06560 FRANCE
+33.4.92.38.84.60
+33.4.92.38.84.61 fax
emmanuel.javal@realviz.com
www.realviz.com

Emmanuel Javal
Vice President, Marketing and Sales

REALVIZ develops software that extracts 3D information from 2D images to build 3D objects or scenes, create image sequences, produce 2D effects, and match-move real and CG sequences.

Research Systems, Inc.

Booth 403

4990 Pearl East Circle
Boulder, Colorado 80301 USA
+1.303.786.9900
+1.303.786.9909 fax
info@rsinc.com
www.rsinc.com

IDL, the Interactive Data Language, is a powerful high-level language for advanced visualization and cross-platform application development. Using OpenGL, IDL takes full advantage of the capabilities of your system.

RGB Spectrum

Booth 1924

950 Marina Village Parkway
Alameda, California 94501 USA
+1.510.814.7000
+1.510.814.7026 fax
sales@rgb.com
www.rgb.com

Sales Department

RGB Spectrum manufactures video scan converters, multi-screen processors, video windowing systems, video scalars, display signal synchronizers, and other converters and processors. Compatible with computers up to 1600 x 1200.

Rhino/Robert McNeel & Associates

Booth 2457

3670 Woodland Park Avenue North
Seattle, Washington 98103 USA
+1.206.545.7000
+1.206.545.7321 fax
bob@mcneel.com
www.rhino3d.com

Bob McNeel
President

Rhino, an advanced NURBS curve, surface, and solid modeler for Windows, complements multimedia products including 3D Studio MAX, LightWave, and Softimage. Rhino's NURBS technology provides the flexibility to model anything you can imagine with manufacturable accuracy.

Rhythm & Hues Studios

Booth 2255

5404 Jandy Place
Los Angeles, California 90066 USA
+1.310.448.7500
+1.310.448.7600 fax
recruitment@rhythm.com
www.rhythm.com

Recruiting Department

Sum > parts = R&H and VIFX are out to blaze new trails together in computer animation and special effects! Recent projects: "Mystery Men," "Fantasia 2000," "End of Days," "Flintstones 2," and the usual bevy of award-winning commercials.

Roland DGA Corporation

Booth 568

15271 Barranca Parkway
Irvine, California 92618-2201 USA
+1.949.727.2100; 800.542.2307
+1.949.727.2112 fax
sales@rolanddga.com
www.rolanddga.com

Inside Sales Department

Roland DGA Corporation's digital input and output devices for graphics professionals include desktop 3D scanning and modeling machines, PICZA and MODELA, and the wide-format Hi-Fi JET 1440 dpi six-color printer.

San Francisco Imaging Inc.

Booth 2307

300 Broadway, Suite 14
San Francisco, California 94133
USA
+1.415.957.1369
+1.415.391.1517 fax
slides@slidefactory.com
www.sfimaging.com

Carlos Lara
Managing Director

StereoJet: a breakthrough polarized and image technology producing high-quality and full-color digital 3D prints and transparencies from both photographic and digital 3D images - all from an inkjet printer!

Savannah College of Art and Design

Booth 2438

P.O. Box 3146
Savannah, Georgia 31402-3146
USA
+1.912.525.5100
+1.912.525.5995 fax
admissions@scad.edu
www.scad.edu

Dianne Taylor
Vice President for Admission

Savannah College of Art and Design offers B.F.A., M.F.A., M.A., B.Arch, and M.Arch. Eighteen majors and nine minors including electronic and sound design. Computer art tracks: 2D animation, 3D animation, motion graphics, and interactive design.

SBS Technologies, Inc. Connectivity Products

Booth 1815

1284 Corporate Center Drive
St. Paul, Minnesota 55121 USA
+1.651.905.4700
+1.651.905.4701 fax
info@bit3.com
www.sbs-bit3.com

Lona Boote
Communications Coordinator

Real-time communications between PCs, workstation, and VME systems supporting high-volume image and graphic data transfers among multiple platforms. Software drivers for Windows, VxWorks, IRIX, Solaris, AIX, HP-UX, and Linux.

File Edit View Tools

- Graphics ▶
- Text ▶
- Motion ▶
- Audio ▶

Screen Actors Guild?



What's This?

Screen Actors Guild is a "smart" tool that allows programmers to enhance web sites, games and other multi-media by adding high-quality voiceovers.

OK

Cancel

Professional actors are smart tools because they can enhance and add diversity to the programmer's original vision.

This added quality will grab the attention of gamers and keep them coming back to your product.

SAG Interactive Contracts

File Edit View Help

Joan Greenspan
New York Office
(212) 944-1030

Allen D. Weingartner
Los Angeles Office
(323) 549-6850



For more information about our Interactive Contracts call or visit us at Siggraph. Booth #2446.

OK

Scarlett Chou Studio

Booth 2629

4024 Skelton Circle
Culver City, California 90232 USA
+1.310.838.9098
+1.310.838.9098 fax
scarlettchou@hotmail.com

Phillip Chou
Vice President

Scarlett Chou Studio features digital imaging products. We concentrate on digital artworks and computer-graphic-related products.

Scientific Placement, Inc.

Booth 955

800 Tully Road, Suite 200
Houston, Texas 77079 USA
+1.281.496.6100
+1.281.496.0373 fax
lej@scientific.com
www.scientific.com

LeAnn Jones
Group Manager

Technical search and recruiting firm specializing in the commercial software and hardware industries on a national basis. We have openings for experienced engineers with a background in graphics, video, and multimedia development.

Screen Actors Guild

Booth 2446

5757 Wilshire Boulevard, 8th Floor
Los Angeles, California 90036 USA
+1.323.549.6028
+1.323.549.6656 fax
jcook@sag.org
www.sag.org

Jennifer Cook
Assistant Trade Show Coordinator

Screen Actors Guild represents a diverse talent pool of over 96,000 professional performers who work under a wide range of agreements available to producers of all budget levels.

SensAble Technologies

Booth 1101

215 First Street
Cambridge, Massachusetts 02142 USA
+1.617.621.0150
+1.617.621.0135 fax
info@sensable.com
www.sensable.com

SensAble's PHANTOM 3D-Touch system allows users to work with 3D models and data more intuitively and expressively by harnessing their sense of touch. SensAble is launching FreeForm, a ground-breaking new 3D-modeling application.

SENSE8 Product Line of EAI

Booth 504

100 Shoreline Highway, Suite 282
Mill Valley, California 94941 USA
+1.415.339.3200
+1.415.339.3201 fax
davem@eai.com
www.sense8.com

Dave Meyler
Marketing Manager

Engineering Animation Inc.'s cross-platform application development tools: WorldToolKit, World Up, and World2World simplify the complex task of developing real-time 3D interactive applications from the desktop to fully immersive display systems.

SGI

Booth 1201.1401

1600 Amphitheatre Parkway
Mountain View, California 94043-1351 USA
+1.650.960.1980
+1.650.933.0316 fax
hnnun@corp.sgi.com
www.sgi.com

Hal Nunn
Director of Corporate Marketing

SGI is one company that combines high performance and visual computing, enabling our customers to gain powerful business insight and competitive advantage.

Sharp Electronics Corporation

Booth 1805

Sharp Plaza
Mahwah, New Jersey 07430 USA
+1.201.529.8200
+1.201.529.5843 fax
gag1@sharpsec.com
www.sharp-usa.com

Gerald Ganguzza
Senior Manager Marketing
Professional LCD Products

Sharp offers a full line of LCD-based projection and display products for use in multimedia and portable applications. New products include our high-resolution Notevision projectors and LCD monitors.

Sheridan College

Booth 2452

1430 Trafalgar Road
Oakville, Ontario L6H 2L1
CANADA
+1.905.845.9430x2043
+1.905.815.4081 fax
ronald.holgerson@sheridanc.on.ca
www.sheridanc.on.ca

Ron Holgerson
Executive Director,
Communications and International Services

Internationally renowned for its classical and computer animation programs, Sheridan also offers programs in animation filmmaking and technical direction, media arts, and interactive multimedia, featured in the new Sheridan Centre for Animation and Emerging Technologies.

Side Effects Software

Booth 1147

477 Richmond Street West
Suite 1001
Toronto, Ontario M5V 3E7
CANADA
+1.416.504.9876
+1.416.504.6648 fax
info@sidefx.com
www.sidefx.com

Ricki Vig
Accounts Manager

Side Effects Software demonstrates the superior production solutions available through its sophisticated Houdini technology. The latest release integrates a myriad of advanced functionalities, such as real-time performance animation and powerful modeling tools, within Houdini's procedural framework.

Silicon Graphics is now

Come
see us in
Booth #1201/1401



www.sgi.com

That's short for **S**ervers, supercomputers
and **g**raphics workstations that enable breakthrough **i**nsights.

The new name is shorter, but behind it is a big idea. We're building computing solutions that enable you to expand the realm of innovation and creativity. Solutions that enable you to achieve critical insights into your most difficult challenges – before your competition does.

With our servers and supercomputers, you have phenomenal power to compute the absolute toughest problems. Our graphics workstations allow you to see, manipulate and use data in more meaningful ways. And when combined with our broad range of global services, we make it possible to build exactly the solution you need to explore the ideas you dream of, no matter how big they are. From safer cars, to better drugs, to new oil discoveries, we can help you make anything possible.

Have a new look at SGI. See for yourself how our servers, supercomputers and graphics workstations can solve your most complex problems. You'll discover that, for every challenge you have, the solution is in sight.™

sgi™

The solution is in sight.

Sierra Design Labs

Booth 951

999 Tahoe Boulevard
Incline Village, Nevada 89451 USA
+1.775.831.7837
+1.775.831.5710 fax
info@sdlabs.com
www.sdlabs.com

Terese Parrish
Marketing Communications
Manager

Sierra provides unrivaled functionality for a wide variety of applications. Products are uniquely able to expand and evolve as the user's needs and television systems change over time, resulting in the most comprehensive line of storage solutions and interface accessories on the market.

Silicon Gear Corporation

Booth 1866

130 Archer Street
San Jose, California 95112 USA
+1.408.451.6990
+1.408.451.6995 fax
hank@silicon-gear.com
www.silicon-gear.com

Hank Larabell
CEO

Silicon Grail

Booth 1901

710 Seaward Street
Hollywood, California 90038 USA
+1.323.871.9100
+1.323.871.9199 fax
dave@sgrail.com
www.sgrail.com

Dave Everitt

Silicon Grail is the developer of Chalice, the established 2D compositing software package with the tools film professionals need to create breakthrough visuals at a remarkably affordable price.

Silicon Graphics World

Booth 1908

505-B Cypress Creek Road
Cedar Park, Texas 78615 USA
+1.254.399.9838
+1.254.399.6651 fax
sgj@pcinews.com
www.pcinews.com

Carole McMichael
Editor

Silicon Graphics World focuses on news, features, and products that are useful to SGI and NT users.

SMPTE

Booth 1014

595 West Hartsdale Avenue
White Plains, New York 10607 USA
+1.914.761.1100
+1.914.761.3115 fax
mktg@smpte.org
www.smpte.org

Linda Alexander
Marketing Coordinator

SMPTE is a leading engineering society contributing to all areas of multimedia, computer engineering, film, video, and television disciplines. Known for its standards and breakthrough technical papers, SMPTE serves as an educational forum and network base, aiming its goals at advancing theory in digital and multimedia technology.

Sobrio International

Booth 327

150 de Vimy Street
Sherbrooke, Québec J1J 3M7
CANADA
+1.819.346.1811x201
+1.819.346.4220 fax
alain.larochelle@sobrio.com
www.sobrio.com

Alain Larochelle
Marketing Director

Sobrio provides technologies for information reuse. At SIGGRAPH 99, Sobrio is launching Tabellio, a powerful solution for those who prefer to spend their time creating rather than managing and organizing digital documents.

The Software Video Company

Booth 2320

1280 Bison B9406
Newport Beach, California 92660 USA
+1.714.545.6395

Jeni Marks
Account Representative

Computer Training Videos/CD-ROM for Windows and Macintosh with over 500 software programs to learn. From Adobe, Metacreations, Microsoft, Corel, Web Design, Sun, Macromedia, and many more. We are looking for account representatives, instructors, and resellers.

Solid Modeling Solutions

Booth 2361

17708 Southeast 40th Place
Bellevue, Washington 98008 USA
+1.425.746.5479
+1.425.746.4149 fax
info@smlib.com
www.smlib.com

Jim Presti
President

SMLib is a NURBS-based solid modeling geometry kernel. SMS demonstrates the latest product features including the IGES translator, fillets and blends, and additional refinements to the library.

Sony Electronics Inc.

Booth 1619.947.1050

1 Sony Drive
Park Ridge, New Jersey 07656 USA
+1.201.930.1000
www.sony.com/professional

Sony Electronics exhibits the latest in HD production equipment, including the HDCAM 24P. The ES-3 non-linear digital editor is on display as well as the new Glasstron headmount display device. Stop by our booths to see these digital solutions and more.

Springer-Verlag

Booth 1036

175 Fifth Avenue
New York, New York 10010 USA
800.SPRINGER
+1.212.473.6272 fax
orders@springer-ny.com
www.springer-ny.com

Jason Roth
Product Manager, Computer Science

Springer publishes computer graphics books & journals. Browse new titles in OpenGL, virtual reality, computational geometry, modeling, rendering, animation, graphics for beginners, NURBS, computer vision, and HCI. (All books 20% off!)

“ It’s a 12 second shot. The CG creature has to match this puppet and hit these positions. Let’s have him skitter like a cockroach. ”



JIM ISAAC:

Special Effects Supervisor, eXistenZ, a master puppeteer with a keen eye for detail.

June 11.

First pass Aug-17: “Skittering doesn’t really work, let’s have him move more like a spider.”

Pass two Sept-16: “That’s better, now can we have the tendons in his neck strain more.”

Over the next 2 months: “Great, but I’d like to see his back muscles rippling after his tail hits the ground, and let’s make his skin ripple and stretch in his legs and...”

3 weeks before deadline: “The secondary animation looks great, but I think we need to change his path up the gas pump...”

Delivery day Dec-16: One CG creature. Created by a small, but talented team. Delivered on schedule.

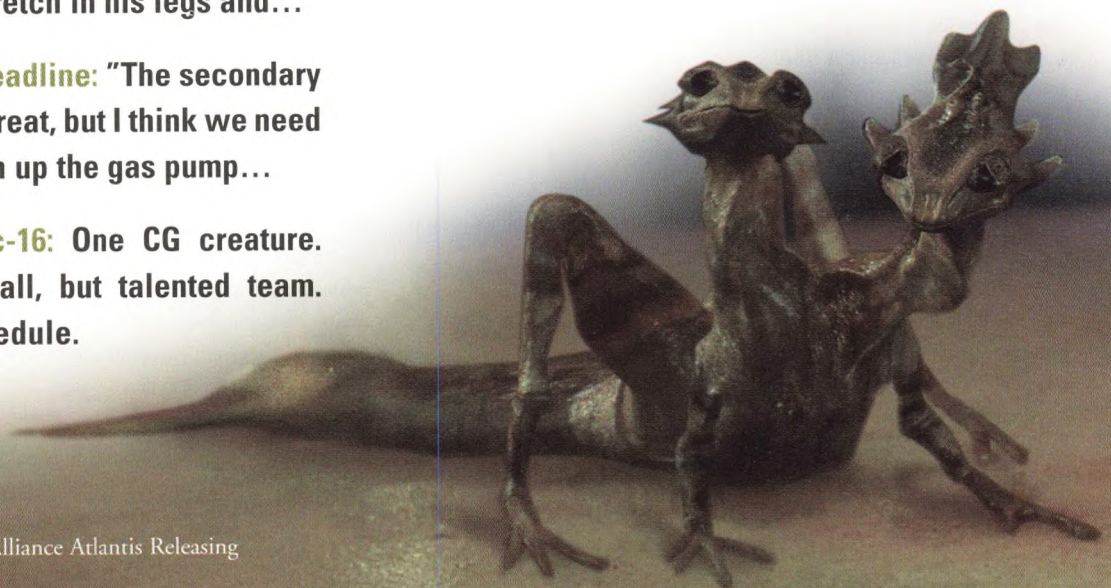
“Using Houdini, TOYBOX was able to create a truly believable CG creature for eXistenZ.”

—Jim Isaac



Sophisticated technology for real-world production

www.sidefx.com • SIGGRAPH booth #1147



Square

Booth 2458

55 Merchant Street, Suite 3100
Honolulu, Hawaii 96813 USA
+1.808.535.9000
+1.808.535.9100 fax
terri@squareusa.com
www.squareusa.com

Terri Sasaki
Coordinator

Square Honolulu Studio is in the middle of creating an unprecedented full-length CG feature film. Please stop by our booth and see what it is about.

Storage Concepts

Booth 1060

2652 McGaw Avenue
Irvine, California 92614 USA
+1.949.852.8511
+1.949.852.8930 fax
info@storcon.com
www.storageconcepts.com

Jim Biernacki
Vice President of Sales

Storage Concepts unveils its new line of FibreRAID storage solutions, including FibreRAID, a 100 MB/Second Fibre Channel Disk Array; FibreRAID Express; and the new low cost desktop solution, FibreRAID Express DT.

StorageTek

Booth 1667

One StorageTek Drive
Louisville, Colorado 80028 USA
800.786.7835
+1.719.536.4053 fax
storagetek@saligent.com
www.storagetek.com

Michael Wilke
Solutions Manager, Digital Media

StorageTek is the preeminent provider of network storage. The company's strategy is to provide "Open, Intelligent, and Integrated" solutions that combine storage products, storage management software, and storage services.

Stratasys Inc.

Booth 333

14950 Martin Drive
Eden Prairie, Minnesota 55344 USA
+1.612.937.3000
+1.612.937.0070 fax
info@stratasys.com
www.stratasys.com

Kimberly Clausen
Marketing Communications
Specialist

Stratasys FDM rapid prototyping systems create 3D thermoplastic models and prototypes for design review and functional testing. The Genisys 3D printer generates 3D concept iterations in a durable polyester compound.

Sun Microsystems, Inc.

Booth 1215

901 San Antonio Road
Palo Alto, California 94303 USA
800.786.0404
+1.650.969.9131 fax
www.sun.com

Laurie Cook
Marketing Programs Manager

Sun Microsystems, Inc. is a leading provider of high-quality hardware, software, and services for establishing enterprise-wide Intranets. Sun's broad, powerful, and scalable line of graphics hardware and software solutions offers investment protection in real-world environments.

SynaPix, Inc.

Booth 727

650 Suffolk Street
Lowell, Massachusetts 01854 USA
+1.978.970.5300
+1.978.934.0020 fax
marketing@synapix.com
www.synapix.com

Teresa Ragan
Marketing Manager

SynaPix offers visual effects artists a new method of integrating computer-generated 3D imagery and 2D video with SynaFlex, a unified 3D analysis, choreography, and compositing system.

SyncMagic

Booth 429

74, Rue de Archives
Paris 75003 FRANCE
+33.1.40279391
+33.1.40279122 fax
info@syncmagic.com
www.syncmagic.com

Dawit Mannheimer
Director of Sales & Marketing

SyncMagic is the leading provider of 2D and 3D LIPSYNC software tools and production services.

Systems Design Limited (IdN Magazine)

Booth 1066

Shop C, 5-9 Gresson Street
Wanchai HONG KONG
+852.2528.5744
+852.2529.1296 fax
info@idnworld.com
www.idnworld.com

Angela Lee
Marketing Executive

IdN is a digital design magazine published bi-monthly for design professionals, photographers, and multimedia/animation production houses. It is currently available in two languages (English and Chinese) in four editions: Asia Pacific, Australia/NZ, H.K./China, and Taiwan.

System Upgrade, Inc.

Booth 2552

23490 Berry Road
Sky Valley, California 92241-7906 USA
800.239.6013
+1.760.251.6192 fax
robert@systemupgrade.com
www.systemupgrade.com

Robert Allen
Sales Manager

System Upgrade specializes in "open" mass storage solutions, complete systems, peripherals, RAID, SAN, and SAN-ready storage solutions. We have over 20 years of continuous industry experience, and our products are ISO 9002 certified.

TAN Projektionstechnologie GmbH & Company K.G.

Booth 433

Tiefenbroichen Weg 35/A2
Dusseldorf 40472
GERMANY
+49.211.4179290
+49.211.417.9295 fax
david.bullock@tan.de

David Bullock
International Project Coordinator

Texas Memory Systems, Inc.

Booth 1018

11200 Westheimer Road
Suite 1000
Houston, Texas 77042 USA
+1.713.266.3200
+1.713.266.0332 fax
www.texmemsys.com

Holly Frost
CEO

For over 20 years, we have been designing and developing supercomputer performance, storage, and I/O systems. The latest development is the SAM-500 which is bigger and faster than the older models with 128 gigabytes of memory and a memory bandwidth of 3.0 GB/sec.

Each month *Computer Graphics World* brings you the latest in CG innovations.

Find out what in the world is new in computer graphics with the BEST read magazine at SIGGRAPH for over 12 years—

Computer Graphics World!



Monday: AFRICA



Tuesday: PARIS



Wednesday: HAWAII

At SIGGRAPH, come travel the world of computer graphics with *Computer Graphics World* and experience the wonders of far away places— an African safari, a romantic Paris cafe and exotic Hawaii.

Experience a world of wonders!
Visit us at booth #2147 for
FREE Subscriptions!



C O M P U T E R
GRAPHICS
W O R L D INNOVATION IN VISUAL COMPUTING

www.cgw.com

PennWell
98 Spit Brook Road
Nashua, NH 03062
603-891-9157

TGS

Booth 1361

9920 Pacific Heights Boulevard
Suite 200
San Diego, California 92121 USA
+1.619.457.5359
+1.619.452.2547 fax
info@tgs.com
www.tgs.com

Steve Lutz
Vice President, Sales and
Marketing

TGS is a leading vendor of interactive 3D graphics toolkits and applications targeting professional developers and content creators on Unix, PC, and Mac systems. TGS provides C++ and Java development toolkits supporting Open Inventor, PHIGS, and VRML. Applications include Amapi and 3Space Publisher.

TNT Technologies

Booth 915

3390 De La Cruz Boulevard
Suite A, B, C
Santa Clara, California 95054 USA
+1.408.330.0700
+1.408.330.0707 fax
sales@tnttech.com
www.tnttech.com

Trina Sandell
Owner

TNT specializes in high-performance memory upgrades and peripherals for workstations and servers offering an extensive product line supporting Apple, Compaq, DEC, Dell, HP, Intel, Sun, and SGI. TNT also markets complete systems such as PC clones, servers, and notebooks.

Toon Boom Technologies

Booth 659

7, rue Laurier Est
Montréal, Québec H2T 1E4
CANADA
+1.514.278.8666
+1.514.278.2666 fax
hasmig@toonboom.com
www.toonboom.com

Hasmig Marangian
Manager, Marketing and
Communications

Toon Boom Technologies is a leading-edge software developer fully dedicated to providing state-of-the-art tools to the 2D animation industry. Toon Boom's products, USAnimation and TicTacToon, are the only vector-based resolution-independent systems on the market.

Toronto Ontario Visual Effects Industry

Booth 967

c/o Ontario Film Development
Corporation
175 Bloor Street East
North Tower, Suite 300
Toronto, Ontario M4W 3R8
CANADA
+1.416.314.6858
+1.416.314.2495 fax
commish@ofdc.on.ca
www.to-ontfilm.com

Gail Thomson
Director of Location Promotion
and Services

A number of the largest animation, visual, and special effects companies are represented: Calibre Digital, C.O.R.E. Digital Pictures, Gajdecki Visual Effects, Keyframe Digital Productions, Lunchbox Post & Effects, The Post Group, TOY-BOX, TOPIX/Mad Dog, Spin Productions, Algonquin, Seneca and Sheridan Colleges, and the Toronto and Ontario Film Commissions.

Toyobo Co. Ltd.

Booth 2216

2-8 Dojima Hama 2 Chome, Kita-ku
Osaka 530-8230 JAPAN
+81.6.6348.3217
+81.6.6348.3192 fax
nanson@hope.keihanna-plaza.co.jp
www.toyobo.co.jp

Yukihiko Minamimura
Marketing

This is what you have been waiting for! Thanks for waiting one year. Our cloth simulation software DressingSim, newly released at SIGGRAPH 99, produces dresses using real cloth properties and paper patterns. On a human model, the dress responds to the movement of the model using physical-based calculations.

Trimension Systems

Booth 2057

Marchants Way, Burgess Hill
West Sussex RH15 8QY
UNITED KINGDOM
+44.1444.250888
+44.1444.250777 fax
natalie@trimension-inc.com
www.trimension-inc.com

Natalie White
Marketing Manager

Trimension is the world's premier virtual systems integrator of immersive/semi-immersive environments. Be it reality rooms, virtual domes, or immersive environments, Trimension is uniquely qualified to create the optimum solution.

UCLA Center for Digital Innovation

Booth 917

3883 Slichter Hall, Box 951567
Los Angeles, California
90095-1567 USA
+1.310.825.1793
+1.310.206.3051 fax
info@cdi.ucla.edu
www.cdi.ucla.edu

Maha Ashour-Abdalla
Director of Science and Technology
Development

Come experience the latest in education technology from CDI. Our showcase includes Java-based distance learning, online intelligent agent applications, multimedia CD-ROM hybrid systems, and other cutting-edge innovations in education.

University of Advancing Computer Technology

Booth 1833

2625 West Baseline Road
Tempe, Arizona 85283-1042 USA
+1.602.383.8228
+1.602.383.8250 fax
admissions@uact.edu
www.uact.edu

Barbara Carpenter
Marketing Assistant

A unique college that offers bachelor degrees in the areas of software engineering, multimedia, digital animation and production, interactive 3D environments, mechanical design, and architectural/civil technology.

WOULD YOU MAKE MUSIC WITHOUT LISTENING?



Making beautiful music is a lot easier when you can hear what's going on!

- Using touch for **3D MODELING** will get you in tune with your work.
- With **FreeForm**, a powerful new way to create 3D MODELS, sculptors and designers can use their sense of touch while modeling on the computer.
- Hands-on quick start classes begin on the hour in the SensAble booth. The most harmonious creation will **win a complete FreeForm system** valued at over \$20K, including an IBM IntelliStation®.

SensAble
TECHNOLOGIES
Booth #1101

IntelliStation
Booth #1231

3
SYSTEMS
Booth #501

SensAble Technologies • Booth #1101

Upgrade Technology Inc.

Booth 2324

136 Busteed Drive
Midland Park, New Jersey 07432
USA
+1.201.670.6584
+1.201.327.7370 fax
norton3@idt.net
www.upgradetech.com

Alex Cirulis
Vice President

PHOENIXPlus Film Recorders and
PHOENIX Engines: 2/4/8/16K,
high throughput and quality, 16mm,
35mm, 120/220, 70mm, 4x5,
CINE.

Ur Studios

Booth 359

1460 Fourth Street
Santa Monica, California 90401
USA
info@urstudios.com
www.urstudios.com

GEL is a new open source 3D
platform for the Internet developed
by a crack team of programmers
and designers at Ur Studios, Santa
Monica and Qube Software,
London.

Vancouver Film School

Booth 2329

420 Homer Street
Vancouver, British Columbia
V6B 2V5 CANADA
+1.604.685.5808
+1.604.685.5830 fax
jan@vfs.com
www.vfs.com

Janet Cacchioni
Marketing Coordinator

A private post-secondary education-
al institution with 700 full-time
and 2,000 part-time students per
year in six programs: film, new
media, 3D animation, classical
animation, acting, and writing for
film and television. A leader in
moving image training, graphics,
sound, and text as fundamental
components for communicating
information and story.

Variety

Booth 2546

5700 Wilshire Boulevard, Suite 120
Los Angeles, California 90036 USA
+1.323.857.6600
+1.323.932.0874 fax
www.variety.com

Stacie Mindch
Trade Show Manager

The show-business trade publication
of record, Weekly Variety delivers
unmatched global coverage of
entertainment product in all forms.
Daily Variety is the most authorita-
tive, most widely-read daily news
source. Variety's two-tiered Web
site, www.variety.com, is the
industry's bookmark.

ViaGrafix

Booth 558

One American Way
 Pryor, Oklahoma 74361 USA
 +1.918.825.6700
 +1.918.825.6744 fax
 wolf@viagrafix.com
 www.viagrafix.com

Brian Wolf
 Trade Show Manager

ViaGrafix develops and markets several training products, including interactive CD-ROM tutorials and training videos that teach most popular software.

Vicon Motion Systems

Booth 1939

15455 Red Hill Avenue, Suite C
 Tustin, California 92780 USA
 +1.714.259.1232
 brian@vicon.com
 www.viconsys.com

Brian Nilles
 Marketing Manager

Vicon Motion Capture introduces Vicon Real-Time (RT), providing the accurate optical motion capture that Vicon 8 is famous for in real time. Vicon RT actually renders live characters on the fly and streamlines the production pipeline for mo-cap use in film, television, and computer game animation.

Viewgraphics Inc.

Booth 2222

1340 Space Park Way
 Mountain View, California 94043 USA
 +1.650.903.4900
 +1.650.969.6388 fax
 www.viewgraphics.com

Adam Schadle
 Vice President of Sales

Viewgraphics Inc. manufactures advanced serial digital video and MPEG-2 interface boards and systems for video production, broadcast, and research solutions for the entertainment and television industries.

Viewpoint Digital

Booth 1611

625 South State Street
 Orem, Utah 84058 USA
 +1.801.229.3000
 +1.801.229.3300 fax
 support@viewpoint.com
 www.viewpoint.com

Viewpoint Digital publishes the world's largest library of 3D digital content and provides creative modeling services to thousands of customers in entertainment, advertising, visual simulation, computer-based training, and corporate communications. Viewpoint's 3D digital solutions are used to create stunning digital effects.

Virtual 3D Incorporated

Booth 1830

720 East Palmetto Park Road
 Boca Raton, Florida 33432 USA
 +1.561.394.8598
 +1.561.394.9901 fax
 dkarram@emi.net
 www.virtual3dinc.com

David Karaam
 President

Virtual 3D Incorporated specializes in creative custom-designed interactive Web sites and high-end 3D computer graphics. Our 3D graphics range from complex architectural models to 3D character designs.

Virtual 3-D Technologies Corporation

Booth 2328

150-T Executive Drive
 Edgewood, New York 11717 USA
 +1.516.734.2076
 +1.516.254.0079 fax
 rzeien@virtual3dtech.com
 www.virtual3dtech.com

Bob Zeien
 President

Developers of a unique full-field, non-contact, 3D measurement technology. The principal benefits of this technology over other current means are its extremely high data acquisition speed (at frame rates), and resulting 3D topographic information from a single sensor.

Virtual Research Systems, Inc.

Booth 1670

2326 Walsh Avenue
 Santa Clara, California 95051 USA
 +1.408.748.8712
 +1.408.748.8714 fax
 info@virtualresearch.com
 www.virtualresearch.com

Christine Kim
 Marketing Manager

Virtual Research, a pioneer in head-mounted and custom display solutions since 1991, is proud to introduce the latest advance in interactive 3D display technology, WindowVR. Visit Booth 1670 to see our full line of custom display products.

Virtual Technologies, Inc.

Booth 2447

2175 Park Boulevard
 Palo Alto, California 94306 USA
 +1.650.321.4900
 +1.650.321.4912 fax
 sales@virtex.com
 www.virtex.com/

Robert Armas
 Technical Sales and Business Development

Virtual Technologies, Inc., the worldwide leader in body sensing and haptic feedback, and creator of the CyberGlove, features its newest award-winning product, the CyberGrasp, and VirtualHand Suite 2000.

Grab it!



CyberGlove® allows you to "reach in and grab" objects in a virtual environment. The **CyberGrasp™** option adds force feedback to 3D graphical objects so they feel real.

- mechanical CAD/CAE
- digital prototype evaluation
- automotive and aerospace design
- training and simulation
- research and development
- motion capture
- virtual reality

VIRTUAL TECHNOLOGIES, INC.

2175 Park Boulevard
Palo Alto, CA 94306
1.650.321.4900
www.virtex.com

VR Telecom

Booth 2525

8500 Brooktree Road
Wexford, Pennsylvania 15090 USA
+1.724.934.0050 x 126
+1.724.934.0199 fax
cbuelter@vrtelecom.com
www.holodesk.com
www.vrtelecom.com

Christina M. Buelter
Director of Marketing

VRooMCOM

Booth 1052

12346 San Mateo Road
Half Moon Bay, California 94019
USA
877.VXVR00M
+1.650.560.0064
877.FXVR00M fax
sales@genreality.com
www.genreality.com

Josh Steinman

The world's leading supplier of 3D and virtual reality integrated systems and products, enabling government, university, industrial, and entertainment organizations to cut costs and save time.

V-Star

Booth 2210

6311 DeSoto Avenue, Suite J
Woodland Hills, California 91367
USA
+1.818.704.1346
+1.818.704.9386 fax
kraaf@hotmail.com
www.v-star.com

Kenn Raaf
Manager, 1KTV

V-Star 1KTV technology combines unique computer-generated voices with lip- and motion-sync characters to deliver television-style news and entertainment programs on the Internet at 1K-baud (1/20th of a standard telephone connection). V*Star developer tools premier at SIGGRAPH 99.

Wacom Technology Corporation

Booth 1731

1311 Southeast Cardinal Court
Vancouver, Washington 98683 USA
800.922.6613
+1.360.896.9724 fax
margaret@wacom.com
www.wacom.com

Margaret O'Toole
Marketing Events Manager

Wacom Technology Corporation demonstrates its new Intuos graphics tablet system with pen, airbrush, and 4D mouse for drawing, painting, photo retouching, and image manipulation. See complete demonstrations on graphic tablet techniques with tips for the professional.

The Walt Disney Company

Booth 1461

500 South Buena Vista Street
Burbank, California 91521 USA
+1.818.560.1768
+1.818.557.0933 fax
isaac.kerlow@disney.com
www.disney.com

Isaac V. Kerlow
Director, Digital Talent and
Development

Stop by The Walt Disney
Company's booth at SIGGRAPH
99 to talk to representatives of
Dream Quest Images, Walt Disney
Feature Animation, Walt Disney
Imagineering, and Walt Disney
Television Animation.

Western Scientific

Booth 2258

9445 Farnham Street
San Diego, California 92123 USA
+1.858.565.6699
+1.858.565.6938 fax
info@wsm.com
www.wsm.com

Julie Branco
Marketing Manager

Western Scientific is a leading
manufacturer of data storage, net-
working, and workstation solutions
including high-performance graphic
and rendering workstations and
RAID storage solutions.

Wicks and Wilson Limited

Booth 1761

Morse Road - Basingstoke
Hants RG24 6PQ
UNITED KINGDOM
+44.1256.842211
+44.1256.840997 fax
wendyb@wwl.co.uk
www.wwl.co.uk

Ian McMinn
Sales and Marketing Director

Wicks and Wilson Limited launches
their new TriForm BodyScan
system, which is the first integral
3D body scanning booth designed
for in-store, field survey, and
laboratory use.

John Wiley & Sons

Booth 2416

605 Third Avenue
New York, New York 10158 USA
+1.212.850.6000
+1.212.850.6264 fax
www.wiley.com/compbooks/

Ellen Reavis Gerstein
Marketing Manager

John Wiley & Sons is a leading
publisher of print and electronic
products. Visit our booth to check
out our latest releases and pick up
a schedule of author book signings.

**Workstation Users Alliance,
Inc.**

Booth 2159

16160 Caputo Drive
Morgan Hill, California 95037 USA
+1.408.782.1044
+1.408.782.1153 fax
dhaynes@workstationusers.com
www.workstationusers.com

Donna J. Haynes
Administration Manager

If you have SGI or Sun equipment,
we have a hardware solution for
you. WUA offers complete sales,
repair, spare parts, system integra-
tion, and customized maintenance
to meet your needs.

**X-IST Realtime Technologies
GmbH**

Booth 847

Hans-Boeckler-Strasse 163
Huerth D50354 GERMANY
+49.2233.518000
+49.2233.518089 fax
info@x-ist.de
www.x-ist.de

Olaf Schirm
President

X-IST Realtime Technologies has
specialized in hardware and soft-
ware development for real-time
motion capture. The product range
stretches from the renowned Facial
Expression Tracker to the first
integrated FullBodyTracker.

**ZACKBACK International,
Inc.**

Booth 667

P.O. Box 9100
Rochester, Minnesota 55903 USA
800.SITTING
+1.507.252.5150 fax
zmail@zackback.com
www.zackback.com

Dennis Zacharkow
President

ZACKBACK Elite, the world's first
computer posture chair, prevents
the slumped postures promoted by
traditional chairs. ZACKBACK's
exclusive dual back support system
provides customized support for
productive, pain-free sitting.

Xybernaut Corporation

Booth 2618

12701 Fair Lakes Circle
Fairfax, Virginia 22033 USA
+1.703.631.6925
+1.703.995.3662 fax
lmontenegro@xybernaut.com
www.xybernaut.com

Lorilee Montenegro
Manager, Marketing
Communication

Xybernaut's MA IV is a patented
wearable computer system that fea-
tures speech activation, flat panel,
and head-mounted displays that
allow users hands-free access to
information in the computer's
internal storage, in local area
networks, and on the Internet on
an as-needed, where-needed basis.

Z Corporation

Booth 455

35 Medford Street, Suite 213
Somerville, Massachusetts 02143
USA
+1.617.628.2781
+1.617.628.2879 fax
sales@zcorp.com
www.zcorp.com

Kate Moore
Marketing Manager

Z Corporation sells the office-
compatible Z402TM 3D printing
system, which builds 3D models
derived from CAD files 5-10 times
faster than any other rapid proto-
typing technology. Its distinguishing
features are its speed, affordability,
ease of use, and ability to produce
complex geometries.



NewMedia 500 Poster: Knowledge is Power

The digital landscape is constantly evolving, with key players forming new alliances, making new investments and changing the face of the market.

The award-winning NewMedia 500 poster identifies the 500 most influential companies operating in the digital media market today.

The 1999 NewMedia 500 poster will be available this Fall.

Earlier versions of the poster have sold out.
Reserve your poster today.

Call **877-GETNM500** to order your poster.

Posters are \$29.95

NEWMEDIA[®]

M A G A Z I N E

newmedia.com/500

Startup Park

Abvent, Inc.

Booth 1955 M

235 Kansas Street, Suite 203
San Francisco, California 94103
USA
+1.415.431.3412
+1.415.431.7216 fax
usa_sales@abvent.com
www.abvent.com

Fabien Hyon
CEO

Katabounga II: The alternative solution for multimedia authoring which combines efficient ease of use and rich functionality. Katabounga offers you access to its essential power without having to write a line of code.

INTENT Productions

Booth 1955 I

1111 West El Camino Real
Suite 109295
Sunnyvale, California 94087 USA
+1.408.749.8113
+1.408.738.4584 fax
maraffi@intentp.com
www.intentp.com

Chris Maraffi
Principal

INTENT Productions primarily produces high-quality training videos. The latest series, Realistic 3D Character Development, is the most advanced Softimage 3D training available anywhere, at a fraction of the cost of taking an advanced training class.

Pac Bell Wireless

Booth 1955 N

5757 Wilshire Boulevard
Suite 540
Los Angeles, California 90036
USA
+1.323.965.4900
+1.323.965.4919 fax
perelmanco@aol.com

Steve Kohn
Director of Marketing and Sales

Pac Bell Wireless is the premier wireless communication service in Southern California. Utilizing "Smart Chip" technology, we can help you increase your productivity and clear your calls most efficiently.

Steamboat Software

Booth 1955 E

4456 Avocado Street
Los Angeles, California 90027
USA
+1.323.665.0454
+1.323.665.5273 fax
revl@steamboat-software.com
www.steamboat-software.com

Rev Lebareadian and Jacob Sisk
Owners/Developers

Steamboat Software offers a revolutionary renderer incorporating volumetric techniques such as particles and hair, and an innovative pipeline system. Our renderer is targeted at high-end effects and post-production companies.

Evergreen Innovations, L.L.C.

Booth 1955 G

16725 Northeast 98th Place
Redmond, Washington
98052-3187 USA
+1.425.883.9734
+1.425.885.1774 fax
alosgood@gte.net

Al Osgood
Chief Scientist

Evergreen Innovations, L.L.C. is a startup technology development company. Our Osgood System - Color technology makes moving objects appear either in front of, or behind, a display surface.

MENSI, Inc.

Booth 1955 H

35 Technology Parkway
Suite 170
Norcross, Georgia 30092 USA
+1.770.613.5255
+1.770.613.5254 fax
ken.shain@mensi.com
www.mensi.com

Ken Shain
CEO

MENSI, Inc. offers both 3D laser scanners for as-built real-world data capture and 3D modeling software for creating exportable geometric or surface models from collected as-built data sets.

Precision Insight Inc.

Booth 1955 A

114 South Prize Oaks Drive
Cedar Park, Texas 78613 USA
+1.512.378.3003
+1.512.378.3004 fax
frankl@precisioninsight.com
www.precisioninsight.com

Frank LaMonica
President/CEO

Precision Insight Inc. (PI) develops 3D Graphics System Software. PI's Direct Rendering Infrastructure (DRI) integrates SGI's GLX, Mesa 3.1, XFree86 4.0, and the Linux kernel for 3D hardware acceleration under Linux. PI also develops 2D and 3D device drivers.

Summit3D/Berryvale Software Solutions

Booth 1955 B

HC 69, Box 79
Cornish, Maine 04020 USA
800.625.8272
+1.207.625.3738 fax
berryvale@earthlink.net
www.summit3d.com

Steve Blake
Head of Marketing

Summit is a powerful, cost-effective suite of tools used to develop virtual reality content for Web page designers, game developers, interactive computer-based training, architectural modeling, and engineering visualization.

Synthetik Software, Inc.

Booth 1955 L

30 Sheridan Street
San Francisco, California 94103
USA
+1.415.864.6582
+1.415.864.0433 fax
inquiry@synthetik.com
www.synthetik.com

Candice Pacheco
Product Manager

Studio Artist Graphics Synthesizer:
Smart interactive painting, drawing,
and image manipulation soft-
ware. Studio Artist intelligently
assists in creating lush dynamic
paint textures, amazing image pro-
cessing, morphing, warping, anima-
tion, and rotoscoping.

Systems in Motion

Booth 1955 P

Nedre Vaskegang 6
Oslo 0186 NORWAY
+47.73.54.03.78
+47.67.17.29.12 fax
sim@sim.no
www.sim.no

Oyvind Rideng
CEO

Rational Reduce: New award-win-
ning polygon reduction tool of often
up to 90% reduction. In use by
NASA, Boeing, Honda, and British
Aerospace. Also featured: COIN -
New Open Source 3D graphics
library, Open Inventor compatible.

VARTEC

Booth 1955 O

Holstraat 19
Gent 9000 BELGIUM
+32.9.269.99.66
+32.9.269.99.69 fax
products@vartec.be
www.vartec.be

Yves De Vlieger
Senior Account Manager

ULTIMA 3D supports the complete
development cycle and supplies you
with completely integrated and non-
linear tools for every phase in the
production process, to ease your
way through the realization of your
VR project.

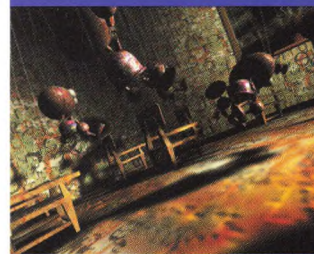
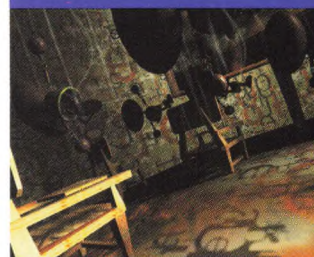
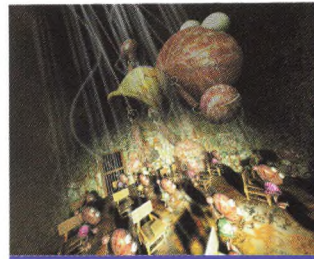
Visual Voice

Booth 1955 D

1486 Beacon Street
Brookline, Massachusetts 02446
USA
+1.617.277.4317
+1.617.232.5731 fax
dchenery@cync.com

Robert Lamm
Vice President

Featuring automatic synching of
voice to animation.



Visit us at
booth #2438

BACHELOR of FINE ARTS
MASTER of FINE ARTS
MASTER of ARTS

COMPUTER ARTS VIDEO/FILM

Game Development
Interactive Design
Motion Graphics
Sound Design
Video/Film

2D Animation
3D Animation

Silicon Graphics,
Windows NT, DEC Alpha
and Power Macintosh

After Effects, Alias, Animo,
Director, Digital Studio,
Houdini, Illustrator, Flint,
Lightwave, Maya, Motivate,
Nichiman, Painter, Photoshop,
PlayStation Net, Yaroze,
Renderman, Softimage,
3D Studio Max, and more.



**Savannah College
of Art and Design**

An International University for the Arts

P.O. Box 3146 • Savannah, GA USA 31402-3146 • 1.800.869.SCAD
info@scad.edu • www.scad.edu • www.ca.scad.edu

Savannah College of Art and Design admits students of any race, color, and national or ethnic origin.

437	International Fine Arts College	2210	V-Star
2231	JLCooper Electronics	1731	Wacom Technology Corporation
1960	Journey Education Marketing	1761	Wicks and Wilson Limited
2411	KAYDARA	847	X-IST Realtime Technologies GmbH
1921	LambSoft, Inc.	667	ZACKBACK International, Inc.
1933	LEGASYS International		
1560	Lenticular Development Inc.		

518	Linker Systems, Inc.
321	MathEngine Inc.
1135	Matrox
317	Maxon Computer, Inc.
2267	Measurand Inc.
2008	Media 100 Inc.
347	MediaPEGS
2211	Minolta Corporation
535	NewTek
2532	Next Limit SL
1011	Nichimen Graphics Inc.
2067	Not a Number
239	Nothing Real
2235	nStor
1006	Odyssey Productions
409	Okino Computer Graphics, Inc.
1819	Oxberry
2247	PDI (Pacific Data Images)
2011	Paraform
901	Peak Performance Technologies, Inc.
1068	PhoeniX Technologies Incorporated
1111	Play Incorporated
1747	Polhemus, Inc.
929	Purdue University
1701	Quantel Inc.
514	Questar Productions
833	QuVIS
2311	Raindrop Geomagic, Inc.
747	REALVIZ
2457	Rhino/Robert McNeel & Associates
2255	Rhythm & Hues
2438	Savannah College of Art and Design
1201/	SGI
1401	
2452	Sheridan College
1147	Side Effects Software
1036	Springer-Verlag
1955 B	Summit3D/Berryvale Software Solutions
1215	Sun Microsystems, Inc.
727	SynaPix, Inc.
429	SyncMagic
1955 L	Synthetik Software, Inc.
1361	TGS
967	Toronto Ontario Visual Effects Industry
2216	Toyobo Co. Ltd.
2329	Vancouver Film School
1830	Virtual 3D Incorporated

Architecture/Engineering/Construction

Booth	
1955 M	Abvent, Inc.
1837	Advanced Media Production
601	Advanced Rendering Technology
1415/	Alias Wavefront
1631	
2335	Appian Graphics
623	auto.des.sys, Inc.
629	Caligari Corporation
2303	Cebas Computer
2147	Computer Graphics World
1915	Cyberware
2451	Cyra Technologies
2353	Digibotics, Inc.
617	Digital Immersion Software Corporation
1247	Evans & Sutherland
339	Fakespace, Inc.
937	Geometrix, Inc.
1261	GESTEL
1637	Hewlett-Packard
1947	InterSense, Incorporated
1960	Journey Education Marketing
1560	Lenticular Development Inc.
317	Maxon Computer, Inc.
1955 H	MENSI, Inc.
1025	MUSE Technologies, Inc.
535	NewTek
925	n-vision, inc.
409	Okino Computer Graphics, Inc.
2550	Panoram Technologies
929	Purdue University
514	Questar Productions
1201/	SGI
1401	
2452	Sheridan College
1955 B	Summit3D/Berryvale Software Solutions
1955 P	Systems in Motion
2057	Trimension Systems
1955 O	VARTEC
1830	Virtual 3D Incorporated
2618	Xybernaut Corporation

AJA VIDEO

MODEL HD10C
HDTV Serial Digital to SVGA Component Converter

PICK HIT
ENGINEERING 1999

television broadcast
NAB '99
EDITORS' PICK OF SHOW

VISIT SIGGRAPH BOOTH #1767

800-251-4224
Tel: 530-274-2048 Fax: 530-274-9442
www.aja.com

ergonomic computer desks
biomorphdesk.com

biomorph[®]

Interactive DESK

catalog 888 302-DESK

11 BROADWAY, RM 1010, NEW YORK, NY 10004 FAX (212) 809-4324

see us at SIGGRAPH 99 Booth 2418

Business & Financial**Graphics**

Booth	
2635	blaxxun interactive
629	Caligari Corporation
225	Digital Juice
1960	Journey Education Marketing
317	Maxon Computer, Inc.
1025	MUSE Technologies, Inc.
733	NVIDIA Corporation
2550	Panoram Technologies
1201/	SGI
1401	
1215	Sun Microsystems, Inc.
1361	TGS

CAD/CAM/CAE/CIM/**Robotics**

Booth	
1034	3DMetrics, Inc. (Division of In-Harmony Technology)
501	3D Systems
1955 M	Abvent, Inc.
1837	Advanced Media Production
1415/	Alias Wavefront
1631	
2335	Appian Graphics
2635	blaxxun interactive
1431	Compaq Computer Corporation
2353	Digibotics, Inc.
457	Fujitsu Takamisawa America, Inc./ITU Research, Inc.
1261	GESTEL
1637	Hewlett-Packard
1231	IBM
547	Intergraph Computer Systems
1947	InterSense, Incorporated
2231	JLCooper Electronics
1960	Journey Education Marketing
2267	Measurand Inc.
1025	MUSE Technologies, Inc.
925	n-vision, inc.
409	Okino Computer Graphics, Inc.
2011	Paraform
1747	Polhemus, Inc.
929	Purdue University
514	Questar Productions
2311	Raindrop Geomagic, Inc.
2457	Rhino/Robert McNeel & Associates
504	SENSE8 Product Line of EAI
1201/	SGI
1401	
2452	Sheridan College
1036	Springer-Verlag

1215	Sun Microsystems, Inc.
1955 P	Systems in Motion
1361	TGS
2216	Toyobo Co. Ltd.
2057	Trimension Systems
2447	Virtual Technologies, Inc.

Computer-Video Interfacing

Booth	
517	Accom, Inc.
1767	AJA Video
2335	Appian Graphics
2347	B&H Photo-Video-Pro Audio
2418	Biomorph Interactive Desk
1431	Compaq Computer Corporation
2147	Computer Graphics World
2623	Consensus Corporation
247	DVS Digital Video, Inc.
339	Fakespace, Inc.
1932	FORE Systems, Inc.
2219	Grande Vitesse Systems
1637	Hewlett-Packard
1231	IBM
1914	ID8 Media
2231	JLCooper Electronics
1030	Lightwave Communications
247	MMS Multi Media Systems
535	NewTek
2235	nStor
1068	PhoeniX Technologies Incorporated
2163	Post Impressions (Systems) Inc.
929	Purdue University
1701	Quantel Inc.
833	QuVIS
1924	RGB Spectrum
1201/	SGI
1401	
1805	Sharp Electronics Corporation
951	Sierra Design Labs
1619/	Sony Electronics Inc.
947/1050	
915	TNT Technologies
2329	Vancouver Film School
2222	Viewgraphics Inc.
2159	Workstation Users Alliance, Inc.

Conferences/Exhibitions

Booth	
2026	IMAGINA-INA
727	NAB2000
1014	SMPTE

Consulting

Booth	
2462	3D Pipeline Corporation
2353	Digibotics, Inc.
2219	Grande Vitesse Systems
518	Linker Systems, Inc.
1025	MUSE Technologies, Inc.
229	The Numerical Algorithms Group, Inc.
1667	StorageTek
2552	System Upgrade, Inc.
1955 P	Systems in Motion
2328	Virtual 3-D Technologies Corporation

Data Analysis Software

Booth	
1900	Fraunhofer CRCG, Inc.
1955 H	MENSI, Inc.
1025	MUSE Technologies, Inc.
901	Peak Performance Technologies, Inc.
403	Research Systems, Inc.
1201/	SGI
1401	
1361	TGS

Desktop Publishing

Booth	
1955 M	Abvent, Inc.
1767	AJA Video
1910	Alien Skin Software
2335	Appian Graphics
1447	Avid Technology
2347	B&H Photo-Video-Pro Audio
853	Big Idea Productions, Inc.
2418	Biomorph Interactive Desk
1936	Charles River Media
532	The Coriolis Group
617	Digital Immersion Software Corporation
2219	Grande Vitesse Systems
547	Intergraph Computer Systems
1960	Journey Education Marketing
1933	LEGASYS International
1560	Lenticular Development, Inc.
2317	Microboards Technology
535	NewTek
2550	Panoram Technologies
929	Purdue University
833	QuVIS
1201/	SGI
1401	
1361	TGS
1731	Wacom Technology Corporation

Desktop Video Production

Booth	
517	Accom, Inc.
253	AIST Inc.
1767	AJA Video
1415/	Alias Wavefront
1631	
1910	Alien Skin Software
2335	Appian Graphics
1918	Artbeats Digital Film Library
1904	Atomic Power Corporation
1447	Avid Technology
2347	B&H Photo-Video-Pro Audio
827	Be, Incorporated
853	Big Idea Productions, Inc.
2547	Boris FX
233	BOXX Technologies, Inc.
629	Caligari Corporation
2623	Consensus Corporation
1017	Cycore Computers
536	Desktop Images
1811	DigiEffects
617	Digital Immersion Software Corporation
225	Digital Juice
2029	Discreet
247	DVS Digital Video, Inc.
552	Ensemble Designs
2219	Grande Vitesse Systems
1637	Hewlett-Packard
1231	IBM
2262	Inscriber Technology Corporation
547	Intergraph Computer Systems
2231	JLCooper Electronics
1960	Journey Education Marketing
518	Linker Systems, Inc.
1135	Matrox
2008	Media 100 Inc.
2317	Microboards Technology
247	MMS Multi Media Systems
535	NewTek
409	Okino Computer Graphics, Inc.
1711	Panasonic Broadcast & Television Systems
2550	Panoram Technologies
1000	Photron USA
833	QuVIS
1201/	SGI
1401	
1619/	Sony Electronics Inc.
947/1050	
1955 L	Synthetic Software, Inc.
2222	Viewgraphics Inc.

Would you cook without tasting?



**Preparing a Culinary Masterpiece is Much Easier
When You Can Taste Your Creation!**

- Using touch for **3D MODELING** can heat up your ability to give form to your inspirations.
- With **FreeForm**, a powerful new way to create 3D MODELS, sculptors and designers can use their sense of touch while modeling on the computer.
- Hands-on quick start classes begin on the hour in the SensAble booth. The tastiest creation will **win a complete FreeForm system** valued at over \$20K, including an IBM IntelliStation.®



SensAble Technologies • Booth #1101

Digital Cameras

Booth	
1767	AJA Video
419	Autologic Information International, Cinema Systems
2347	B&H Photo-Video-Pro Audio
2147	Computer Graphics World
937	Geometrix, Inc.
2219	Grande Vitesse Systems
1960	Journey Education Marketing
2211	Minolta Corporation
1819	Oxberry
1711	Panasonic Broadcast & Television Systems
1004	Professional Marketing Services
311	Real3D
1619/ 947/1050	Sony Electronics Inc.
1215	Sun Microsystems, Inc.
2618	Xybernaut Corporation

Digital Imaging

Booth	
1034	3DMetrics, Inc. (Division of In-Harmony Technology)
501	3D Systems
1955 M	Abvent, Inc.
1837	Advanced Media Production
253	AIST Inc.
1415/	Alias Wavefront
1631	
1910	Alien Skin Software
2001	ARRI
1904	Atomic Power Corporation
419	Autologic Information International, Cinema Systems
2347	B&H Photo-Video-Pro Audio
853	Big Idea Productions, Inc.
2418	Biomorph Interactive Desk
1801	CELCO
2147	Computer Graphics World
2451	Cyra Technologies
2353	Digibotics, Inc.
1811	DigiEffects
2014	Digital Domain, Inc.

2167	Digital Firepower
2029	Discreet
1966	Ex'pression Center for New Media
1261	GESTEL
2219	Grande Vitesse Systems
511	Hash Inc.
2153	IMAGICA Corporation
2023	Infinite Pictures, Inc.
547	Intergraph Computer Systems
1933	LEGASYS International
1560	Lenticular Development, Inc.
1909	Management Graphics, Inc.
2267	Measurand Inc.
1955 H	MENSI, Inc.
1719	MetaCreations Corporation
2211	Minolta Corporation
239	Nothing Real
2235	nStor
1819	Oxberry
2550	Panoram Technologies
1747	Polhemus, Inc.
1004	Professional Marketing Services
311	Real3D
747	REALVIZ
403	Research Systems, Inc.

568	Roland DGA Corporation
2307	San Francisco Imaging Inc.
2629	Scarlett Chou Studio
1201/	SGI
1401	
2452	Sheridan College
951	Sierra Design Labs
1619/	Sony Electronics Inc.
947/1050	
1215	Sun Microsystems, Inc.
2324	Upgrade Technology Inc.
2329	Vancouver Film School
2222	Viewgraphics Inc.
2210	V-Star
1731	Wacom Technology Corporation
1761	Wicks and Wilson Limited

Education

Booth
 1955 M Abvent, Inc.
 1837 Advanced Media Production
 2412 The Art Institutes International
 1904 Atomic Power Corporation
 2635 blaxxun interactive
 451 Cogswell Polytechnical College
 1017 Cycore Computers
 536 Desktop Images
 2353 Digibotics, Inc.
 1475 Digital Hollywood Institute of Media Arts
 1966 Ex'pression Center for New Media
 1900 Fraunhofer CRCG, Inc.
 1261 GESTEL
 2359 Gnomon, Inc. School of Visual Effects
 437 International Fine Arts College
 2231 JLC Cooper Electronics
 1960 Journey Education Marketing
 1025 MUSE Technologies, Inc.
 535 NewTek
 2532 Next Limit SL
 229 The Numerical Algorithms Group, Inc.
 2550 Panoram Technologies
 2438 Savannah College of Art and Design
 1201/ SGI
 1401
 2452 Sheridan College
 1014 SMPTE
 2320 The Software Video Company
 1036 Springer-Verlag
 1215 Sun Microsystems, Inc.
 967 Toronto Ontario Visual Effects Industry
 2057 Trimension Systems
 917 UCLA Center for Digital Innovation
 1833 University of Advancing Computer Technology
 2329 Vancouver Film School
 1731 Wacom Technology Corporation

Electronic Publishing

Booth
 1955 M Abvent, Inc.
 2418 Biomorph Interactive Desk
 1067 Catalogic
 2219 Grande Vitesse Systems
 1666 IMAS Publishing Group
 547 Intergraph Computer Systems
 1960 Journey Education Marketing
 1201/ SGI
 1401
 1036 Springer-Verlag

Encoders/Decoders

Booth
 1767 AJA Video
 552 Ensemble Designs
 1932 FORE Systems, Inc.
 523 Miranda Technologies Inc.
 833 QuVIS
 951 Sierra Design Labs
 1619/ Sony Electronics Inc.
 947/1050
 1215 Sun Microsystems, Inc.
 2618 Xybernaut Corporation

Engineering/Scientific Applications

Booth
 1034 3DMetrics, Inc. (Division of In-Harmony Technology)
 1955 M Abvent, Inc.
 1415/ Alias|Wavefront
 1631
 2147 Computer Graphics World
 1017 Cycore Computers
 2451 Cyra Technologies
 2353 Digibotics, Inc.
 339 Fakespace, Inc.
 1900 Fraunhofer CRCG, Inc.
 1637 Hewlett-Packard
 1947 InterSense, Incorporated
 2231 JLC Cooper Electronics
 321 MathEngine Inc.
 2267 Measurand Inc.
 1955 H MENS I, Inc.
 1025 MUSE Technologies, Inc.
 2532 Next Limit SL
 2235 nStor
 229 The Numerical Algorithms Group, Inc.
 925 n-vision, inc.
 409 Okino Computer Graphics, Inc.
 2550 Panoram Technologies
 2011 Paraform

901 Peak Performance Technologies, Inc.
 1068 Phoenix Technologies Incorporated
 1747 Polhemus, Inc.
 514 Questar Productions
 2311 Raindrop Geomagic, Inc.
 403 Research Systems, Inc.
 1101 SensAble Technologies
 1201/ SGI
 1401
 1014 SMPTE
 1215 Sun Microsystems, Inc.
 1955 P Systems in Motion
 2216 Toyobo Co. Ltd.
 2057 Trimension Systems
 1955 O VARTEC
 1761 Wicks and Wilson Limited

Gaming Support Tools

Booth
 1034 3DMetrics, Inc. (Division of In-Harmony Technology)
 1955 M Abvent, Inc.
 517 Accom, Inc.
 1415/ Alias|Wavefront
 1631
 524 Arete Entertainment
 1447 Avid Technology
 2147 Computer Graphics World
 1017 Cycore Computers
 2353 Digibotics, Inc.
 2200 Digimation, Inc.
 1247 Evans & Sutherland
 937 Geometrix, Inc.
 1261 GESTEL
 2231 JLC Cooper Electronics
 2411 KAYDARA
 1921 LambSoft, Inc.
 518 Linker Systems, Inc.
 321 MathEngine Inc.
 317 Maxon Computer, Inc.
 2267 Measurand Inc.
 535 NewTek
 1011 Nichimen Graphics Inc.
 2067 Not a Number
 409 Okino Computer Graphics, Inc.
 2011 Paraform
 1068 Phoenix Technologies Incorporated
 1747 Polhemus, Inc.
 514 Questar Productions
 2311 Raindrop Geomagic, Inc.
 1201/ SGI
 1401
 1147 Side Effects Software
 1955 P Systems in Motion

GIS/Mapping

Booth
 1900 Fraunhofer CRCG, Inc.
 2235 nStor
 229 The Numerical Algorithms Group, Inc.
 514 Questar Productions
 833 QuVIS
 403 Research Systems, Inc.
 1201/ SGI
 1401
 1215 Sun Microsystems, Inc.
 1955 P Systems in Motion
 1361 TGS
 2618 Xybernaut Corporation

Graphic Art/Design Systems

Booth
 1955 M Abvent, Inc.
 601 Advanced Rendering Technology
 253 AIST Inc.
 1415/ Alias|Wavefront
 1631
 623 auto.des.sys, Inc.
 2418 Biomorph Interactive Desk
 2147 Computer Graphics World
 2353 Digibotics, Inc.
 2029 Discreet
 1261 GESTEL
 2219 Grande Vitesse Systems
 1231 IBM
 456 Imagination in Motion
 437 International Fine Arts College
 317 Maxon Computer, Inc.
 2267 Measurand Inc.
 535 NewTek
 239 Nothing Real
 2550 Panoram Technologies
 1068 Phoenix Technologies Incorporated
 839 Pixologic, Inc.
 1747 Polhemus, Inc.
 1701 Quantel Inc.
 1201/ SGI
 1401
 2452 Sheridan College
 1215 Sun Microsystems, Inc.
 1955 L Synthetik Software, Inc.
 1361 TGS
 2216 Toyobo Co. Ltd.
 2210 V-Star
 1731 Wacom Technology Corporation

Graphics Accelerator Boards

Booth	
1467	3DLabs, Inc.
2335	Appian Graphics
2147	Computer Graphics World
617	Digital Immersion Software Corporation
819	ELSA, Inc.
1247	Evans & Sutherland
611	GigaPixel Corporation
1231	IBM
547	Intergraph Computer Systems
1135	Matrox
1574	PixelFusion Limited
1737	Real Time Visualization
1201/	SGI
1401	
1215	Sun Microsystems, Inc.
2552	System Upgrade, Inc.
915	TNT Technologies
2159	Workstation Users Alliance, Inc.

Graphics Standards Software

Booth	
1955 M	Abvent, Inc.
629	Caligari Corporation
2303	Cebas Computer
409	Okino Computer Graphics, Inc.
1201/	SGI
1401	
1215	Sun Microsystems, Inc.
1955 P	Systems in Motion
1361	TGS
2210	V-Star

Groupware

Booth	
2635	blaxxun interactive
1025	MUSE Technologies, Inc.
951	Sierra Design Labs
1215	Sun Microsystems, Inc.

Haptic Input Devices

Booth	
501	3D Systems
339	Fakespace, Inc.
1947	InterSense, Incorporated
2267	Measurand Inc.
1101	SensAble Technologies
504	SENSE8 Product Line of EAI
2447	Virtual Technologies, Inc.
1052	VRooMCOM

Hardcopy Devices; Photographs/Slides/Printers/ Plotters/3D Rapid Prototyping

Booth	
501	3D Systems
2404	DIMENSION
	3D-SYSTEMS GmbH
2363	Dynamic Graphics
2047	Gentle Giant Studios, Inc.
937	Geometrix, Inc.
2219	Grande Vitesse Systems
1637	Hewlett-Packard
1560	Lenticular Development Inc.
1747	Polhemus, Inc.
1004	Professional Marketing Services
2311	Raindrop Geomagic, Inc.
568	Roland DGA Corporation
2307	San Francisco Imaging Inc.
2324	Upgrade Technology Inc.
1761	Wicks and Wilson Limited

HDTV

Booth	
1767	AJA Video
1659	Amazon/Interactive Effects
1918	Artbeats Digital Film Library
1447	Avid Technology
233	BOXX Technologies, Inc.
2029	Discreet
247	DVS Digital Video, Inc.
518	Linker Systems, Inc.
523	Miranda Technologies Inc.
247	MMS Multi Media Systems
535	NewTek
733	NVIDIA Corporation
1711	Panasonic Broadcast & Television Systems
2163	Post Impressions (Systems) Inc.
1701	Quantel Inc.
833	QuVIS
1201/	SGI
1401	
2452	Sheridan College
951	Sierra Design Labs
1014	SMPTE
1619/	Sony Electronics Inc.
947/1050	
1060	Storage Concepts
1215	Sun Microsystems, Inc.
2222	Viewgraphics Inc.

High Performance Graphics Processors

Booth	
1467	3DLabs, Inc.
601	Advanced Rendering Technology
253	AIST Inc.
611	GigaPixel Corporation
2219	Grande Vitesse Systems
1637	Hewlett-Packard
1231	IBM
547	Intergraph Computer Systems
1135	Matrox
733	NVIDIA Corporation
1574	PixelFusion Limited
1201/	SGI
1401	
1215	Sun Microsystems, Inc.
727	SynaPix, Inc.
915	TNT Technologies
2222	Viewgraphics Inc.

High-Resolution Technologies

Booth	
1415/	Alias Wavefront
1631	
419	Autologic Information International, Cinema Systems
233	BOXX Technologies, Inc.
1801	CELCO
529	Ciprico
247	DVS Digital Video, Inc.
1932	FORE Systems, Inc.
1900	Fraunhofer CRCG, Inc.
1030	Lightwave Communications
2267	Measurand Inc.
523	Miranda Technologies Inc.
247	MMS Multi Media Systems
535	NewTek
733	NVIDIA Corporation
925	n-vision, inc.
1819	Oxberry
2550	Panoram Technologies
1068	PhoeniX Technologies Incorporated
1701	Quantel Inc.
833	QuVIS
1201/	SGI
1401	
951	Sierra Design Labs
1619/	Sony Electronics Inc.
947/1050	
1060	Storage Concepts
1215	Sun Microsystems, Inc.
2057	Trimension Systems
2222	Viewgraphics Inc.
2210	V-Star

Image Based Modeling

Booth	
1034	3DMetrics, Inc. (Division of In-Harmony Technology)
501	3D Systems
1415/	Alias Wavefront
1631	
447	AvatarMe Ltd.
905	Computer Graphics Systems Development Corporation
2147	Computer Graphics World
2451	Cyra Technologies
2353	Digibotics, Inc.
2404	DIMENSION
	3D-SYSTEMS GmbH
937	Geometrix, Inc.
2267	Measurand Inc.
229	The Numerical Algorithms Group, Inc.
1111	Play Incorporated
1747	Polhemus, Inc.
929	Purdue University
833	QuVIS
747	REALVIZ
1201/	SGI
1401	
1147	Side Effects Software
1215	Sun Microsystems, Inc.
727	SynaPix, Inc.
429	SyncMagic
1361	TGS
2216	Toyobo Co. Ltd.
2210	V-Star

Industrial Design

Booth	
1034	3DMetrics, Inc. (Division of In-Harmony Technology)
1955 M	Abvent, Inc.
601	Advanced Rendering Technology
1415/	Alias Wavefront
1631	
623	auto.des.sys, Inc.
2418	Biomorph Interactive Desk
2303	Cebas Computer
1915	Cyberware
1017	Cycore Computers
2353	Digibotics, Inc.
617	Digital Immersion Software Corporation
937	Geometrix, Inc.
1261	GESTEL
1637	Hewlett-Packard
1231	IBM
1560	Lenticular Development Inc.

Industrial Design (continued)	833	QuVIS	Medical Imaging	1619/	Sony Electronics Inc.	
Booth	2311	Raindrop Geomagic, Inc.	Software/Applications	947/1050		
317	Maxon Computer, Inc.	403	Booth	1215	Sun Microsystems, Inc.	
1025	MUSE Technologies, Inc.	2438	1034	3DMetrics, Inc.	2552	System Upgrade, Inc.
2532	Next Limit SL			(Division of In Harmony	915	TNT Technologies
925	n-vision, inc.	504		Technology)	1052	VRoomMCOM
409	Okino Computer		2353	Digibotics, Inc.	2618	Xybernaut Corporation
	Graphics, Inc.	1201/	454	Eyetrionics		
2550	Panoram Technologies	1401	1900	Fraunhofer CRCG, Inc.		
2011	Paraform	951	457	Fujitsu Takamisawa	Motion Capture	
1747	Polhemus, Inc.	1215		America, Inc./ITU	Booth	
929	Purdue University	1361		Research, Inc.	1034	3DMetrics, Inc.
2311	Raindrop Geomagic, Inc.	1955 O	1261	GESTEL		(Division of In Harmony
2457	Rhino/Robert McNeel &	1830	2231	JLCooper Electronics		Technology)
	Associates		317	Maxon Computer, Inc.	253	AIST Inc.
2438	Savannah College of Art		1025	MUSE Technologies, Inc.	1415/	Alias Wavefront
	and Design		901	Peak Performance	1631	
1101	SensAble Technologies	Input Devices		Technologies, Inc.	1967	B & L Engineering
1201/	SGI	Booth	1747	Polhemus, Inc.	2147	Computer Graphics
1401		1034	833	QuVIS		World
1147	Side Effects Software		2311	Raindrop Geomagic, Inc.	1375	Digits 'n Art Software inc.
1215	Sun Microsystems, Inc.	501	403	Research Systems, Inc.	454	Eyetrionics
1361	TGS	2000	504	SENSE8 Product Line	2639	FAMOUS Technologies
2057	Trimension Systems			of EAI	1914	ID8 Media
1761	Wicks and Wilson	2147	1201/	SGI	2023	Infinite Pictures, Inc.
	Limited		1401		1947	InterSense, Incorporated
		1915	1215	Sun Microsystems, Inc.	2411	KAYDARA
		2451	1361	TGS	1921	LambSoft, Inc.
		2353	1761	Wicks and Wilson	2267	Measurand Inc.
		2404		Limited	2437	Motion Analysis
						Corporation
Information Visualization		457	Mobile Computing		901	Peak Performance
Booth			Booth		1068	Technologies, Inc.
1034	3DMetrics, Inc. (Division		1900	Fraunhofer CRCG, Inc.		PhoeniX Technologies
	of In-Harmony		1231	IBM		Incorporated
	Technology)		1805	Sharp Electronics	1747	Polhemus, Inc.
1955 M	Abvent, Inc.	937		Corporation	929	Purdue University
601	Advanced Rendering	2219			1201/	SGI
	Technology	1947			1401	
1415/	Alias Wavefront	2231			967	Toronto Ontario Visual
1631		1933				Effects Industry
419	Autologic Information	1125			1939	Vicon Motion Systems
	International, Cinema				2447	Virtual Technologies, Inc.
	Systems				1052	VRoomMCOM
1017	Cycore Computers	2267			2210	V-Star
2451	Cyra Technologies	1955 H	Monitors and Displays		847	X-IST Realtime
2404	DIMENSION	1819	Booth			Technologies GmbH
	3D-SYSTEMS GmbH	1068	2347	B&H Photo-Video-Pro		
1247	Evans & Sutherland			Audio		
1900	Fraunhofer CRCG, Inc.	2163	1431	Compaq Computer		
1637	Hewlett-Packard			Corporation		
1231	IBM	568	2147	Computer Graphics		
2023	Infinite Pictures, Inc.			World		
1947	InterSense, Incorporated	1101	2219	Grande Vitesse Systems		
2411	KAYDARA	504	1231	IBM		
1560	Lenticular Development		547	Intergraph Computer		
	Inc.	951		Systems		
439	LightWork Design	1215	1030	Lightwave		
1955 H	MENSI, Inc.	2552		Communications		
1719	MetaCreations	915	2235	nStor		
	Corporation	2328	925	n-vision, inc.		
1025	MUSE Technologies, Inc.		1711	Panasonic Broadcast &		
229	The Numerical	1052		Television Systems		
	Algorithms Group, Inc.		2550	Panoram Technologies		
733	NVIDIA Corporation		1201/	SGI		
2550	Panoram Technologies		1401			
1747	Polhemus, Inc.		1805	Sharp Electronics		
929	Purdue University			Corporation		

Choose Quality and Excellence. Choose Sheridan!

Sheridan College leads with:

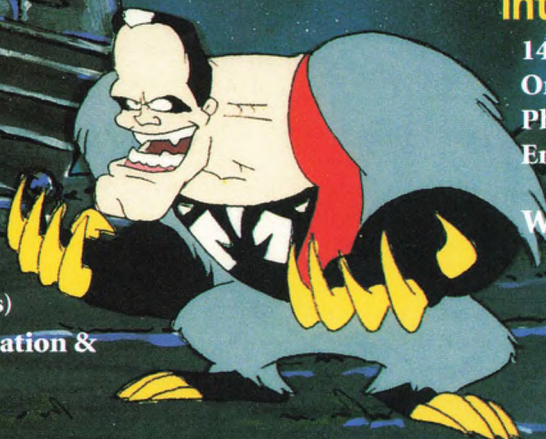
- an outstanding international reputation • career-oriented programs • hands-on skills training
- state-of-the-art facilities, leading-edge technology • and only 30 minutes to downtown Toronto.

Choose from over 90 programs including:

- Animation – Classical
- Animation Filmmaking
- Computer Animation
- Graphic Design
- Interactive Multimedia
- International Summer School of Animation
- New Media Design (formerly Computer Graphics)
- Sheridan Centre for Animation & Emerging Technologies (opening September 2000)

Sheridan International Services

1430 Trafalgar Road, Oakville,
Ontario L6H 2L1 CANADA
Phone: (905) 815-4007
Email: international@sheridanc.on.ca
Web: www.sheridanc.on.ca



Multimedia/Hypermedia

Booth		2231
1955 M	Abvent, Inc.	439
253	AIST Inc.	518
1767	AJA Video	1135
1910	Alien Skin Software	2317
2335	Appian Graphics	535
2347	B&H Photo-Video-Pro Audio	409
1967	B & L Engineering	929
827	Be, Incorporated	2438
2635	blaxxun interactive	1201/
2547	Boris FX	1401
629	Caligari Corporation	2452
1067	Catalogic	327
1936	Charles River Media	1036
1431	Compaq Computer Corporation	1215
1017	Cycore Computers	915
2451	Cyra Technologies	917
2353	Digibotics, Inc.	1830
2014	Digital Domain, Inc.	2210
617	Digital Immersion Software Corporation	1731
1966	Ex'pression Center for New Media	
1261	GESTEL	
2219	Grande Vitesse Systems	
1231	IBM	
1914	ID8 Media	
1861	InSpeck inc.	
1853	ISLIP Media, Inc.	

JLCooper Electronics	2231
LightWork Design	439
Linker Systems, Inc.	518
Matrox	1135
Microboards Technology	2317
NewTek	535
Okino Computer Graphics, Inc.	409
Purdue University	929
Savannah College of Art and Design	2438
SGI	1201/
Sheridan College	1401
Sobrio International	2452
Springer-Verlag	327
Sun Microsystems, Inc.	1036
TNT Technologies	1215
UCLA Center for Digital Innovation	915
Virtual 3D Incorporated	917
V-Star	1830
Wacom Technology Corporation	2210

Networking; Hardware/Software/Services

Booth		2231
1447	Avid Technology	439
529	Ciprico	518
2227	DataDirect Networks	1135
2537	Exabyte Corporation	2317
1932	FORE Systems, Inc.	535
2219	Grande Vitesse Systems	409
2008	Media 100 Inc.	929
1025	MUSE Technologies, Inc.	2438
2235	nStor	1201/
2163	Post Impressions (Systems) Inc.	1401
1815	SBS Technologies, Inc.	2452
327	Connectivity Products	327
1215	Sobrio International	1036
915	Sun Microsystems, Inc.	1215
2222	TNT Technologies	915
2258	Viewgraphics Inc.	917
	Western Scientific	1830

OEM Components

Booth		2231
1034	3DMetrics, Inc. (Division of In-Harmony Technology)	439
1955 M	Abvent, Inc.	518
1767	AJA Video	1135
2335	Appian Graphics	2317
2000	Ascension Technology Corporation	535
2623	Consensus Corporation	409
547	Intergraph Computer Systems	929
2231	JLCooper Electronics	2438
1933	LEGASYS International	1201/
317	Maxon Computer, Inc.	1401
523	Miranda Technologies Inc.	2452
2235	nStor	327
1068	Phoenix Technologies Incorporated	1036
1747	Polhemus, Inc.	1215
833	QuVIS	915
1815	SBS Technologies, Inc.	917
1215	Connectivity Products	1830
1955 P	Sun Microsystems, Inc.	2210
915	Systems in Motion	1731
2222	TNT Technologies	
	Viewgraphics Inc.	

Paint Systems

Booth	
1415/	Alias Wavefront
1631	
1659	Amazon/Interactive Effects
1447	Avid Technology
827	Be, Incorporated
536	Desktop Images
2200	Digimation, Inc.
1375	Digits 'n Art Software inc.
2029	Discreet
2262	Inscriber Technology Corporation
518	Linker Systems, Inc.
1135	Matrox
317	Maxon Computer, Inc.
535	NewTek
1011	Nichimen Graphics Inc.
839	Pixologic, Inc.
1701	Quantel Inc.
1955 L	Synthetik Software, Inc.
659	Toon Boom Technologies

PC Add-on Products

Booth	
1767	AJA Video
2347	B&H Photo-Video-Pro Audio
2353	Digibotics, Inc.
1811	DigiEffects
611	GigaPixel Corporation
2231	JLCooper Electronics
1933	LEGASYS International
1135	Matrox
733	NVIDIA Corporation
1068	PhoeniX Technologies Incorporated
1574	PixelFusion Limited
1815	SBS Technologies, Inc. Connectivity Products
915	TNT Technologies
2222	Viewgraphics Inc.

PC-based Systems

Booth	
2347	B&H Photo-Video-Pro Audio
2434	CamSys, Inc.
1159	Dell Computer Corporation
2353	Digibotics, Inc.
247	DVS Digital Video, Inc.
1247	Evans & Sutherland
611	GigaPixel Corporation
2219	Grande Vitesse Systems
1637	Hewlett-Packard
1231	IBM
547	Intergraph Computer Systems
1560	Lenticular Development Inc.
439	LightWork Design
1135	Matrox
523	Miranda Technologies Inc.
247	MMS Multi Media Systems
1025	MUSE Technologies, Inc.
1068	PhoeniX Technologies Incorporated
1111	Play Incorporated
311	Real3D
747	REALVIZ
1060	Storage Concepts
1215	Sun Microsystems, Inc.
727	SynaPix, Inc.
915	TNT Technologies
2222	Viewgraphics Inc.
1052	VRooMCOM

Projectors; Video, HDTV

Booth	
1767	AJA Video
2347	B&H Photo-Video-Pro Audio
2025	BARCO Projection Systems America
2147	Computer Graphics World
1030	Lightwave Communications
523	Miranda Technologies Inc.
1711	Panasonic Broadcast & Television Systems
2550	Panoram Technologies
1805	Sharp Electronics Corporation
1619/	Sony Electronics Inc.
947/1050	
1215	Sun Microsystems, Inc.
2057	Trimension Systems

Publications

Booth	
2165	Addison-Wesley
566	Advanced Imaging Magazine
528/	Advanstar Digital Media Group
1927	
1829	A K Peters, Ltd.
957	Animation Magazine
2318	ARTBYTE
1028	ASC-American Cinematographer
2315	Cambridge University Press
1936	Charles River Media
2268	Communication Arts
905	Computer Graphics Systems Development Corporation
2147	Computer Graphics World
1851	Computer Publishing Group
532	The Coriolis Group
2652	Creative Planet
510	Desktop Engineering Magazine
2650	The Hollywood Reporter
2424	I.D. Magazine
1024	IEEE Computer Society
1666	IMAS Publishing Group
1571	International Cinematographers Guild & International Cinematographer Magazine
1825	Intertec Publishing
1946	Knowledge Industry Publications
1035	Miller Freeman, Inc.
2038	Morgan Kaufmann Publishers, an imprint of Academic Press
727	NAB2000
2436	NASA Tech Briefs
931	New Riders Publishing (Formerly Macmillan)
550	Producción & Distribución Corporation
1908	Silicon Graphics World
1014	SMPTE
1036	Springer-Verlag
1066	Systems Design Limited (IdN Magazine)
967	Toronto Ontario Visual Effects Industry
2546	Variety
2416	John Wiley & Sons, Inc.

Rendering

Booth	
1955 M	Abvent, Inc.
601	Advanced Rendering Technology
253	AIST Inc.
1415/	Alias Wavefront
1631	
524	Arete Entertainment
1904	Atomic Power Corporation
623	auto.des.sys, Inc.
853	Big Idea Productions, Inc.
233	BOXX Technologies, Inc.
629	Caligari Corporation
2303	Cebas Computer
2147	Computer Graphics World
1017	Cycore Computers
617	Digital Immersion Software Corporation
2404	DIMENSION
	3D-SYSTEMS GmbH
2029	Discreet
1966	Ex'pression Center for New Media
457	Fujitsu Takamisawa America, Inc./ITU Research, Inc.
1261	GESTEL
2219	Grande Vitesse Systems
511	Hash Inc.
1637	Hewlett-Packard
1231	IBM
1914	ID8 Media
2153	IMAGICA Corporation
547	Intergraph Computer Systems
2411	KAYDARA
1560	Lenticular Development Inc.
439	LightWork Design
317	Maxon Computer, Inc.
2211	Minolta Corporation
535	NewTek
2532	Next Limit SL
1011	Nichimen Graphics Inc.
2067	Not a Number
229	The Numerical Algorithms Group, Inc.
409	Okino Computer Graphics, Inc.
2011	Paraform
1839	Pixar Animation Studios
1574	PixelFusion Limited
839	Pixologic, Inc.
1111	Play Incorporated
2163	Post Impressions (Systems) Inc.
929	Purdue University
1701	Quantel Inc.
514	Questar Productions
2311	Raindrop Geomagic, Inc.
403	Research Systems, Inc.

Software (other)

Booth	
2462	3D Pipeline Corporation
1653	5D
1659	Amazon/Interactive Effects
1918	Artbeats Digital Film Library
1904	Atomic Power Corporation
1936	Charles River Media
719	Crater Software
407	Creation Engine LLC
2032	CYBELIUS Software, Inc.
1017	Cycore Computers
2353	Digibotics, Inc.
2200	Digimation, Inc.
1261	GESTEL
1853	ISLIP Media, Inc.
2231	JLCooper Electronics
1960	Journey Education Marketing
1560	Lenticular Development Inc.
439	LightWork Design
321	MathEngine Inc.
1719	MetaCreations Corporation
2235	nStor
409	Okino Computer Graphics, Inc.
1000	Photron USA
1111	Play Incorporated
1701	Quantel Inc.
514	Questar Productions
833	QuVIS
311	Real3D
747	REALVIZ
403	Research Systems, Inc.
1201/	SGI
1401	
327	Sobrio International
1215	Sun Microsystems, Inc.
727	SynaPix, Inc.
429	SyncMagic
2057	Trimension Systems
917	UCLA Center for Digital Innovation
2210	V-Star

**Storage Devices;
Tape/Disk/CD-ROM**

Booth	
1447	Avid Technology
328	Baydel North America
1067	Catalogic
529	Ciprico
2623	Consensus Corporation
2227	DataDirect Networks
1855	DISC, Incorporated
247	DVS Digital Video, Inc.
2537	Exabyte Corporation
2219	Grande Vitesse Systems
1933	LEGASYS International
2008	Media 100 Inc.
2521	MetaStor Storage Solutions
2317	Microboards Technology
247	MMS Multi Media Systems
2235	nStor
2163	Post Impressions (Systems) Inc.
833	QuVIS
1201/	SGI
1401	
951	Sierra Design Labs
1866	Silicon Gear Corporation
1619/	Sony Electronics Inc.
947/1050	
1060	Storage Concepts
1667	StorageTek
2552	System Upgrade, Inc.
915	TNT Technologies
2222	Viewgraphics Inc.
2258	Western Scientific

Systems Integrators

Booth	
1767	AJA Video
905	Computer Graphics Systems Development Corporation
2219	Grande Vitesse Systems
1933	LEGASYS International
1201/	SGI
1401	
1619/	Sony Electronics Inc.
947/1050	
1667	StorageTek
2552	System Upgrade, Inc.
2057	Trimension Systems
1052	VRooMCOM

**Teleconferencing/
Collaborative Products**

Booth	
447	AvatarMe Ltd.
1900	Fraunhofer CRCG, Inc.
1025	MUSE Technologies, Inc.
1955 N	Pac Bell Wireless
2550	Panoram Technologies
504	SENSE8 Product Line of EAI
1619/	Sony Electronics Inc.
947/1050	
1215	Sun Microsystems, Inc.
2618	Xybernaut Corporation

**User Interface Tools and
Techniques**

Booth	
2000	Ascension Technology Corporation
447	AvatarMe Ltd.
629	Caligari Corporation
339	Fakespace, Inc.
1900	Fraunhofer CRCG, Inc.
1947	InterSense, Incorporated
2231	JLCooper Electronics
1025	MUSE Technologies, Inc.
925	n-vision, inc.
1068	Phoenix Technologies Incorporated
1101	SensAble Technologies
327	Sobrio International
1036	Springer-Verlag
1361	TGS
1955 O	VARTEC

Virtual Reality

Booth	
1034	3DMetrics, Inc. (Division of In-Harmony Technology)
1955 M	Abvent, Inc.
601	Advanced Rendering Technology
2000	Ascension Technology Corporation
447	AvatarMe Ltd.
1967	B & L Engineering
2635	blaxxun interactive
905	Computer Graphics Systems Development Corporation
2147	Computer Graphics World
2032	CYBELIUS Software, Inc.
1915	Cyberware
1017	Cycore Computers
2404	DIMENSION 3D-SYSTEMS GmbH
1247	Evans & Sutherland
339	Fakespace, Inc.
1900	Fraunhofer CRCG, Inc.

457	Fujitsu Takamisawa America, Inc./ITU Research, Inc.
937	Geometrix, Inc.
1914	ID8 Media
456	Imagination in Motion
1861	InSpeck inc.
547	Intergraph Computer Systems
1947	InterSense, Incorporated
2411	KAYDARA
1560	Lenticular Development Inc.
1030	Lightwave Communications
321	MathEngine Inc.
2267	Measurand Inc.
1025	MUSE Technologies, Inc.
925	n-vision, inc.
1859	Orad Hi-Tec Systems
2550	Panoram Technologies
901	Peak Performance Technologies, Inc.
1068	Phoenix Technologies Incorporated
1747	Polhemus, Inc.
929	Purdue University
833	QuVIS
2311	Raindrop Geomagic, Inc.
2457	Rhino/Robert McNeel & Associates
504	SENSE8 Product Line of EAI
1201/	SGI
1401	
1036	Springer-Verlag
1955 B	Summit3D/Berryvale Software Solutions
1215	Sun Microsystems, Inc.
1955 P	Systems in Motion
1361	TGS
2216	Toyobo Co. Ltd.
2057	Trimension Systems
2329	Vancouver Film School
1955 O	VARTEC
1830	Virtual 3D Incorporated
2447	Virtual Technologies, Inc.
1052	VRooMCOM

Visual Effects Software

Booth	
1034	3DMetrics, Inc. (Division of In-Harmony Technology)
1653	5D
1955 M	Abvent, Inc.
601	Advanced Rendering Technology
253	AIST Inc.
1415/	Alias Wavefront
1631	
1910	Alien Skin Software
1659	Amazon/Interactive Effects

Workstations

Booth
 2325 Anthro Corporation
 2418 Biomorph Interactive Desk
 233 BOXX Technologies, Inc.
 1431 Compaq Computer Corporation
 2147 Computer Graphics World
 1159 Dell Computer Corporation
 2219 Grande Vitesse Systems
 1637 Hewlett-Packard
 1231 IBM
 701 Intel Corporation
 547 Intergraph Computer Systems
 1956 Minicomputer Exchange
 1747 Polhemus, Inc.
 1201/ SGI
 1401
 2320 The Software Video Company
 1215 Sun Microsystems, Inc.
 2552 System Upgrade, Inc.
 915 TNT Technologies
 1955 O VARTEC
 2258 Western Scientific
 2159 Workstation Users Alliance, Inc.
 667 ZACKBACK International, Inc.

Miscellaneous**2D Software for Animation Production**

347 MediaPEGS

3D Color Digitizer

2211 Minolta Corporation

3D Graphics

532 The Coriolis Group

3D Inkjet Printing

2307 San Francisco Imaging Inc.

3D IP Cores

611 GigaPixel Corporation

3D Laser Scanners

1955 H MENS I, Inc.

3D Scanners

2404 DIMENSION
 3D-SYSTEMS GmbH
 937 Geometrix, Inc.

3D Texture Mapping

1918 Artbeats Digital Film Library

Animation Production Management Tool

2428 Pepper's Ghost Productions

Book Publishing

2165 Addison-Wesley

Broadcast Design Software

1904 Atomic Power Corporation

Caid

1261 GESTEL

CDR Duplicators

2431 MediaFORM

Character Generators

2262 Inscrber Technology Corporation

Clothing Technology

1761 Wicks and Wilson Limited

Computer Animation/Special Effects

1567 Blue Sky Studios, Inc.

Computer Bus Connectivity

1815 SBS Technologies, Inc. Connectivity Products

Computer Chairs

667 ZACKBACK International, Inc.

Consumer 3D Graphics Software

439 LightWork Design

Contract Programming and Art

2462 3D Pipeline Corporation

Digital Color Motion Picture Film Recorders

1801 CELCO

Digital Film Output

419 Autologic Information International, Cinema Systems

Digital Lab

2001 ARRI

Digital Security for all Media

1900 Fraunhofer CRCG, Inc.

Disk Arrays

2623 Consensus Corporation

Dome Theater Systems

1247 Evans & Sutherland

DVD Authoring Systems

1135 Matrox
 2317 Microboards Technology

Entertainment

1461 The Walt Disney Company

Exhibition

2026 IMAGINA-INA

Facial Animation

2639 FAMOUS Technologies

Film Recorders

1909 Management Graphics, Inc.
 2324 Upgrade Technology Inc.

Film Scanners

1819 Oxberry

Financing

1167 Balboa Capital

Graphic Software

1601 Adobe Systems

Head-Mounted Displays

905 Computer Graphics Systems Development Corporation
 925 n-vision, inc.

High-Performance 3D Under Linux

1955 A Precision Insight Inc.

High Speed RAID Arrays

328 Baydel North America

Internet Television

2210 V-Star

Labor Representation for Motion Pictures/Television

2168 I.A.T.S.E. Local 16

Landscape Visualization

514 Questar Productions

LIPSYNC Animation

429 SyncMagic

Matchmoving

747 REALVIZ

Matrix-switching

1030 Lightwave Communications

Matte Painting

2167 Digital Firepower

Media Server (digital asset management and SAN)

2219 Grande Vitesse Systems

Memory Upgrades and Peripherals

915 TNT Technologies

Motion Tracking

1947 InterSense, Incorporated

Multiple Monitor Graphics Cards

2335 Appian Graphics

New Media Document Management Tools

327 Sobrio International

Open Source

1955 P Systems in Motion

Performers Guild

2446 Screen Actors Guild

Professional Association/Membership

1014 SMPTE

RAID & JBOD Arrays

1866 Silicon Gear Corporation

RAID Storage

2235 nStor
 1060 Storage Concepts

RAID Systems

1933 LEGASYS International

Real-time 3D Development Software

504 SENSE8 Product Line of EAI

Reverse Engineering

2311 Raindrop Geomagic, Inc.

Scalable Server/Network-Attached Storage

2521 MetaStor Storage Solutions

Sculpting-toy Design and Prototypes

2047 Gentle Giant Studios, Inc.

SD & HD DDRs

951 Sierra Design Labs

Search and Recruiting Firm

955 Scientific Placement, Inc.

		Advertiser Index	
Softimage 3D Training Videos 1955 I INTENT Productions		Adobe Magazine	107
Software & Computer Training 558 ViaGrafix		AJA Video	161
Stock Photography/Artwork 2363 Dynamic Graphics		The Art Institutes International	173
Synchronization Products 2231 JLC Cooper Electronics		auto.des.sys, Inc.	111
Technical/Professional Publishing		Biomorph	161
931 New Riders Publishing (formerly Macmillan)		Charles River Media	171
Telecommunications; Wireless Services		Computer Graphics World	151
1955 N Pac Bell Wireless		Cyberware	119
Test & Measuring Equipment; Programmable RGB Video Generators		Digital Media Net	169
2627 Leader Instruments Corporation		The Digital Video Conference & Exposition	121
Training Videos/CD's		Hewlett Packard	125
2454 MacAcademy/Windows AcademyVideo Editing		The Hollywood Reporter	127
1701 Quantel Inc.		IBM	129
Video Focused Website Development		Intel	130
1853 ISLIP Media, Inc.		Miller Freeman	137
Video Game & CG Feature Film Production		Morgan Kaufmann Publishers	139
2458 Square		New Media Magazine	157
Video Servers		Savannah College of Art & Design	159
517 Accom, Inc.		Screen Actors Guild	145
247 DVS Digital Video, Inc.		SensAble Technologies	115, 153, 163
247 MMS Multi Media Systems		SGI	147
Virtual Studios		Sheridan College	167
1859 Orad Hi-Tec Systems		Side Effects Software	149
Visual Effects		SIGGRAPH 2000	178
2014 Digital Domain, Inc.		Square	117
2247 PDI (Pacific Data Images)		Virtual Technologies, Inc.	155
967 Toronto Ontario Visual Effects Industry			
Web-based News and Information Service			
2652 Creative Planet			

As an Art Institute student, you'll build upon your natural creative talent and receive hands-on training on state-of-the-industry technology. Come graduation, you'll have a portfolio to prove you've got what it takes to deliver on the job. For more information on our programs, call us.

You are our most important asset.



She is your most important resource.

The Art Institute graduate possesses creative savvy, technical know-how and problem-solving capabilities. In other words, the skills employers look for in a new hire. For more information on our career placement services, call us.

- | | |
|---|---|
| <ul style="list-style-type: none"> • Audio Production • Broadcasting • Computer Aided Drafting and Design • Computer Animation • Culinary Arts • Culinary Management • Fashion Design • Fashion Marketing • Graphic Design | <ul style="list-style-type: none"> • Industrial Design Technology • Interior Design • Multimedia • Photography • Restaurant and Catering Management • Video Production • Visual Merchandising • Web Site Administration |
|---|---|

Not all programs offered at all schools.

With locations in:

Atlanta, GA; Chicago, IL; Dallas, TX; Denver, CO; Fort Lauderdale, FL; Houston, TX; Los Angeles, CA*; Minneapolis, MN; New York, NY; Philadelphia, PA; Phoenix, AZ**; Pittsburgh, PA; Portland, OR; San Francisco, CA; Schaumburg, IL***; and Seattle, WA.

* The Art Institute of Los Angeles is an additional location of The Art Institute of Pittsburgh.
 ** The Art Institute of Phoenix is an additional location of The Colorado Institute of Art (Denver).
 *** The Illinois Institute of Art at Schaumburg is an additional location of The Illinois Institute of Art at Chicago.

Individual job search assistance. • Financial aid for those who qualify.

1-800-275-2440

www.aii.edu

Ai The Art Institutes InternationalSM

300 Sixth Avenue Pittsburgh, PA 15222-2598

The SIGGRAPH Organization

Information booths representing each of these areas are located in the South Lobby of the Los Angeles Convention Center. Visit these booths for more information on services and activities.

The SIGGRAPH Organization

SIGGRAPH is ACM's Special Interest Group on Computer Graphics and Interactive Techniques. In the span of 30 years, SIGGRAPH has grown from a handful of computer graphics enthusiasts to a diverse membership including artists, engineers, animators, filmmakers, software and hardware developers, scientists, mathematicians, and other professionals in the field of computer graphics. In addition to its own annual conference, SIGGRAPH serves the worldwide graphics community by sponsoring focused conferences, professional chapters, awards, grants, educational resources, online resources, public policy, and the SIGGRAPH Video Review. Be a part of the SIGGRAPH Organization by becoming a SIGGRAPH member. Memberships start at \$29.

SIGGRAPH Organization Forum

Room 306

Thursday 12 August 12:15 - 1:30 pm

SIGGRAPH invites you to hear about the latest developments in our year-round activities and about our plans for the future, to meet the volunteers who make these activities work, and to tell us what the SIGGRAPH organization can do to help you between our annual conferences. This year we highlight the celebration of SIGGRAPH's 30th year as well as several other projects. Everyone is welcome!

Benefits of SIGGRAPH Membership

SIGGRAPH members receive four issues of the quarterly newsletter *Computer Graphics*, which contains articles on current topics in CG and columns by CG leaders on art and computer graphics, international computer graphics, chapter activities, education, pioneers, and graphics standards. For more information, see: www.siggraph.org/newsletter

SIGGRAPH members also receive discounted registrations for the annual conference as well as reduced registration fees for other events including Web 3D, Interactive 3D Graphics, Volume Visualization, Computational Geometry, Implicit Surfaces, User Interface Software and Technology, Autonomous Agents, Solid Modeling, Graphics Hardware Workshop, Implicit Surfaces Workshop, Parallel Visualization, and Graphics Symposium.

SIGGRAPH members also receive discounts on publications from the annual conference publications and from other events including Computational Geometry, Multimedia, User Interface Software and Technology, Graphics Interface, Volume Visualization, IEEE Visualization, Interactive 3D Graphics, Solid Modeling, Rendering, and Parallel Rendering. Members may also access the SIGGRAPH publications in ACM's Digital Library. For more information, see: www.acm.org/dl

Association for Computing Machinery

ACM, the world's first and largest computing society, serves as an umbrella organization for information-technology professionals. Benefits of membership include discounts on cutting-edge magazines, journals, books, and conferences. ACM members may also subscribe to the online Digital Library, which contains six years of publication archives and conference proceedings, 22 high-tech publications, and a state-of-the-art search engine. Computer graphics professionals who join both ACM and SIGGRAPH are eligible for discounted subscriptions to *ACM Transactions on Graphics* and the *Journal of Graphics Tools*. For more information, see: www.acm.org

Professional Chapters

Professional Chapters of ACM SIGGRAPH exist in 35 cities in 12 countries around the world. They form an international multi-cultural network of the people who develop, continue, share, and extend the work and achievements presented at the annual conference. Each chapter includes members involved in education, the arts, research, development, industry, and entertainment who are interested in the development of computer graphics and its related technologies and applications. For more information, see: www.siggraph.org/chapters

SIGGRAPH One More Time

The SIGGRAPH One More Time booth offers attendees the opportunity to purchase publications from previous SIGGRAPH-sponsored conferences and workshops. For more information, see: www.siggraph.org/publications

Education

SIGGRAPH supports both computer graphics education and the use of computer graphics in education with curriculum studies, a quarterly newsletter for educators, and other educational projects. The SIGGRAPH Education booth features SPACE (a juried exhibition of student animations and posters, and a display of student slides submitted by faculty from around the world) and SPICE, a juried exhibition of student interactive projects. For more information, see: www.education.siggraph.org

SIGGRAPH Video Review

Since 1979, SIGGRAPH Video Review, the world's most widely circulated video-based publication, has illustrated the latest concepts in computer graphics and interactive techniques. Over 130 issues provide an unequalled opportunity to study advanced computer graphics theory and applications. SIGGRAPH Video Review tapes are available at SIGGRAPH 99 in NTSC VHS and PAL VHS. For more information, see: www.siggraph.org/svr

SIGGRAPH 2000

New Orleans, Louisiana USA
23-28 July 2000
www.siggraph.org/s2000

Join us next summer in New Orleans, when the turn-of-the-century magic of computer graphics and interactive techniques will amaze 30,000 enthusiasts from around the world. Do you have the skill, energy, and sense of adventure it takes to help us create this major international event? Join us at Get Involved (Wednesday 11 August, 5:30 - 7 pm) or meet us at the SIGGRAPH 2000 booth. Meet the conference committee. Pick up a copy of the SIGGRAPH 2000 Call for Participation. Volunteer for the next generation of computer graphics breakthroughs and help make it a reality in New Orleans! For more information, see: www.siggraph.org/s2000

The Eurographics/SIGGRAPH Workshop on Graphics Hardware

A highly visible, established international forum for exchanging experience and knowledge related to computer graphics hardware. This year's workshop is 8-9 August 1999. For more information, see: www.merl.com/hwws99/

Volunteers!

SIGGRAPH relies heavily on volunteer support. As a member, you are encouraged to make a difference in the computer graphics community by volunteering to work on the annual conference, other conferences, professional chapters, educational efforts, or many other activities. Stop by any of the SIGGRAPH organization booths, come to the SIGGRAPH Organization Forum, or attend the Get Involved gathering. We need you to help us make a difference! For more information, see: www.siggraph.org/volunteering/

Get Involved

Room 306

Wednesday 11 August - 5:30 - 7 pm

Some common questions about SIGGRAPH: What is it? Who's in charge? Who plans and produces this complex annual event? How can I let SIGGRAPH know what I would do to make it even better?

The best source for answers: SIGGRAPH Get Involved. Here's your chance to meet the current group of SIGGRAPH volunteers – from the organization and conference committees – for informative conversations about what they do and how you can help.

All SIGGRAPH 99 attendees, exhibitors, and contributors are invited. All questions and comments are welcome. Tell us what you want to do, and we'll help you find the right opportunity!

Committees

SIGGRAPH 99 Committee

SIGGRAPH 99
Conference Chair
Warren N. Waggenspack, Jr.
Louisiana State University

SIGGRAPH Conference Chief
Staff Executive
Dino Schweitzer
Capstone

Accounting / Conference
Management / Copy
Coordination / Marketing
and Media / Registration
**Smith, Bucklin, &
Associates, Inc.**

Art Gallery: technOasis
Marla Schweppe
Rochester Institute of
Technology

Audio/Visual Support
AVW Audio Visual, Inc.

Computer Animation Festival
Brian Blau
SGI

Conference Administration
Capstone

Courses
Barb Helfer
The Ohio State University

Creative Applications Lab:
The Digital Cafe
Gudrun Enger
SGI

Electronic Schoolhouse:
Educators Program | sigKIDS|
Community Outreach
Jodi Giroux
Scarsdale Public Schools
Anne Richardson
StarMedia
Jill Smolin
Cinesite Visual Effects

Emerging Technologies: The
Millennium Motel
Kathryn Saunders
Royal Ontario Museum

Exhibition Management
Hall-Erickson, Inc.

Graphic Design /
Editing / Web Site
Q LTD

International Services
Linda Hersom
James Scidmore
Scidmore, Hersom,
& Others Inc.

GraphicsNet
David Spoelstra
MediaMachine

Organizational Development
Gayle Magee
Independent Consultant

Panels
Jeff Jortner
Sandia National
Laboratories

Papers
Alyn Rockwood
Power Take-Off
Software, Inc.

Pathfinders
John Fujii
Hewlett-Packard Company

Publications
Stephen N. Spencer
The Ohio State University

Service Contractor
**Freeman Decorating
Company**

Sketches & Applications
Richard Kidd
Cinesite Visual Effects

Student Volunteers
Ron Roff
Northrop Grumman
California Microwave
Systems

The Studio
Anshuman Razdan
Arizona State University

Travel Agent
Travel Technology Group

SIGGRAPH 98
Conference Chair
Walt Bransford
Thrillistic

SIGGRAPH 2000
Conference Chair
Jackie White
California State University,
Los Angeles

SIGGRAPH 2001
Conference Chair
Lynn Pocock
New York Institute of
Technology

SIGGRAPH Executive Committee

SIGGRAPH Chair
Judith R. Brown
The University of Iowa

Vice Chair
Alan Chalmers
University of Bristol

Treasurer
Garry Paxinos
Metro Link Inc.

Past Chair
Steve Cunningham
California State University
Stanislaus

Director for Communications
John C. Hart
Washington State
University

Director for Education
Mike McGrath
Colorado School of Mines

Director for Professional
Chapters
Scott Lang
The Academy for the
Advancement of Science
& Technology

Directors-at-Large
Nick England
University of North
Carolina at Chapel Hill

Theresa-Marie Rhyne
Lockheed Martin/U.S. EPA
Visualization Center

Director for Publications
Stephen N. Spencer
The Ohio State University

SIGGRAPH 99
Conference Chair
Warren N. Waggenspack, Jr.
Louisiana State University

SIGGRAPH Conference
Advisory Group Chair
John Fujii
Hewlett-Packard Company

SIGGRAPH Conference Chief
Staff Executive
Dino Schweitzer
Capstone

SIGGRAPH 30th Year Anniversary Celebration

This year, SIGGRAPH is celebrating its 30th year. Those of you who attended the SIGGRAPH 98 conference are probably asking, "Didn't SIGGRAPH just celebrate 25 years?"

The answer is yes ... and no. SIGGRAPH 98 marked the 25th SIGGRAPH annual conference, celebrated with exhibits and activities to showcase the history of the SIGGRAPH conference and the history of computer graphics. However, ACM SIGGRAPH existed as an organization for five years before holding its first conference.

The Pathways to the Future Exhibit at SIGGRAPH 99 celebrates SIGGRAPH's 30th year by showcasing organizational activities, as it looks to the future. Here are some of the highlights of this exhibit, which is located in the concourse foyer outside Room 151/153 in the Los Angeles Convention Center.

Information About the Organization

Learn about SIGGRAPH's mission, purpose, values, and goals, and how to become a SIGGRAPH member.

Volunteer Experiences

If you have ever been a SIGGRAPH volunteer, record your experience as a SIGGRAPH volunteer and pick up a SIGGRAPH volunteer ribbon.

SIGGRAPH Fortune Tellers

See the winning fortunes from the SIGGRAPH fortune cookie contest, predicting the future for SIGGRAPH and for computer graphics. Winning fortunes will also be distributed in fortune cookies Tuesday - Thursday.

SIGGRAPH Public Policy Committee

See the results of a survey on unsolved problems in computer graphics.

ACM SIGGRAPH Publications

Get information on the wide variety of publications in print, video, CD-ROM, slides, and the Publications Outreach program.

SIGGRAPH Small Conferences

Get information on the small conferences, workshops, and symposia that are sponsored or co-sponsored by ACM SIGGRAPH

The Story of Computer Graphics

See a trailer from this feature-length movie that chronicles the history of computer graphics and animation.

SIGGRAPH/Smithsonian Video Project

See the video, "Visualizing Science through Computer Graphics," that was created with the Division of Information, Technology, and Society at the Smithsonian Institute.

Envisioning the Future Art Show

This small, focused art show looks towards the future.

SIGGRAPH Special Projects

See examples of recently-funded projects - Carto project which integrates computer graphics and spatial data; Electronic Immersions; and Computer Animation from the 1970s. And get information on how you can apply for Special Project funds.

ACM SIGGRAPH Professional Chapters

See a map of locations of professional chapters worldwide, and get information on joining a professional chapter near you or starting a new chapter.

SIGGRAPH Educational Activities

Browse a CD of SIGGRAPH educational materials, and see the recommendations for directions in computer education from the Eurographics/SIGGRAPH co-sponsored Computer Graphics and Visualization Education Workshop held in Portugal in July.

Predictions and Suggestions

Record your predictions for the future in computer graphics or SIGGRAPH, or give suggestions to SIGGRAPH on what you would like SIGGRAPH to be doing.

SIGGRAPH 30th Committee

Judith R. Brown
The University of Iowa

Ann T. Eakes
University of Texas Health Science Center

Midori Kitagawa
The Ohio State University

Juan Lopez Michelone
Universidad Nacional Autónoma de México

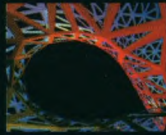
John Michael Pierobon

Rosalee Wolfe
DePaul University

G L E A M

Share the glow of intellectual and creative interchange as SIGGRAPH 2000 redefines computer graphics and interactive techniques in the world's easiest place to have a good time.

To find out how you and your work can illuminate the Crescent City next summer, point your browser to: www.siggraph.org/s2000




SIGGRAPH 2000

[NEW ORLEANS]

27th International Conference on Computer Graphics and Interactive Techniques

CONFERENCE: 23-28 July 2000 | EXHIBITION: 25-27 July 2000 | Ernest N. Morial Convention Center | New Orleans, Louisiana USA

 Sponsored by ACM SIGGRAPH

Images (left to right): Rolie Polie Olie © 1999 Nelvana; The Space Field Series: Comet Nebula © 1997 Victor Raphael; The Optiverse © 1998 George Francis, NCSA, University of Illinois; Civilization of Fruit: Martyred Apple © 1998 Patricia Swain; Still Life © 1998 Scott Curtin, Ringling School of Art and Design



Acknowledgements

Art Gallery: technOasis

Animatics Corporation
Ars Electronica Center
Ascension Technology Corporation
BARCO Inc.
Cone Editions
Eldsjälar
Hewlett Packard Company
IN Interface Design
Industrial Light & Magic
Intergraph Computer Systems
Kulturprojektet IT för kvinnor och
The McKnight Foundation
MediARtech
Mississippi State University
Mixed Reality Systems Laboratory Inc.
Plus Corporation of America
Rochester Institute of Technology
SGI
Slide Factory
StereoGraphics Corporation
Swedish Energi Company
University of Minnesota
Graduate School
Vattenfall AB

Computer Animation Festival

CBS Animation
Digital Projection Inc.
Hewlett-Packard Company
Industrial Light & Magic
The Post Group
Rhythm & Hues Studios
SGI
Symantec

Courses

Alias|Wavefront
Lockheed Martin

Creative Applications Lab: The Digital Cafe

Adobe Systems, Inc.
Alias|Wavefront
Intergraph Computer Systems
Lake Pty Ltd.
MetaCreations Corporation
Microsoft Corporation
National Center for
Supercomputing Applications
SensAble Technologies
Sun Microsystems, Inc.
Symantec
VA Linux Systems, Inc.
Wacom Technology Corporation

Electronic Schoolhouse

3D Artist Magazine
ACM
Addison Wesley Longman
AK Peters
American Cinematographer
Adobe Systems, Inc.
Ameritech Corporation
Animation Magazine
Animation World Magazine,
an AWN publication
Apple Computer, Inc.
AV Video Multimedia Producer
Avid|Softimage
Cineflex
Computer Graphics World
DMG Publishing
Elsa AG
Entertainment Employment Journal
EXPO 2000 Hannover GmbH
Focal Press
Garth Gardner Co., Inc.
The Hollywood Reporter
John Wiley & Sons
Intergraph Computer Systems
Institute for International Informatics
Live Picture, Inc.
MetaCreations Corporation
Microtouch (IBID)
Miller Freeman 3D Group
Miller Freeman, Inc.
Millimeter
Mindtel IIC
Morgan Kaufmann Publishers
New Riders Publishing
New Techniques Magazine
O'Reilly & Associates
Panoram Technologies, Inc.
Polhemus Inc.
Publications & Communications Inc.
Schenker International
SGI
Sony Electronics Inc.
Sun Microsystems, Inc.
Triadigm Technology
Variety
Wacom Technology Corporation
White Pines Software, Inc.

Emerging Technologies: The Millennium Motel

Battelle Memorial Institute
Dallas Semi Conductors
Feature Factory
Hewlett Packard Company
Immersion Corporation
Intel Corporation
Intergraph Computer Systems
Lasertech Color
M123
Media Synergy
Minolta Corporation -
Optics Technology Division
Philips
Research for the Future Program, JSPS
Saved by Technology
SGI
Signs of Change
Softimage Inc.
Sony Computer Science Lab, Inc.
Voices in Hi-Fi
VRex
Yamaha Canada Music Ltd.
Yamaha Corporation of America

International Services

Scidmore, Hersom & Others, Inc.

Networking

Cisco Systems, Inc.
Encyclopedia Britannica
Fluke Corporation
FSC End2End, Inc.
Infinite Blue
Lee County School District
MediaMachine
Sandia National Laboratories
Sun Microsystems, Inc.
Tripp Lite
University of Illinois at Chicago
USA Group, Inc.
Van Frank Consulting
Visio Corporation
WhitEyes Enterprises
WorldServer, Inc.

Panels

Sandia National Laboratories

Papers

Power Take Off Software, Inc.

Pathfinders

Hewlett-Packard Company

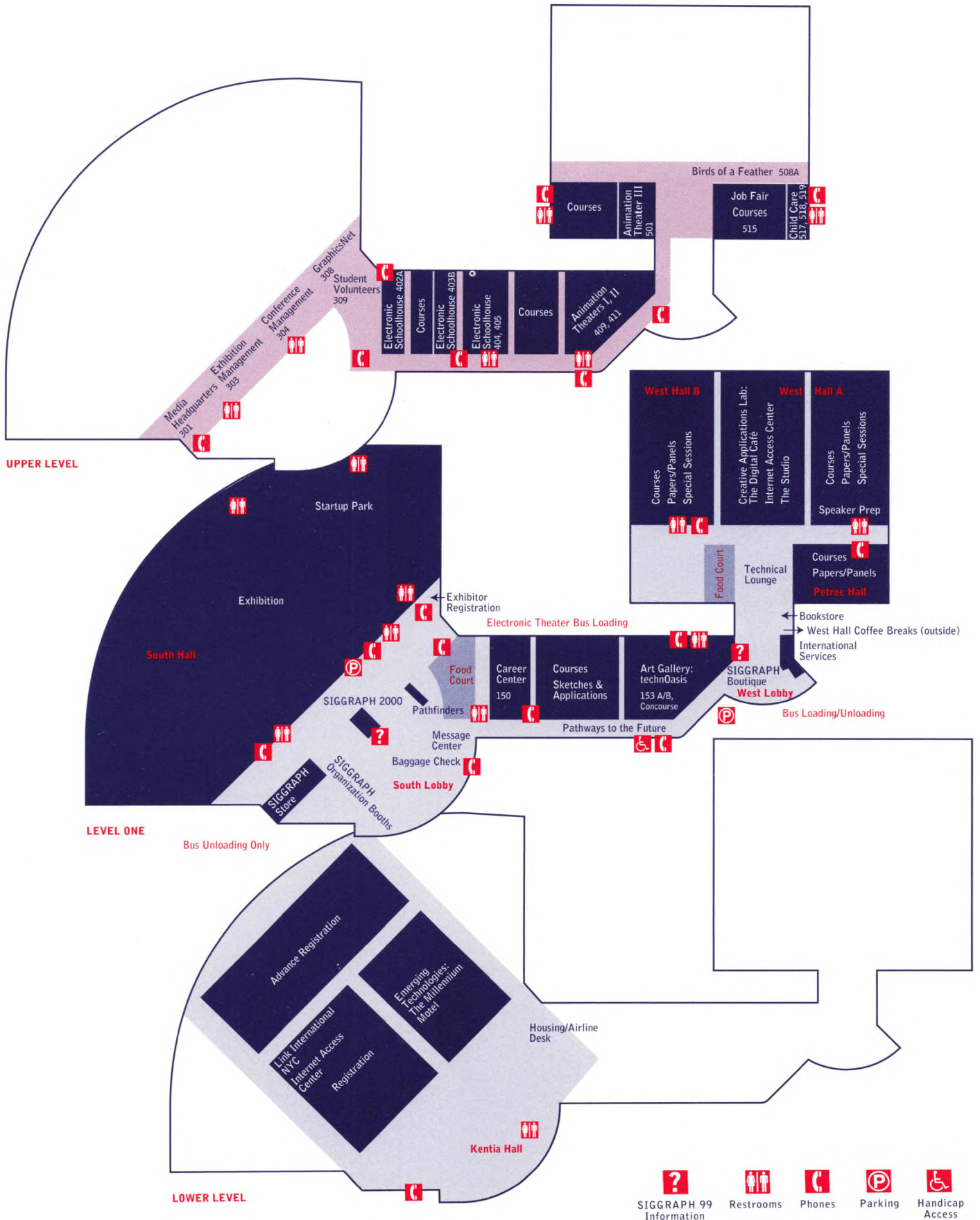
Sketches & Applications

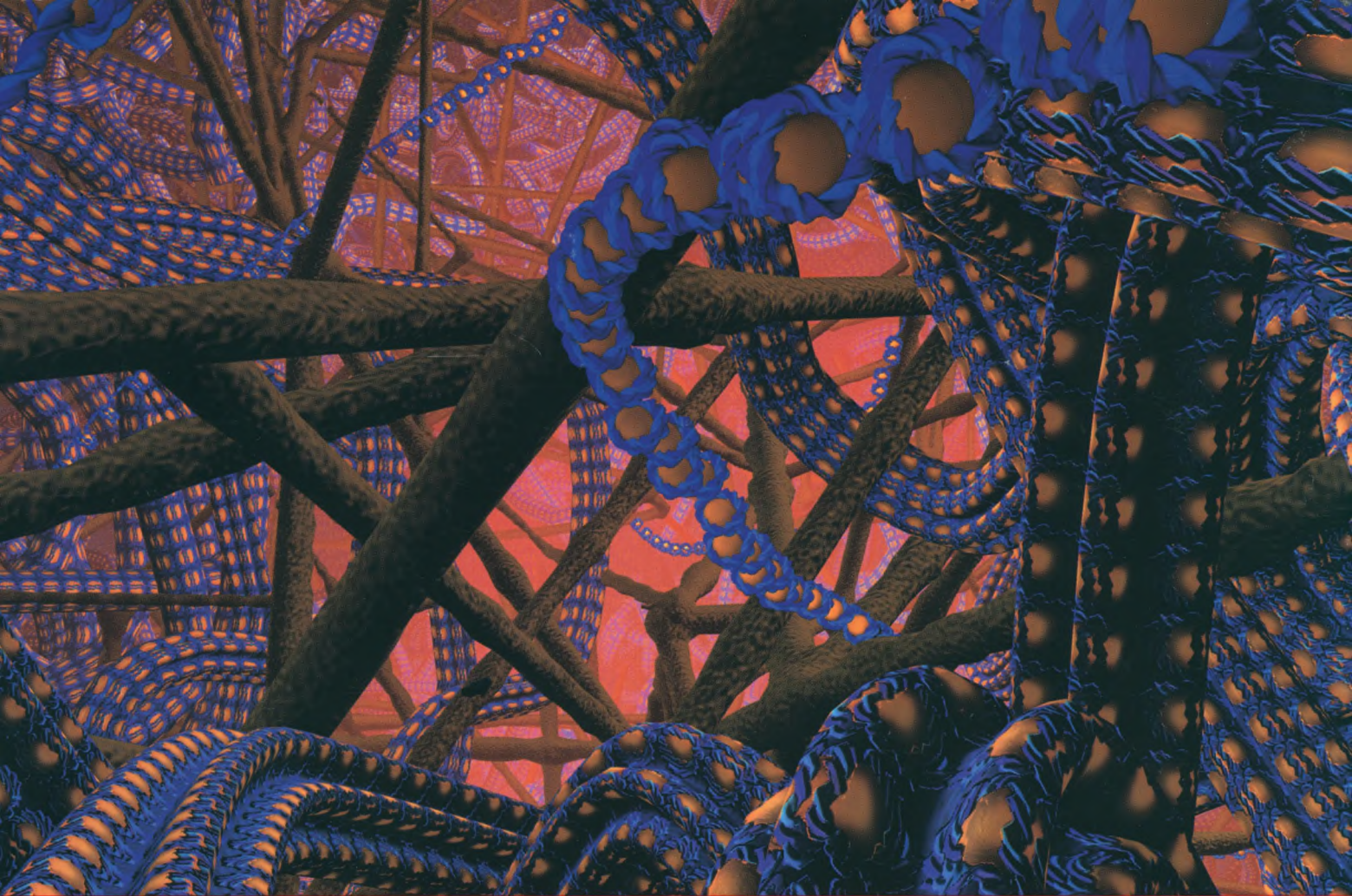
Cinesite Visual Effects

The Studio

3D Systems, Inc.
3 Dimensional Engineering, Inc.
Adobe Systems, Inc.
Alias|Wavefront
Altamira Group, Inc.
Amanda USA, Inc.
Apple Computer, Inc.
auto.des.sys, Inc.
Burton Holmes Associates
ColorSpan Corporation
Cyberware, Inc.
Discreet Logic Inc.
Encad, Inc.
Ennex Corporation
Epson America Inc.
Form Z
Geometrix, Inc. -
The VideoModeling Company
Hash Inc.
Heidelberg USA
Hewlett Packard Company
Imageware Corporation
Improved Technologies of
New Hampshire
inkjetmall.com
Intergraph Computer Systems
Invision
Iomega Corporation
itec Color Solutions, Inc.
LaCie Group
Legion Paper West
Lyson Specialist Fluids
Maxon Inc.
Medea Inc.
MetaCreations Corporation
Minolta Corp -
Instrument Systems Division
Miramar Systems, Inc.
Nichimen Graphics Inc.
Okino Computer Graphics, Inc.
Paraform Inc.
Pixo Arts Corporation
Play Incorporated
PLAY/Electronic Image
Raindrop Geomagic, Inc.
Robert McNeel and Associates
Roland Corp.
Sanders
SensAble Technologies, Inc.
SGI
Softimage
Solid Concepts Inc.
Solid View
Stratasy, Inc.
Symantec
Wacom Technology Corporation
Weber Valentine Company
Westech Training Systems
Wyndstone Heat Transfer Paper
Xinet, Inc.
Z Corporation

Convention Center Map





The DNA Story © 1997, Andreas Koch, Digital Studio SA

SIGGRAPH 2000

New Orleans, Louisiana USA
23-28 July 2000

SIGGRAPH 2001

Los Angeles, California USA
12-17 August 2001

For conference information:

SIGGRAPH 2000
Conference Management
Smith, Bucklin & Associates, Inc.
401 North Michigan Avenue
Chicago, Illinois 60611 USA
www.siggraph.org/s2000/
+1.312.321.6830
+1.312.321.6876 fax
siggraph2000@siggraph.org

To purchase exhibition space, contact:

SIGGRAPH 2000
Exhibition Management
Hall-Erickson, Inc.
98 East Naperville Road
Westmont, Illinois 60559 USA
+1.630.434.7779
+1.630.434.1216 fax
halleric@siggraph.org



Sponsored by ACM SIGGRAPH