Program and Buyer's Guide

23rd International Conference on Computer Graphics and Interactive Techniques

Conference
4–9 August 1996

Exhibition
6–8 August 1996

Ernest N. Morial Convention Center
New Orleans, Louisiana USA

ACM
1515 Broadway
New York, New York 10036 USA

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Contents

Conference at a Glance 2
Welcome 3
Conference Map 4
Special Conference Events 6
Fundamentals Seminar 6
Welcome Reception 6
Course Reception 6
Keynote Address/Award 6
Behind the Scenes 6
Papers/Panels Reception 6
Special Session 6
The Bridge: SIGGRAPH 96 Art Show 7
Computer Animation Festival 9
Digital Bayou 14
Special Interest Groups 18
Daily Program Schedule 20
Courses 26
Papers/Panels 36
Papers/Panels Breakout Rooms 36
Courses/Papers/Panels Contacts 44
Applications 47
Animator Sketches 50
Artist/Designer Sketches 50
Technical Sketches 52
Educators Program 57
Registration & Media Information 59
SIGGRAPH 96 Services 60
Audio/Visual Services 60
The Bridge Office 60
Business Center 60
Career Center 60
Check Room 60
Child Care 60
Computer Animation Festival Office 60
Conference Management Office 60
Conference Policies 60
Digital Bayou Office 61
Electronic Theater Tickets 61
Ernest N. Morial Convention Center
Accessibility 61
Parking 61
Exhibition Management Office 61
Exhibitor Registration 61
First Aid 61
Food Services 61
Information Booths 61
Internet Access Center 61
Lost and Found 61
Merchandise 61
Merchandise Sold After the Conference 61
Message Center 61
Registration 61
Restaurant/Tour Information Desk 61
Shipping Desk 61
Speaker Prep Room 61
Special Assistance Desk 62
Tickets 62
Telephone Numbers 62
International Center 63
Information Booths 64
Travel and Housing 65
Shuttle Service 65
Hotel Map 66
GraphicsNet 68
Exhibition 70
Exhibitors 71
Startup Park 111
Product Index 112
SIGGRAPH 97 117
ACM SIGGRAPH 130
Exhibition Floor Plan 132
Committees 134
Acknowledgements 135
Advertiser Index 135

	SAT 3 AUG	SUN 4 AUG	MON 5 AUG	TUES 6 AUG	WED 7 AUG	THU 8 AUG	FRI 9 AUG
Registration/Merchandise/International Center *Advance Registration–Hall D Lobby, Onsite Registration/ Merchandise–Hall D, International Center–Hall E Lobby*	7 pm to 10 pm	10 am to 9 pm	8 am to 7 pm	8 am to 7 pm	8 am to 6 pm	8 am to 6 pm	8:30 am to 1 pm
Exhibition *Halls B2, C, D, E, and portions of F*				10 am to 6 pm	10 am to 6 pm	10 am to 3:30 pm	
Courses *See pages 20–22 for Course locations*		noon to 6:45 pm Full Day 1:30 pm to 5 pm Half Day	8:30 am to noon 1:30 pm to 5 pm	8:30 am to noon 1:30 pm to 5 pm			
Papers *See pages 23–25 for Papers locations*					10:15 am to 5:15 pm	8:15 am to 5:15 pm	8:15 am to 5:15 pm
Panels *See pages 23–25 for Panels locations*					10:15 am to 5:15 pm	8:15 am to 5:15 pm	8:15 am to 5:15 pm
Technical Sketches *Rooms 58–60*					10:15 am to 5:15 pm	8:15 am to 5:15 pm	8:15 am to 5:15 pm
Educators Program *Room 2/4/6 & 10/12*							8:30 am to 5:15 pm
Electronic Theater *Saenger Theatre*			7 pm to 9 pm	6 pm to 8 pm *and* 9 pm to 11 pm	6 pm to 8 pm	6 pm to 8 pm	
Festival Screening Rooms *Rooms 100–104*		6 pm to 8 pm	9 am to 7 pm	9 am to 7 pm	9 am to 6 pm	9 am to 6 pm	9 am to 5 pm
The Bridge: SIGGRAPH 96 Art Show *Convention Center– Rooms 61–66* *Contemporary Arts Center*	White Linen Night 6 pm to 9 pm	6 pm to 8 pm 10 am to 5 pm	9 am to 7 pm 10 am to 5 pm	9 am to 7 pm 10 am to 5 pm	9 am to 6 pm 10 am to 5 pm	9 am to 6 pm 10 am to 5 pm	9 am to 1 pm 10 am to 5 pm
Applications *Hall C*				10 am to 5 pm	10 am to 5 pm	10 am to 5 pm	
Digital Bayou *Hall C*		6 pm to 8 pm	9 am to 7 pm	9 am to 7 pm	9 am to 6 pm	9 am to 6 pm	9 am to 3 pm
Artist/Designer Sketches *Room 60*							10:15 am to 3:30 pm
Animator Sketches *Room 59*					10:15 am to 5:15 pm	10:15 am to 5:15 pm	
Special Session *Room E2/E3*							noon to 1:30 pm
Behind the Scenes *Room 5/7/9*						12:15 pm to 1:15 pm	
Fundamentals Seminar *Ballroom II A/B*		2 pm to 5 pm					
Keynote Address/Award *Room E2/E3*					8:15 am to 9:45 am		
Welcome Reception *Digital Bayou enter through Hall C*		6 pm to 8 pm					
Course Reception *Cajun & Creole Queen Paddleboats and New Orleans International Cruiseship Terminal*			8 pm to 11 pm				
Papers/Panels Reception *New Orleans Marriott Grand Ballroom*						8 pm to 11 pm	
Career Center *Room 85/86*	7 pm to 10 pm	10 am to 9 pm	8 am to 7 pm	8 am to 7 pm	8 am to 6 pm	8 am to 6 pm	8:30 am to 5 pm

Welcome to SIGGRAPH 96

Congratulations! Today you embark on the grandest of adventures!

Together with over 25,000 fellow explorers from around the world, you spark the SIGGRAPH 96 community alive to satisfy its greatest passions for computer graphics and interactive techniques.

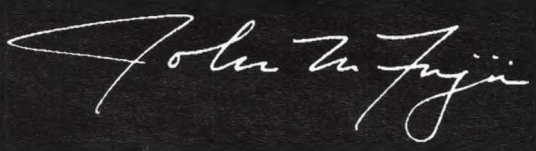
Let these pages guide you through the latest frontiers of theory, practice, education, and achievement. They serve as your treasure map to the people, ideas, and technologies defining our digital milestones in the next century.

Here in New Orleans, you will witness the Internet leap to its next levels of graphics and interactivity. Personal computers will unleash creativity at the farthest reaches of imagination and affordability. History will unfold to yield precious clues and set challenges for our next generation of dreamers.

And now you are here to carry the promise forward!

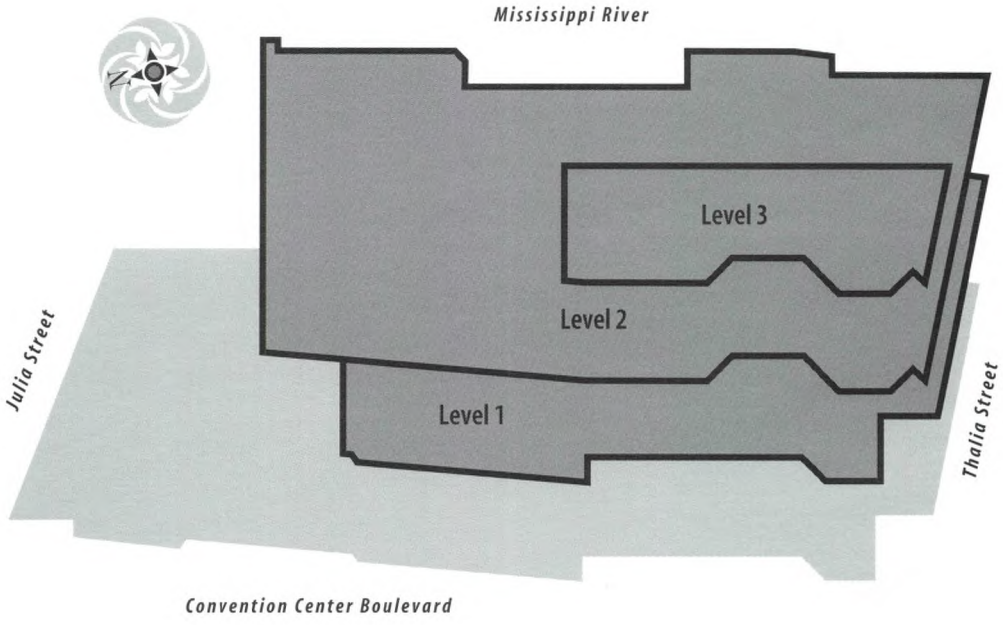
Over two years ago, the SIGGRAPH 96 Committee began charting a vision that celebrates human spirit and interaction. Next, we poured ourselves into delivering this unique moment. Now we proudly stand with you at the interdisciplinary crossroads of computer graphics and excellence for our year, 1996.

The last step is to complete this vision – together.



John M. Fujii
SIGGRAPH 96 Conference Chair

Ernest N. Morial Convention Center



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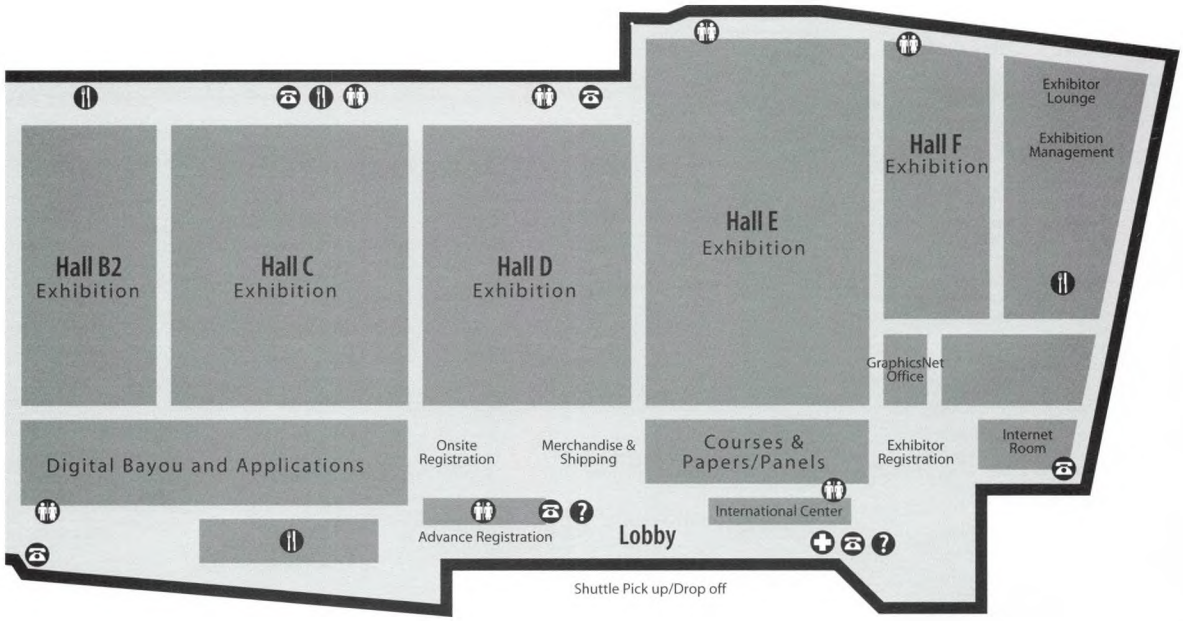

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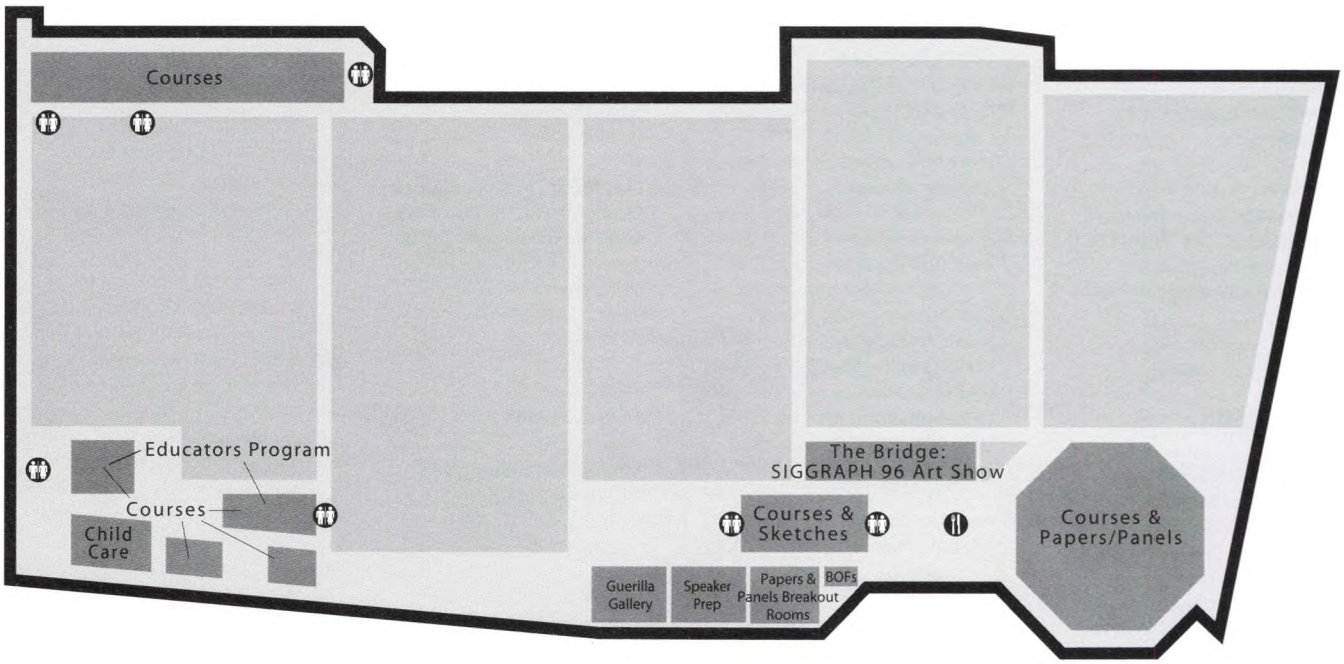

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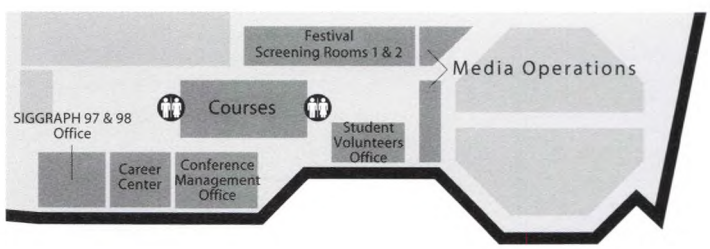

Legend *First Aid* *Food* *Information* *Restrooms* *Telephone*

Sunday
4 August

2 pm to 5 pm

Fundamentals Seminar
Ballroom II A/B
Open to all SIGGRAPH 96 attendees.

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

6 pm to 8 pm

Welcome Reception
Digital Bayou enter through Hall C
Open to all SIGGRAPH 96 attendees.

Celebrate your arrival in America's favorite city for the world's favorite international conference on computer graphics and interactive techniques by meeting and greeting friends and colleagues, old and new, in the Digital Bayou.

Monday
5 August

8 pm to 11 pm

Course Reception
Cajun & Creole Queen Paddleboats and New Orleans International Cruiseship Terminal
Open to Conference and Courses Passport attendees.

Join the festive SIGGRAPH 96 New Orleans street parade! At 7:45 pm, the New Orleans Police Department, a high school marching band, and a host of revelers escort Course Reception attendees from outside the New Orleans Marriott on Canal Street to the Cajun & Creole Queen Paddleboats.

For attendees who cannot join the parade, shuttles are available directly to the paddleboats. For shuttle information, see page 65.

A Course Reception ticket is required for entry and includes two drink tickets for beer, wine, or soft drinks. Hors d'oeuvres stations are available throughout both paddleboats and the terminal.

Tickets for the Course Reception are included with the registration materials for Courses and Conference Passports. Tickets can also be purchased at SIGGRAPH 96 onsite registration, at the merchandise counter in Hall D, and at the entrance to the cruiseship terminal at the reception.

Wednesday
7 August

8:15 am to 9:45 am

Keynote Address/Award
Room E2/E3
Open to all SIGGRAPH 96 attendees.

SIGGRAPH 96 keynote speaker Douglas Adams reviews the future of the galaxy. The 1996 Computer Graphics Achievement Award is presented to Marc Levoy for his pioneering work in volume rendering, a technique for displaying sampled data without first creating an intermediate surface representation.

Thursday
8 August

12:15 pm to 1:15 pm

Behind the Scenes
Room 5/7/9
Open to all SIGGRAPH 96 attendees.

The SIGGRAPH 96 Computer Animation Festival Committee reviews, explains, and answers questions about how material was chosen for this year's Electronic Theater.

8 pm to 11 pm

Papers/Panels Reception
New Orleans Marriott Grand Ballroom
Open to Conference and Papers/Panels Passport attendees.

Meet and exchange URLs with the intellectual leaders of the computer graphics community in the classic ambiance of a New Orleans soiree.

Each Papers/Panels Reception attendee receives two drink tickets for beer, wine, or soft drinks. Hors d'oeuvres stations are available throughout the ballroom.

For shuttle information, see page 65.

Tickets for the Papers/Panels Reception are included with the registration materials for Papers/Panels and Conference Passports. Tickets can also be purchased at SIGGRAPH 96 onsite registration, at the merchandise counter in Hall D, and at the door before and during the reception.

Friday
9 August

noon to 1:30 pm

Special Session
Springing into the Fifth Decade of Computer Graphics: Where We've Been and Where We're Going
Room E2/E3
Open to all SIGGRAPH 96 attendees.

In the 1950s, computer graphics was a solution in search of a problem. Now it's everywhere, in industry, science, academia, government, education, and entertainment. Six computer graphics pioneers, innovators, visionaries, and practitioners discuss their successes and foibles and where the discipline might be going from where it's been.

Organizer
CARL MACHOVER
Machover Associates Corporation

Panelists
FREDERICK P. BROOKS, JR.
University of North Carolina at Chapel Hill

EDWIN E. CATMULL
Pixar

SYLVAN CHASEN

ROBERT M. DUNN
Enterprise Solutions International

BERTRAM HERZOG
University of Michigan

ANDRIES VAN DAM
Brown University

A thematic exhibition that explores connecting people, cultures, and society through innovative uses of computer graphics technology. The Bridge opened at the New Orleans Contemporary Arts Center (CAC) on 22 July and runs through 9 August. At the Ernest N. Morial Convention Center, five blocks away, The Bridge is presented 4-9 August. Employing interactive technologies and Internet links between the conference and the CAC, The Bridge educates and bridges important issues connecting artists, scientists, technologists, educators, and regional and international communities. The Bridge is documented in the SIGGRAPH 96 *Visual Proceedings*, the Visual Proceedings CD-ROM, and The Bridge Slide Set.

Convention Center
Rooms 61–66

Sunday
6 pm to 8 pm

Monday and Tuesday
9 am to 7 pm

Wednesday and Thursday
9 am to 6 pm

Friday
9 am to 1 pm

Contemporary Arts Center
900 Camp Street
+1.504.566.1005

Sunday – Friday
10 am to 5 pm

White Linen Night
Saturday, 3 August
6 pm to 9 pm

All SIGGRAPH 96 attendees are invited to this annual evening art party on Julia Street, sponsored by the Warehouse District Arts Association. Cuisine vendors, cash bar, and The Bridge: SIGGRAPH 96 Art Show at the CAC.

Chair
JEAN M. IPPOLITO
Savannah College of Art and Design

Curatorial Committee
CAROL GIGLIOTTI
The Ohio State University

THOMAS WHITWORTH
University of New Orleans

SERGIO LAUREANO
Fould and Associates

LUCY PETROVICH
Savannah College of Art and Design

Curatorial Advisors
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Museum of Modern Art

TED POTTER
Contemporary Arts Center

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Mozart's Piano Fugue, Opus 154 "A Musical Score Lent Acoustic Form"
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The Third Dimension of "Ritratto di Gentiluomo"
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Masturbatory Interactant

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Teleporting an Unknown State Internet Hybrids and the New Aesthetic of Worldwide Interactive Events (essay)

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What Kind of Pictures Do You Take?

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Soporific Souls: Sacrifices of the Holocaust Rediscovered

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Getting Women Wired: New Connections in Art and Technology

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The world's most accomplished digital artists present the year's best computer-generated animations in video and film. This year's Festival features explanatory and documentary works.

The Computer Animation Festival presents a broad array of works in several formats and categories in the Festival Screening Rooms (open to all badged conference attendees). A representative selection of Festival entries is also shown in the evening Electronic Theater, presented this year at the historic Saenger Theatre in downtown New Orleans.

Electronic Theater
Saenger Theatre
143 North Rampart Street
+1.504.525.1052

Monday
7 pm to 9 pm

Tuesday
6 pm to 8 pm and 9 pm to 11 pm

Wednesday and Thursday
6 pm to 8 pm

Festival Screening Rooms
Ernest N. Morial Convention Center
Rooms 100–104

Sunday
6 pm to 8 pm

Monday and Tuesday
9 am to 7 pm

Wednesday and Thursday
9 am to 6 pm

Friday
9 am to 5 pm

Chair
LINDA BRANAGAN
Light Source, Inc.

Screening Room Producer
GINA CONIGLIO
Ogilvy & Mather Direct

CHERYL STOCKTON
Pratt Institute

Technical Director
MICHAEL HARRIS

International Liaison
HUGUETTE CHESNAIS

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CD-ROM Production
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Digital Bayou

The Lousiana Bayou is not far from here, in every direction, and cyberspace surrounds us. Both are rich and complex ecosystems, with rapid speciation and a wealth of evolving lifeforms coexisting and competing for resources and a chance to reproduce. The Digital Bayou presents some of the most advanced interactive and graphics technologies on the planet, co-existing in one vibrant space, teeming with the nutrients for fresh ideas and for the explosive growth of new commercial, research, and entertainment life forms.

Hall C

Sunday
6 pm to 8 pm

Monday and Tuesday
9 am to 7 pm

Wednesday and Thursday
9 am to 6 pm

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9 am to 3 pm

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Artificial Dolphins

Artificial Dolphins enable human communication with an artificial life form in a virtual reality environment. Its dolphin-style simulated life forms are animated using physically-based modeling. Real-time computer graphics; motion planning; simulation of water, foams, sprays, and bubbles; and 3D sound bring the dolphins to life.

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Bayou Sauvage

Approximately 20 different vendors of computer hardware, software, and systems are participating in a common game across the SIGGRAPH 96 Exhibition floor and Digital Bayou. Participants start in different vehicles from different locations and race across the Bayou to reach a wayward alien spaceship. They encounter active and passive obstacles, not the least of which is each other, in a complex 3D world.

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BE NOW HERE (Welcome to the Neighborhood)

This study contrasts the familiar with the foreign, over space and over time. In part, it is an attempt to re-awaken our sense, essence, and sanctity of place through place-scale media. And it is a simulation of what public media spaces could be like in the context of live, high-bandwidth, global networking.

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Cypress Adventure

In this interactive experience set in a cypress swamp, participants interact with the background and navigate through the experience singly or in pairs. The experience is based on optical, non-contact, real-time tracking of markers placed on the participants' hands. It consists of two components: the Chase sequence, for one or two participants, and the Design sequence, for one participant at a time.

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Deceiving Manipulation with a Palmtop Display

Using a new concept in unencumbered VR interfaces, participants construct a "Mikoshi" (a Japanese portable shrine). The system integrates a large-screen video projector's "window" into a virtual world, a robot arm that functions as a three-axis haptic display, and, mounted to the end of the arm, a small color LCD video monitor and a magnetic position sensor.

HARUO NOMA
ATR-Media Integration & Communication Research Laboratories
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Kyoto 619-02 JAPAN
+81.774.95.1211
+81.774.95.1208 fax
noma@mic.atr.co.jp

Digital Dixieland

In this multi-player jam session, creative people with different levels of musical expertise play together in a high-quality musical/graphical environment – a location-based example of what an online musical/social experience might look and sound like in the near future.

AMY JO KIM
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amyjo@naima.com
http://www.naima.com

Distributed Scientific Visualization of Ocean Models

This prototype simulation enables operational or exercise planners to test various scenarios prior to initiation of the operation. The application is highly adaptable to training operations via interactive "fly-throughs" of ocean simulations, including interactive control of the ocean model itself.

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rmk@msrcnavo.navy.mil

Dr. Jackt's Robot Island

Players explore an entertaining environment that showcases the technology of VRML 2.0 and Cosmo-Player to discover "The Secret of Dr. Jackt's Robot Island."

CLAY GRAHAM
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+1.415.390.6060 fax
clay@sgi.com
http://reality.sgi.com/employees/clay/

d-rhum

A dynamic, constantly evolving space in which participants begin to see that their personal boundaries are fuzzy. As they move, so do the walls, blurring the traditional limited expectations of an architectural space. Certain combinations of movements cause deformations and sound emissions, but it is never clear which movements generate which reactions.

DANIEL SCHWARTZ
RomeBlack, Inc.
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+1.212.727.9546 fax
dls@romeblack.com

The Global Interior Project

Visitors interact with this multi-user, multi-cultural communication playground through one of several "Cubical-Terminals," where 3D graphic workstations are installed and connected to the server. Using a trackball to navigate the virtual world, visitors meet and talk to each other within the matrix as they access it from different locations.

MASAKI FUJIHATA
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Keio University
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masaki@sfc.keio.ac.jp

Guerilla Gallery

Located on the 2nd Level
Room 50/51

Guerilla Gallery is a "common ground" where image makers from all fields can share the excitement of an open studio environment – a crossroads, where the science and art communities meet and merge their mutual concerns.

PATRICIA JOHNSON
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+1.305.237.1850 fax
patjoh@aol.com

Haptic Challenge: An I-FORCE Computer Game

In this multi-user gaming environment, two players propel a virtual puck at the opponent's goal. They are armed with virtual paddle controllers in a full dynamic simulation that allows them to feel the puck interacting with the paddle with such realistic fidelity that they can actually take advantage of fine manual dexterity to put spin on the puck.

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Immersion Corporation
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+1.408.467.1901 fax
louis@immerse.com
http://www.force-feedback.com

HapticWeb

Based on a six-degree-of-freedom force feedback device (HapticMaster), this World Wide Web client applies three-degree-of-freedom force and three-degree-of-freedom torque at the user's hand. The user can manipulate and feel virtual objects by holding a knob at the top of the HapticMaster.

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Interactive Multiplayer HoverBall

In a collaborative, networked, three-dimensional environment, two teams of four players each compete to win an air-hockey-like game by maneuvering their craft to turn, accelerate, jump, and brake under full physical simulations of acceleration, collision, friction, and inertia.

ROSS CUNNIFF
Hewlett-Packard Company
3404 East Harmony Road, MS 74
Fort Collins, Colorado 80525 USA
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cunniff@fc.hp.com

Interview

Interview is an interactive multimedia program for interviewing young children who may have been sexually abused. It provides a structure that helps children tell their stories verbally or nonverbally, and it assists the interviewer by providing a framework of questions and an easy-to-use system for taking notes and tracking the children's selections.

KAREN LITTMAN
Morphonix
26 Laurelwood Court
San Rafael, California 94901 USA
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JOURNEYS by Telecommunity

In this ongoing project, young students from around the world express ideas, art, and insights in a dialogue about personal journeys, through multimedia imagery, QuickTime movies, and network exchange. They "travel" via the Internet to collaborate on journeys of peace, of the heart, of meaning, of the future.

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rd1s+@andrew.cmu.edu

Neither Here Nor There

Neither Here Nor There is a series of collaborative events utilizing advanced networking software and hardware to interconnect Immersadesk environments in The Bridge: SIGGRAPH 96 Art Show, an Immersadesk installed in the Digital Bayou, and a CAVE at the Ars Electronica Center in Linz, Austria. By digitally connecting to other VR platforms, users experience the potential of networked interactivity.

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Overcoming Phobias Using Virtual Reality

A team of therapists and computer scientists has demonstrated that virtual reality can be very effective in reducing acrophobic subjects' anxiety and avoidance of heights, and in improving attitudes toward heights. In this project, acrophobia is treated with four different scenarios: a glass elevator, a canyon with bridges, balconies overlooking a city, and an airplane flight.

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+1.404.894.0673 fax
cooper@cc.gatech.edu

Plasm: Yer Mug

Plasm: Yer Mug offers passers-by an electronic mirror complete with suitable cultural distortions. A seething artificial-life community behind the looking glass lines up to track and interpret the life forms that inhabit our side of the mirror.

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Mountain View, California
94039-7311 USA
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rob@set.engr.sgi.com

Projec(tions)

With an interactive map of New York City, this student-faculty collaboration explores the new television medium and human interface of the future. A digital infrastructure blurs the boundaries between interface and content, human and computer, and broadcaster and receiver, and allows users to deposit their own messages and meaning.

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+1.212.929.2456 fax
Yeller@newschool.edu

Riverworld

Using ISDN, LAN, other network technologies, and high-resolution immersive peripherals, attendees enter a recreation of a 19th century Louisiana paddle-steamer. *Riverworld* demonstrates how people from geographically separate locations will be able to meet and interact in virtual environments.

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+1.415.843.0711 fax
JonW@Virtuality.com

R.O.V.E.R. II

An Onyx chassis with stereo vision and independent head tracking, coupled with a VR helmet that allows an immersive 3D telepresence experience, allows the cameras on R.O.V.E.R. II to mimic the user's viewpoint, and the human-machine interface allows easy movement of the R.O.V.E.R. II mobile platform. A two-way voice link allows the operator to communicate with anyone near the R.O.V.E.R. II platform.

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deej@vsl.ist.ucf.edu
drussell@vsl.ucf.edu

San Francisco Rush

Relying upon a proprietary, real-time, 3D rendering engine, San Francisco Rush runs a four-point, physically correct driving model that offers a completely new experience in driving simulation. Participants push their driving skills to the limit as they race the clock and up to seven competitors through the streets of San Francisco.

CAMERON PETTY
Atari Games Corporation
675 Sycamore Drive
Milpitas, California 95035 USA
+1.408.434.1783
+1.408.434.3910 fax
petty@agames.com

Soundscapes Entertainment

In *Soundscapes*, visitors are totally engulfed as they enter a completely new type of virtual reality experience. Sound drives a continuous stream of stereoscopic graphics in temporal harmony with the music to create a "music video" in which the user explores a world generated by music.

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http://www.xian.com/fsm/fsm.html

Space Browsers: A Tool for Ubiquitous Tele-Embodiment

Via a small helium blimp with a video camera and other equipment mounted on it, users are immersed in a remote world. The system provides real-time remote environmental information, continuity of motion, and user control of that motion, allowing users to easily travel vast distances from their computers and interact in a familiar manner with others.

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jfc@cs.berkeley.edu
http://vive.cs.berkeley.edu/blimp/

Spirits of the Bayou

A 3D virtual environment in which human-directed avatars and computer-controlled agents interact with each other in real time through a combination of procedural animation and behavioral scripting techniques.

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http://www.mrl.nyu.edu

Tenochtitlan: The Clash of Empires

In this Web-site-based, three-dimensional, interactive multimedia tour built in VRML 2.0, the year is 1519. Hernán Cortés and his army of Spanish conquistadors are riding toward the island city of Tenochtitlan, the center of the Aztec empire, and we join their tour of the sacred walled precincts at the ceremonial heart of Montezuma's realm.

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Vibescape

This virtual audio real-time environment produces 3D localized audio in four-channel surround sound, creating a totally immersive audio environment in which attendees lose themselves while standing, sitting, or lying on the Sonic Wave Floor, a carpeted matrix of subwoofers that delivers deep tissue massage.

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Virtual Kabuki System

In this new method of facial animation, 3D measurement data for different facial expressions generated by the main facial muscles are exploited to convert shape changes into deformation data of the 3D face model. Participants' facial expressions and body actions are reproduced in a Kabuki actor's very artistic and exotic 3D human model and projected on a large high-definition screen.

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The Virtual Lego Village

Several players at various physical locations share a common, collaborative space, in which they select Lego parts and stretch and snap them into the scene, then paint parts and assemblies from a palette of colors and textures.

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SmartScene Engineering
MultiGen Inc.
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pmlyniec@multigen.com

Virtual Lepidoptera

In a full-immersion, stereoscopic VR presentation, over 350 beautiful species of butterflies from all over the world fly around you in a natural setting. At your command, they land for close examination and provide information about their species and origin.

CARLOS NEWCOMB
Blue Morpho Productions
S.S. Vallejo, Varda Landing
Sausalito, California 94965 USA
+1.415.332.5111
+1.415.331.3335 fax
morpho@warp.com

Virtual Playspace

In an immersive virtual soccer game, teams of autonomous agents compete against each other and real users, who can participate as players, spectators, and even referees.

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Redhill, Surrey RH1 5HA
UNITED KINGDOM
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+44.01293.815500 fax
gallery@prl.philips.co.uk

Virtual Society

A new medium that exists across networked computers and enables simulation of real space in more intuitive forms. A society server allows concurrent users to see representations of and chat directly with each other.

FRANK FOSTER & YOSH KAMBE
Sony Pictures Imageworks
Culver City, California USA
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frank@spimageworks.com

The Virtual Space Fortress

A lone spacecraft encounters aggressive forces in a virtual galaxy complete with star clusters, dark matter, and simple relativistic effects. The participant uses a 3D mouse to navigate a high-speed craft through interstellar space toward an intergalactic space fortress.

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Mesa, Arizona 85206 USA
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Visualization of Earth and Space Science Data

Daily demonstrations of several interactive JPL systems for processing and visualization of science data returned by instruments flown on spacecraft in earth orbit and on solar system exploration missions.

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+1.818.393.6962 fax
Bill_Green@iplmail.jpl.nasa.gov

wango:IW (Immortal Wire)

wango: IW is a technology-based art installation that evolves through participant interaction. It explores the capabilities of signs, symbols, and languages to devise a model for communication in a networked, accessible VRML environment.

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The CADRE Institute
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Where No One Has Gone Before

In Where No One Has Gone Before, American astronaut Bernard Harris and German astronaut Ulf Merbold rehearse a normal maintenance job for two astronauts: replacement of the Hubble Space Telescope's solar array drive electronics. For the first time, astronauts far removed in physical space, one in Houston and the other in Darmstadt, perform complex tasks simultaneously in a virtual environment.

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Wizard Island

This multi-user virtual environment is designed for the bandwidth, latency, and rendering constraints of home computers and the Internet. It features VRML rooms and avatars, audio chat, client-authored 2D or 3D avatars, multiple camera views of the virtual world, and URL-based browsing of Wizard Island servers worldwide.

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Virtual New Orleans

In this VRML Web site, viewers can walk (or fly) down actual New Orleans streets. Each building is hyper-linked to the occupant's Web site. The convention center leads to an interior model of the site of SIGGRAPH 96.

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+1.415.543.7037 fax
dcolleen@planet9.com
http://www.planet9.com

Watch Your Language: Typography in Motion

Unique typographic animations projected on the large screens above the Digital Bayou.

SCOTT KIM
Scott Kim & Associates
4016 Farm Hill Boulevard #103
Redwood City, California 94061 USA
+1.415.328.6583
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STORZart

Sculptures constructed of steel and cast-off technology fuse pieces of the past and present to form structures of some unknown future.

STEVE STORZ
601 Van Ness Avenue #E3738
San Francisco, California 94102 USA
800.251.2968
STORZart@aol.com

Special Interest Groups

Special Interest Groups are for attendees who think and work in similar environments and technologies. Special Interest Group meetings are open to all attendees. They are usually informal. At some, general subjects are discussed; others convene around topics related to specific product vendors.

Birds of a Feather meetings 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 Hall D lobby area where late additions and revisions to the Special Interest Groups and Birds of a Feather schedule are posted.

Birds of a Feather meeting room
Room 57

Saturday
3 August

SIGGRAPH Professional Chapters Training Workshop & Annual Meeting
9 am to 6 pm
Balcony J, New Orleans Marriott
Scott Lang
+1.212.684.7400

Sunday
4 August

Alias | Wavefront User Group Meeting
10 am to 6 pm
Pontchartrain Ballroom, Sheraton New Orleans
Susan Anderson
+1.416.362.9181

AVS Visualization System Users Discussions
4:30 pm to 6 pm
Chequers Room, Hilton Riverside
Michael Pique
+1.619.554.9775

SIGGRAPH Round the Clock
24 hours
Iberville, New Orleans Marriott

Monday
5 August

Massively Parallel Rendering
5:30 pm to 6:30 pm
La Galerie 1, New Orleans Marriott
Patricia Crossno
+1.505.845.7506

SIGGRAPH Round the Clock
24 hours
Iberville, New Orleans Marriott

Tuesday
6 August

SGI Developers Forum
9 am to 8 pm
Oak Alley Room, Hilton Riverside
Julie Kelty
+1.415.933.1703

OpenGL SIG
11 am to noon
Grand Salon, Suite B, Section 9, Hilton Riverside
John Schimpf
+1.415.933.3062

SITO Internet Artists' Collective Reception
1:30 pm to 3:30 pm
Burgundy Room, Hilton Riverside
Dave Poindexter
+1.904.942.9494

The Bridge/Sake Barrel Reception
5 pm to 7 pm
Contemporary Arts Center

Computer Animation in Advertising
6 pm to 8:30 pm
La Galerie 5, New Orleans Marriott
Sue Conklin
+1.503.225.1130

PRISMS User Meeting
6 pm to 8:30 pm
La Galerie 1, New Orleans Marriott
John Wiliett
+1.616.940.3792

NW Computer Art & Design
6 pm to 9 pm
Diamond B, Holiday Inn Select
Ken O'Connell
+1.541.346.3610

SIGGRAPH Round the Clock
24 hours
Iberville, New Orleans Marriott

Wednesday
7 August

SGI Developers Forum
9 am to 8 pm
Oak Alley Room, Hilton Riverside
Julie Kelty
+1.415.933.1703

"Computer Graphics" May 96 Contributors' Meeting
10:30 am to noon
Audubon, New Orleans Marriott
Susan Mair
+1.604.822.3938

Graphics Performance Characterization Committee (GPC)
noon to 1 pm
Rosedown Room, Hilton Riverside
Bob Cramblitt
+1.919.481.4599

Open Inventor
1 pm to 2 pm
Marlborough Room, Hilton Riverside
Larry McDonough
+1.415.933.6165

Molecular Graphics
1:30 pm to 3 pm
Magnolia Room, Hilton Riverside
Michael Pique
+1.619.554.9775

IRIS Explorer User Group Meeting
2 pm to 4 pm
Bacchus B, Wyndham Hotel New Orleans
Kierith Ferrara-Kurth
+1.708.971.2337

IRIS Performer Real-Time 3D Programming for Visual Simulation
2 pm to 3 pm
Marlborough Room, Hilton Riverside
Larry McDonough
+1.415.933.6165

COSMO 3D–VRML 2.0 Toolkit for Java
3 pm to 4 pm
Marlborough Room, Hilton Riverside
Larry McDonough
+1.415.933.6165

Cross-Platform Open Inventor of VRML SIG
5 pm to 6 pm
Bonaparte, New Orleans Marriott
Robert Wendeman
+1.619.457.5359

Character Animation with Motion Capture Devices
5:30 pm to 9 pm
Balcony N, New Orleans Marriott
Juey Chong Ong
+1.212.343.2442

Get Involved with SIGGRAPH – Meet the SIGGRAPH 97 Committee and Executive Committee
5:30 pm to 7 pm
Room 95, Ernest N. Morial Convention Center
siggraph97@siggraph.org

UNC–Graphics Reunion
6 pm to 8 pm
Arnaud's Restaurant
813 Bienville
The French Quarter
Sherry Palmer
+1.919.962.1740

Computer Graphics Pioneers
6 pm to 9 pm
Balcony J/K, New Orleans Marriott
Sherry Keowen
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SIGGRAPH Round the Clock
24 hours
Iberville, New Orleans Marriott

Thursday
8 August

SIGGRAPH Professional Chapters
8:30 am to 10 am
Rosedown Room, Hilton Riverside
Scott Lang
+1.212.684.7400

SGI Developers Forum
9 am to 8 pm
Oak Alley Room, Hilton Riverside
Julie Kelty
+1.415.933.1703

Public Policy Task Force Special Interest Group Meeting
10:30 am to 12:30 pm
Windsor Room, Hilton Riverside
Robert Ellis
+1.602.837.5202

SIGGRAPH T-Shirt Art Contest
noon to 1 pm
Room 40, Ernest N. Morial Convention Center
Joe Lohmar
+1.217.244.5573

Inter-Society for Electronic Art / International Symposium on Electronic Art
12:15 pm to 1:30 pm
Royal Garden Terrace, Omni Royal Orleans
Cynthia Beth Rubin
+1.802.372.6185

SIGGRAPH Small Conferences–Organizing and Information on SIGGRAPH
1:30 pm to 2:30 pm
Mardi Gras Ballroom Salon A, New Orleans Marriott
Chuck Hansen
+1.505.665.3663

Information Visualization
2 pm to 5 pm
Marlborough Room, Hilton Riverside
Nahum Gershon
+1.703.883.7518

Computers in 2D Graphic Arts: Surface, Fashion, and Textile Design
2:15 pm to 3 pm
Norwich Room, Hilton Riverside
Leslie Nobler-Farber
+1.201.595.3275

Computer Graphics Education Open Meeting
3 pm to 4 pm
Prince of Wales, Hilton Riverside
Judy Brown
+1.319.335.5552

Computer Graphics Education–Art
4 pm to 5 pm
Prince of Wales, Hilton Riverside
Catherine Yoder
+1.602.678.4300

Computer Graphics Education–Computer Science
4 pm to 5 pm
Chequers, Hilton Riverside
Cary Laxer
+1.812.877.8429

Computer Graphics Education–K-12
4 pm to 5 pm
Cambridge, Hilton Riverside
Judy Sachter
+1.512.838.3035

Computer Graphics Education–Engineering
4 pm to 5 pm
Eglinton & Winton, Hilton Riverside
Mike McGrath
+1.303.273.3434

Ray Tracing Roundtable
5:15 pm to 6:45 pm
Balcony J/K, New Orleans Marriott
Eric Haines
+1.607.257.1381

SIGGRAPH Round the Clock
24 hours
Iberville, New Orleans Marriott

Please note: Registration, Merchandise, International Center, and Career Center are open Saturday, 3 August from 7 pm to 10 pm.

Sunday

4 August

10 am | noon | 1:30 | 2 | 5 | 6 | 6:45 | 8 | 9 pm

Registration/Merchandise/International Center
10 am to 9 pm
Advance Registration–Hall D Lobby, Onsite Registration/Merchandise–Hall D, International Center–Hall E Lobby

Course/Full Day
noon to 6:45 pm
1 The Making of "Toy Story" *Room E2/E3*

Courses/Half Day PM
1:30 pm to 5 pm
2 3D Graphics Programming with QuickDraw 3D *Room 10/12/14*
3 Creative Design for the Internet *Room 90/91/92*
4 Programming with OpenGL: An Introduction *Room 37/38/39*
5 Design and Application of Object-Oriented 3D Graphics and Visualization Systems *Ballroom II C*
6 **CANCELLED** The Physics of Rendering Illumination and Shadows of Smokes and Clouds
7 Global Illumination in Architecture and Theater *Room 41/42/43*
8 Information Visualization *Room 58/59/60*

Festival Screening Rooms
6 pm to 8 pm
Rooms 100–104

The Bridge: SIGGRAPH 96 Art Show
6 pm to 8 pm
Convention Center Rooms 61–66

The Bridge: SIGGRAPH 96 Art Show
10 am to 5 pm
Contemporary Arts Center
900 Camp Street, +1.504.566.1005

Digital Bayou
6 pm to 8 pm
Hall C

Fundamentals Seminar
2 pm to 5 pm
Ballroom II A/B

Welcome Reception
6 pm to 8 pm
Digital Bayou enter through Hall C

Career Center
10 am to 9 pm
Room 85/86

Monday

5 August

8 am 8:30 9 10 noon 1:30 5 7 8 9 11 pm

Registration/Merchandise/International Center
8 am to 7 pm
Advance Registration–Hall D Lobby, Onsite Registration/Merchandise–Hall D, International Center–Hall E Lobby

Courses/Full Day
8:30 am to 5 pm
9 Introduction to Computer Graphics *Room E2/E3*
10 Procedural Modeling and Animation Techniques *Room 58/59/60*
11 Implicit Surfaces for Geometric Modeling and Computer Graphics *Room 2/4/6*
12 Graphic Design for Usable GUIs *Room E1*
13 Wavelets in Computer Graphics *Room 41/42/43*
14 Introduction to Virtual Reality *Room 90/91/92*
15 A Practical Guide to Recording Video Animation from Computer Graphics *Room 5/7/9*
16 Visualizing Scientific Data and Information: Focusing on the Physical and Natural Sciences *Room 10/12/14*
25 Life-Like, Believable Communication Agents *Ballroom II C*

Courses/Half Day AM
8:30 am to noon
17 Creating and Manipulating Sound to Enhance Computer Graphics I: Algorithms and Techniques *Room 44*
19 High-Technology Marketing: An Introduction to Key Concepts and Tools for Strategic Marketing of Technology Products *Room 40*
20 Introduction to Digital Compositing *Ballroom II A/B*
23 Programming with OpenGL: Advanced Rendering *Room 37/38/39*

Courses/Half Day PM
1:30 pm to 5 pm
18 Creating and Manipulating Sound to Enhance Computer Graphics II: Applications and Demonstrations *Room 44*
21 Intermediate Digital Compositing *Ballroom II A/B*
22 OpenGL and Window System Integration *Room 37/38/39*
24 How to Survive as a Computer Graphics Entrepreneur *Room 40*

Electronic Theater
7 pm to 9 pm
Saenger Theatre
143 North Rampart Street, +1.504.525.1052

Festival Screening Rooms
9 am to 7 pm
Rooms 100–104

The Bridge: SIGGRAPH 96 Art Show
9 am to 7 pm
Convention Center Rooms 61–66

The Bridge: SIGGRAPH 96 Art Show
10 am to 5 pm
Contemporary Arts Center
900 Camp Street, +1.504.566.1005

Digital Bayou
9 am to 7 pm
Hall C

Course Reception
8 pm to 11 pm
Cajun & Creole Queen Paddleboats and New Orleans Cruiseship Terminal

Career Center
8 am to 7 pm
Room 85/86

Tuesday

6 August

8 am 8:30 9 10 noon 1:30 5 6 7 8 9 11 pm

Registration/Merchandise/International Center
8 am to 7 pm
Advance Registration–Hall D Lobby, Onsite Registration/Merchandise–Hall D, International Center–Hall E Lobby

Exhibition
10 am to 6 pm
Halls B2, C, D, E, and portions of F

Courses/Full Day
8:30 am to 5 pm
26 Introduction to Curves and Surfaces *Room 40*
27 Fractal Models for Image Synthesis, Compression, and Analysis *Room 58/59/60*
28 Digital Color *Room 90/91/92*
29 Representations of Geometry for Computer Graphics *Room 41/42/43*
30 Pixel Cinematography: A Lighting Approach for Computer Graphics *Room E2/E3*
31 Practical 3D User Interface Design *Room E1*
32 Introduction to VRML *Ballroom II A/B*
33 Designing Real-Time 3D Graphics for Entertainment *Ballroom II C*
34 Volume Visualization: Principles and Practice *Room 2/4/6*
35 Interactive Walkthrough of Large Geometric Databases *Room 10/12/14*
36 Artificial Life for Graphics, Animation, Multimedia, and Virtual Reality *Room 37/38/39*
37 So Real I Can Almost Touch It: The Use of Touch as an I/O Device for Graphics and Visualization *Room 44*

Courses/Half Day AM
8:30 am to noon
38 Scene Modeling Tools in Open Inventor *Room 5/7/9*

Courses/Half Day PM
1:30 pm to 5 pm
39 Programming Animation and Interaction in Open Inventor *Room 5/7/9*

Electronic Theater
6 pm to 8 pm
Saenger Theatre
143 North Rampart Street
+1.504.525.1052

Electronic Theater
9 pm to 11 pm
Saenger Theatre
143 North Rampart Street
+1.504.525.1052

Festival Screening Rooms
9 am to 7 pm
Rooms 100–104

The Bridge: SIGGRAPH 96 Art Show
9 am to 7 pm
Convention Center Rooms 61–66

The Bridge: SIGGRAPH 96 Art Show
10 am to 5 pm
Contemporary Arts Center
900 Camp Street, +1.504.566.1005

Applications
10 am to 5 pm
Hall C

Digital Bayou
9 am to 7 pm
Hall C

Career Center
8 am to 7 pm
Room 85/86

Wednesday

7 August

8 am | 9 | 10 | 10:15 | 1:30 pm | 3:30 | 5 | 5:15 | 6 | 8 pm

Registration/Merchandise/International Center
8 am to 6 pm
Advance Registration–Hall D Lobby, Onsite Registration/Merchandise–Hall D, International Center–Hall E Lobby

Keynote Address / Award
8:15 am to 9:45 am
Room E2/E3

Animator Sketches
10:15 am to 5:15 pm
Room 59

Exhibition
10 am to 6 pm
Halls B2, C, D, E, and portions of F

Papers (Papers breakout room, *Room 56*)

10:15 am to noon
Image-Based Modeling & Rendering
Ballroom II C

1:30 pm to 3:15 pm
Hierarchical Rendering Techniques
Ballroom II C

3:30 pm to 5:15 pm
Level of Detail
Ballroom II C

Panels (Panels breakout room, *Room 55*)

10:15 am to noon
The Future of Virtual Reality: Head Mounted Displays Versus Spatially Immersive Displays
Room E2/E3

Roundtable: Art on the Web, the Web as Art
Ballroom II A/B

1:30 pm to 3:15 pm
VRML: Prelude and Future
Room E2/E3

Breaking the Myth: One Picture is NOT (Always) Worth a Thousand Words
Ballroom II A/B

3:30 pm to 5:15 pm
Digital Stunt Doubles: Safety Through Numbers
Room E2/E3

Global Multi-User Virtual Environments
Ballroom II A/B

Technical Sketches
10:15 am to 5:15 pm
Rooms 58–60

Electronic Theater
6 pm to 8 pm
Saenger Theatre
143 North Rampart Street
+1.504.525.1052

Festival Screening Rooms
9 am to 6 pm
Rooms 100–104

The Bridge: SIGGRAPH 96 Art Show
9 am to 6 pm
Convention Center Rooms 61–66

The Bridge: SIGGRAPH 96 Art Show
10 am to 5 pm
Contemporary Arts Center
900 Camp Street, +1.504.566.1005

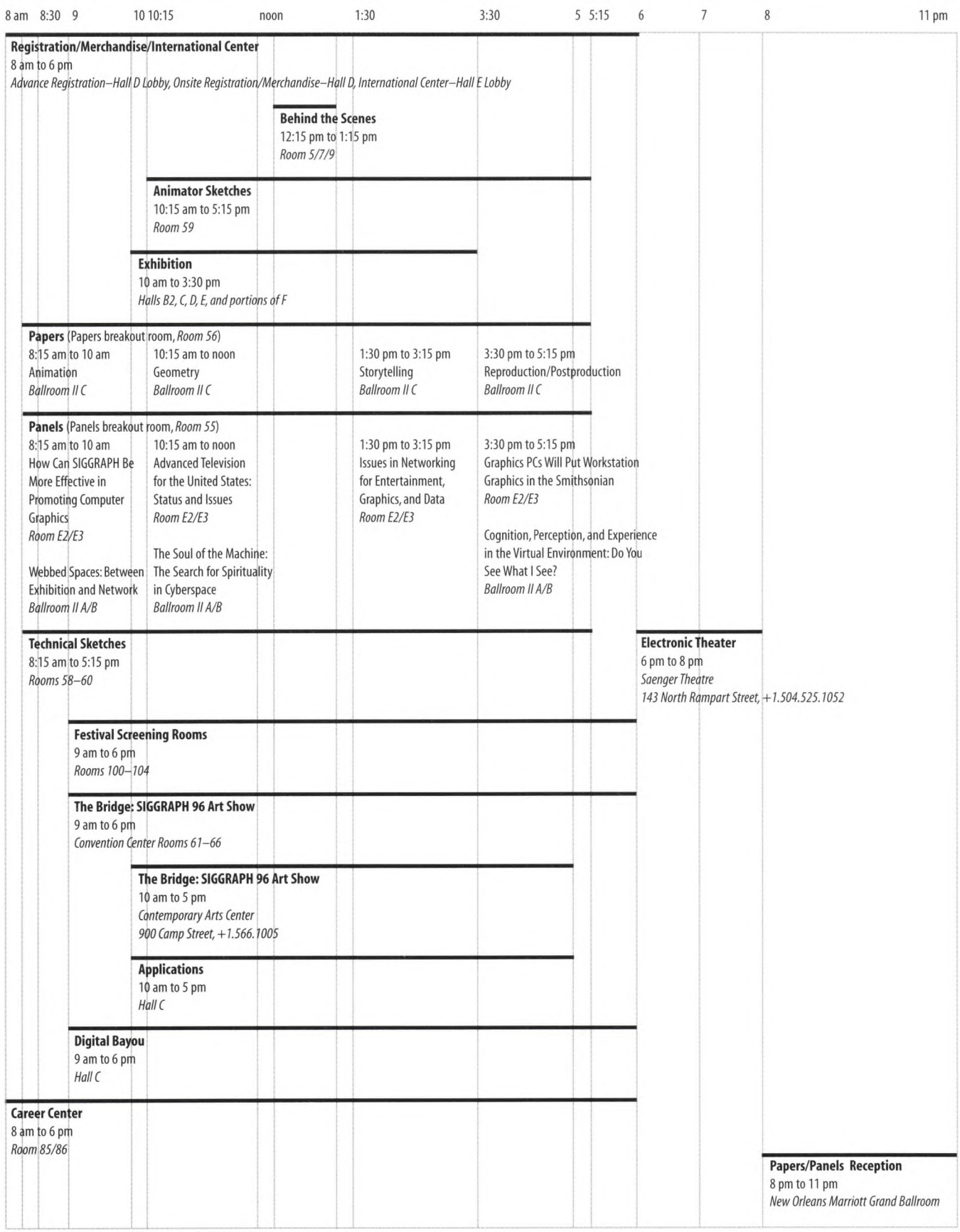
Applications
10 am to 5 pm
Hall C

Digital Bayou
9 am to 6 pm
Hall C

Career Center
8 am to 6 pm
Room 85/86

Thursday

8 August



Friday

9 August

8:15 am | 9 | 10 | 10:15 | noon | 1 pm | 1:30 | 3 | 3:30 | 5:15 pm

Registration/Merchandise/International Center
8:30 am to 1 pm
Advance Registration–Hall D Lobby, Onsite Registration/Merchandise–Hall D, International Center–Hall E Lobby

Artist/Designer Sketches
10:15 am to 3:30 pm
Room 60

Special Session
noon to 1:30 pm
Room E2/E3

Papers (Papers breakout room, *Room 56*)
8:15 am to 10 am
Samples & Textures
Ballroom II C

10:15 am to noon
Surface Reconstruction
Ballroom II C

Architectures
Room E1

1:30 pm to 3:15 pm
Natural Phenomena
Ballroom II C

Virtual Reality
Room E1

3:30 pm to 5:15 pm
Illustration
Ballroom II A/B

Panels (Panels breakout room, *Room 55*)
8:15 am to 10 am
Virtual Reality and
Mental Disorders
Room E2/E3

10:15 am to noon
Building Compelling VRML Worlds
Ballroom II A/B

1:30 pm to 3:15 pm
Live Computer Animation
Ballroom II A/B

3:30 pm to 5:15 pm
Imaging Features in Advanced
Computer Graphics Architectures
Room E2/E3

Technical Sketches
8:15 am to 5:15 pm
Rooms 58–60

Educators Program
8:30 am to 5:15 pm
Room 2/4/6 & 10/12

Festival Screening Rooms
9 am to 5 pm
Rooms 100–104

The Bridge: SIGGRAPH 96 Art Show
9 am to 1 pm
Convention Center Rooms 61–66

The Bridge: SIGGRAPH 96 Art Show
10 am to 5 pm
Contemporary Arts Center
900 Camp Street, +1.504.566.1005

Digital Bayou
9 am to 3 pm
Hall C

Career Center
8:30 am to 5 pm
Room 85/86

Lectures, demonstrations, and seminars on every aspect of the field, from basic principles to multi-dimensional mathematics. All courses are located in the Ernest N. Morial Convention Center.

See pages 26–35 for course locations.

Sunday
noon to 6:45 pm Full Day
1:30 pm to 5 pm Half Day

Monday and Tuesday
8:30 am to 5 pm Full Day
8:30 am to noon Half Day AM
1:30 pm to 5 pm Half Day PM

Course Notes

Conference Passport and Courses Passport registrants receive all course notes on CD-ROM. Subject to availability, printed course notes can be purchased at the merchandise-only counter in Hall D.

Course Categories

Beginning
No prerequisites for introductory courses, but prior experience with computing or graphics may be helpful.

Intermediate
Attendees should have working knowledge of the subject, based on introductory courses, reading, and practical experience. Intermediate-level courses supply substantial technical content in detail, such as algorithms, techniques, and architectures.

Advanced
Narrow topics covered in substantial depth. Presentations may include challenging mathematical concepts and programming examples.

Chair
SCOTT SENFTEN
Landmark Graphics Corporation

Administrative Assistant
BRENDA HASH

Committee
WAYNE CARLSON
The Ohio State University

DAVID S. EBERT
University of Maryland Baltimore County

BARB HELFER
The Ohio State University

GREG PASSMORE
Consultant

NAN C. SCHALLER
Rochester Institute of Technology

HARRY F. SMITH
University of North Carolina at Wilmington

Sunday
4 August

1

The Making of "Toy Story"

Room E2/E3

Sunday / Full Day / Beginning

An inside look into the production of "Toy Story," the world's first feature-length computer-animated film. Presentations by members of the crew take the audience through each stage of the production pipeline: art and design, modeling, shading, layout, animation, lighting, and effects.

Who Should Attend
Anyone with an interest in traditional filmmaking/animation or computer graphics/animation who would like to know more about the thought processes and techniques involved in the making of a computer-animated feature film.

Organizer
GRAHAM WALTERS
Pixar

Lecturers
TIA KRATTER
GALYN SUSMAN
EBEN OSTBY
RICK SAYRE
ELIOT SMYRL
CRAIG GOOD
PETE DOCTER
SHARON CALAHAN
OREN JACOB
JOE RANFT
Pixar

2

3D Graphics Programming with QuickDraw 3D

Room 10/12/14

Sunday / Half Day / Beginning

An overview of and programming introduction to QuickDraw 3D, a customer driven, cross-platform, extensible 3D graphics architecture available for Windows 95, Windows NT, and MacOS. QuickDraw 3D offers a rich set of geometries, metafile support, a user interface layer, and a plug-in architecture to extend the core API.

The course includes real-world examples of QuickDraw 3D-based applications, as well as other samples and demos. Course materials, especially the CD-ROM, allow attendees with knowledge of C programming to develop a working QuickDraw 3D application.

Who Should Attend
Application and scientific programmers or technical managers involved in developing 3D graphics applications or 3D graphics software components (plug-in renderers, shaders, and geometries). The course is particularly recommended for anyone interested in adopting or replacing a commercial and cross-platform 3D graphics library for application development.

Organizer
FÁBIO PETTINATI
Apple Computer, Inc.

Lecturers
PABLO FERNICOLA
ROBERT DIERKES
RICHARD LAWLER
PHILIP SCHNEIDER
Apple Computer, Inc.

3

Creative Design for the Internet

Room 90/91/92

Sunday / Half Day / Beginning

Creative interface design is essential for a successful Internet experience. This course focuses on design issues that should be considered when developing content and experiences using HTML and the Palace. It enables attendees to be more creative as they develop content for the Internet.

Who Should Attend
Anyone who develops or is interested in developing interactive content for the Internet using HTML and anyone interested in designing creative experiences in the Palace.

Organizer
BONNIE MITCHELL
Syracuse University

Lecturers
JIM BUMGARDNER
Time Warner

ANDREW FARRIS
Syracuse University

4

Programming with OpenGL: An Introduction

Room 37/38/39

Sunday / Half Day / Beginning

An introduction to programming interactive graphics programs using the OpenGL API (OpenGL 1.0 and the OpenGL 1.1 additions) with an emphasis on computer graphics fundamentals.

Who Should Attend
Programmers who want to write interactive graphics applications and who have little or no experience with OpenGL.

Organizer
TOM Mc REYNOLDS
Silicon Graphics, Inc.

Lecturer
KATHLEEN DANIELSON
Silicon Graphics, Inc.

5

Design and Application of Object-Oriented 3D Graphics and Visualization Systems

Ballroom II C

Sunday / Half Day / Intermediate

3D graphics and object-oriented systems have emerged as premier technologies for creation of flexible, extensible, and intuitive software applications. This course shows you how to design your own applications to take advantage of object-oriented techniques and methods in 3D graphics and visualization.

Who Should Attend
Users, developers, and researchers of 3D graphics and visualization systems, or practitioners who want to use graphics and visualization in their own applications.

Organizer
WILLIAM SCHROEDER
General Electric Corporate Research and Development

Lecturers
WILLIAM LORENSEN
KENNETH MARTIN
General Electric Corporate Research and Development

TOM CITRINITI
Rensselaer Polytechnic Institute

JEAN FAVRE
Swiss Center for Scientific Computing

6

The Physics of Rendering Illumination and Shadows of Smokes and Clouds

has been cancelled due to withdrawal of support beyond the control of the organizer and SIGGRAPH 96.

7

Global Illumination in Architecture and Theater

Room 41/42/43

Sunday / Half Day / Beginning

Global illumination techniques such as Monte Carlo ray tracing and radiosity enable us to accurately model lighting designs and create physically realistic renderings for architectural, theater and stage, and entertainment applications. This course reviews these techniques, with an emphasis on useful solutions, available software and hardware tools, and real-world case studies.

Who Should Attend
Anyone interested in using computer graphics to model lighting designs and create physically realistic renderings for architectural, theater and stage, and entertainment applications. This includes computer graphic artists, software developers, theater and stage set designers, entertainment imagineers, architects, and lighting designers.

Organizer
IAN ASHDOWN
Ledalite Architectural Products, Inc.

Lecturers
STUART FELDMAN
Lightscape Technologies, Inc.

ROBERT SHAKESPEARE
Indiana University

GREG WARD
Lawrence Berkeley National Laboratory

Sunday
4 August

8

Information Visualization

Room 58/59/60

Sunday / Half Day / Beginning

This course gives participants a working knowledge of effective visualization approaches for presenting information. Visual representation of information requires merging data visualization methods, computer graphics, design, and imagination. In contrast with scientific spatial data, information spaces are abstract and different from physical data spaces and thus require different visualization approaches. The course covers types of information and visualization of retrieved information in the World Wide Web (browsing and searching), large document collections, and databases. Attendees learn about usability studies and how to make sense of information with visualization. Practical applications are illustrated through specific case studies on and off the Internet.

Who Should Attend
People who would like to improve interaction of users with information, would like to be able to produce effective presentations on the World Wide Web with scientific visualization, and would like to extend the scope of their work.

Organizer
NAHUM D. GERSHON
The MITRE Corporation

Lecturers
STUART CARD
Xerox PARC

STEPHEN EICK
AT&T Bell Laboratories

Monday
5 August

9

Introduction to Computer Graphics

Room E2/E3

Monday / Full Day / Beginning

The SIGGRAPH conference is an exciting event, but it is often a daunting experience for a first-time attendee. 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. At the end of the day, attendees will be well prepared to understand, appreciate, and learn from the rest of SIGGRAPH 96.

Who Should Attend
The complete beginner who needs to be able to appreciate and understand the rest of the SIGGRAPH conference.

Organizer
MIKE BAILEY
University of California at San Diego

Lecturers
ANDREW GLASSNER
Microsoft Research

PATRICIA WENNER
Bucknell University

10

Procedural Modeling and Animation Techniques

Room 58/59/60

Monday / Full Day / Advanced

This course imparts a working knowledge of procedural approaches in modeling, shading, and animation. Procedural approaches include solid texturing, hypertextures, volume density functions, character animation, fractals, artificial evolution, L-systems, and implicit surfaces. The course provides participants with details that are often omitted from technical papers, explores the design of procedures, and presents new material in procedural modeling and animation.

Who Should Attend
Individuals interested in procedural modeling, shading, and animation techniques; the procedural design approaches of several researchers; and a toolbox of procedures for producing realistic images.

Organizer
DAVID EBERT
University of Maryland Baltimore County

Lecturers
JOHN HART
Washington State University

F. KENTON MUSGRAVE
Bethesda Softworks

KEN PERLIN
New York University

KARL SIMS
Genetic Arts

BRIAN WYVILL
University of Calgary

11

Implicit Surfaces for Geometric Modeling and Computer Graphics

Room 2/4/6

Monday / Full Day / Intermediate

In this course, researchers from academia and industry introduce the basic concepts and uses of implicit surfaces in geometric modeling and computer graphics. In particular, the course covers techniques for modeling, visualizing, and animating implicit algebraic patches, skeletal surfaces, and fractal surfaces. Also covered: new twists related to dual boundary and constructive solid geometry representation schemes, parallel hardware for direct processing, and implicit techniques for non-manifold geometry.

Who Should Attend
Engineers involved with CAD, scientists involved with visualization, animators, programmers, or managers who use or build computer animation or geometric modeling tools.

Organizers
JAI MENON
IBM T. J. Watson Research Center

BRIAN WYVILL
University of Calgary

Lecturers
JULES BLOOMENTHAL
Microsoft Corporation

CHANDRAJIT BAJAJ
Purdue University

BAINING GUO
York University

JOHN HART
Washington State University

GEOFF WYVILL
University of Otago

12

Graphic Design for Usable GUIs

Room E1

Monday / Full Day / Beginning

This course explains what user interfaces are and how to design them well. Lectures reveal principles of effective visual communication for developing high-quality user interfaces for productivity tools, multimedia, and online services. Case studies and short design exercises show how to develop user-centered, task-oriented metaphors, mental models, navigation, appearance, and interaction that dramatically improve the usability and appeal of advanced products.

Who Should Attend
Users of user interface construction or multimedia/online authoring tools, programmers, and their managers, who are responsible for researching new tools or for ensuring the market success of applications, products, or services, and who want to acquire an understanding of user interfaces and techniques for designing them well.

Organizer
AARON MARCUS
Aaron Marcus and Associates, Inc.

Lecturers
JOHN ARMITAGE
VOLKER FRANK
PAMELA TIEN
Aaron Marcus and Associates, Inc.

13

Wavelets in Computer Graphics

Room 41/42/43

Monday / Full Day / Intermediate

This course is designed to introduce computer graphics practitioners to the many applications of wavelets: multi-resolution curve and surface modeling, image compression and processing, radiosity and radiance computations, solution of PDEs, and constrained optimization problems. It covers both wavelet fundamentals and application-driven algorithms, which can be put to immediate use by the participants.

Who Should Attend
Practitioners (students, researchers, implementors) in the field of computer graphics who want to come up to speed rapidly on this important new set of tools, as well as people already familiar with wavelets who want to find out about the current state of the art.

Organizers
PETER SCHRÖDER
California Institute of Technology

WIM SWELDENS
AT&T Bell Laboratories

Lecturers
DAVID SALESIN
University of Washington

MICHAEL COHEN
Microsoft Research

TONY DEROSE
Pixar

14

Introduction to Virtual Reality

Room 90/91/92

Monday / Full Day / Beginning

An introduction to virtual reality using immersive displays. This course covers system requirements, hardware, design of applications, and implementation of virtual worlds. The emphasis is on practical issues that must be addressed to begin working in virtual environments.

Who Should Attend
Those who wish to create immersive virtual environments.

Organizers
ANSELMO LASTRA
HENRY FUCHS
University of North Carolina at Chapel Hill

Lecturers
PAT GELBAND
Sense8

STEPHEN GHEE
Division Limited

HANS WEBE
University of North Carolina

RANDY PAUSCH
University of Virginia

15

A Practical Guide to Recording Video Animation from Computer Graphics

Room 5/7/9

Monday / Full Day / Beginning

From presentations to scientific visualization to education, from the World Wide Web to multimedia desktop systems, video is playing an increasingly important role in our computing environment. Most producers of these new video applications need to increase the quality of their productions. This course provides entry-level education for the growing worldwide community of novice video producers.

Who Should Attend
People starting or planning to build a computer-based video animation recording system, including desktop video or visualization centers for industrial and presentation uses.

Organizer
ROBERT JUDD
Los Alamos National Laboratory

Lecturers
JIM COSTIGAN
University of Illinois at Chicago

ROSS GAUNT
Lawrence Livermore National Laboratory

JOHN MAREDA
Sandia National Laboratories

ANDY MARTINEZ
Los Alamos National Laboratory

16

Visualizing Scientific Data and Information: Focusing on the Physical and Natural Sciences

Room 10/12/14

Monday / Full Day / Intermediate

This course demonstrates the application of visualization tools and interactive techniques for examination and interpretation of scientific datasets. Highly illustrative atmospheric, oceanographic, and geographic examples are demonstrated in real time. Also highlighted: the process of developing effective visualization paradigms for supporting high-speed networking, database management, heterogenous computing platforms, user interface design, collaborative computing, science education, implementation of animation techniques, convergence of visualization methods with the World Wide Web, and the relationship between animation techniques and scientific information exploration.

Who Should Attend
Scientific researchers, educators, and computer graphics specialists interested in exploring particular issues associated with handling visual display of scientific information and large scientific datasets. Experience with scientific visualization systems and terminology is helpful, as well as understanding of graphics programming.

Organizer
THERESA-MARIE RHYNE
Lockheed Martin/ US EPA Scientific Visualization Center

Lecturers
MIKE BOTTS
University of Alabama in Huntsville

BILL HIBBARD
University of Wisconsin-Madison

LLOYD TREINISH
IBM Corporation

17

Creating and Manipulating Sound to Enhance Computer Graphics I: Algorithms and Techniques

Room 44

Monday / Half Day / Intermediate

An introduction to concepts of digital sound synthesis and manipulation: theory, algorithms, and issues in the computation of sound alone and sound combined with graphics. Specific topics include psycho-acoustics, algorithms for audio synthesis and processing, and networked audio. Source and binary code are available via ftp.

Who Should Attend
Engineers and people interested in sound for long-range development involving virtual environments, VRML, and multimedia.

Organizer
PERRY COOK
Princeton University

Lecturers
ROBIN BARGAR
University of Illinois at Urbana-Champaign

XAVIER SERRA
Pompeu Fabra University

ADRIAN FREED
University of California, Berkeley

18

Creating and Manipulating Sound to Enhance Computer Graphics II: Applications and Demonstrations

Room 44

Monday / Half Day / Intermediate

Specific applications and demonstrations illustrating the use of sound synthesis to enhance graphics applications. This course presents alternatives to sampling synthesis for those who want to apply more expression in the control of audio. Specific topics include sound in GUI-controlled applications, animations, virtual reality, HTML, and VRML. Source and binary code are available via ftp.

Who Should Attend
Engineers and people interested in sound for long-range development involving virtual environments, VRML, and multimedia.

Organizer
PERRY COOK
Princeton University

Lecturers
ROBIN BARGAR
University of Illinois at Urbana-Champaign

XAVIER SERRA
Pompeu Fabra University

ADRIAN FREED
University of California, Berkeley

19

High Technology Marketing: An Introduction to Key Concepts and Tools for Strategic Marketing of Technology Products

Room 40

Monday / Half Day / Beginning

This course presents key concepts in strategic marketing that are critical to both startups and established firms. Concepts are presented using Web-based tools and information to show how to develop successful product marketing strategies and plans.

Who Should Attend
All entrepreneurs, product or engineering managers, and executives in startup or established companies who are involved in defining or directing business and marketing strategies.

Organizer
RANDY NICKEL
Technology Marketing Consulting

Lecturer
TIM SHETLER
Informix Software Inc.

20

Introduction to Digital Compositing

Ballroom II A/B

Monday / Half Day / Beginning

This course covers the basic terms and processes required to understand compositing, particularly as it applies to a production environment. It details the basic operations used to combine multiple image elements into a single seamless image or image sequence, including how to prepare and repair elements, and what is needed for a clean final composite.

Who Should Attend
Anyone who needs to create an image or sequence of images that contains elements from different sources. The course is presented from a production viewpoint, but the concepts apply to graphic design, engineering, scientific visualization, and fine art.

Organizer
RON BRINKMANN
Sony Pictures Imageworks

Lecturers
GARY JACKEMUK
Digital Domain

JEROME CHEN
Sony Pictures Imageworks

21

Intermediate Digital Compositing

Ballroom II A/B

Monday / Half Day / Intermediate

This course continues where Introduction to Digital Compositing ends. It summarizes how elements are prepared and repaired before compositing and explains several more advanced techniques typically used to seamlessly integrate images from multiple sources. Specific examples from real-world productions are discussed and analyzed.

Who Should Attend
Anyone who needs to create an image or sequence of images that contains elements from different sources. The course is presented from a production viewpoint, but the concepts apply to graphic design, engineering, scientific visualization, and fine art.

Organizer
RON BRINKMANN
Sony Pictures Imageworks

Lecturers
GARY JACKEMUK
Digital Domain

JEROME CHEN
Sony Pictures Imageworks

22

OpenGL and Window System Integration

Room 37/38/39

Monday / Half Day / Intermediate

Development options for writing portable, high-performance, OpenGL programs for the X Window System. In addition to the standard Xlib and Motif interfaces, the course introduces high-level toolkits and alternative OpenGL interfaces for non-X11 systems such as Win32, OS/2, and the Macintosh. It also explains how OpenGL is accelerated by various classes of 3D graphics hardware and how to tune the performance of OpenGL applications for these common hardware classes.

Who Should Attend
X or OpenGL programmers who want to learn how to write OpenGL programs that cleanly, efficiently, and portably interface with the X Window System. Also: programmers planning to port X11-based OpenGL applications to other window systems.

Organizer
MARK KILGARD
Silicon Graphics, Inc.

Lecturer
BRIAN PAUL
University of Wisconsin-Madison

23

Programming with OpenGL: Advanced Rendering

Room 37/38/39

Monday / Half Day / Intermediate

Moving beyond the straightforward images generated by the novice, this course demonstrates the more sophisticated and novel techniques that are possible with the OpenGL library. Explanations of the concepts and demonstrations of the techniques required to generate images of greater realism and utility provide deeper insights into OpenGL functionality and computer graphics concepts.

Who Should Attend
Developers who need to generate more challenging or realistic images using OpenGL, anyone interested in the practical application of advanced rendering techniques, and application developers who want to use OpenGL with increased understanding and competence.

Organizer
TOM McREYNOLDS
Silicon Graphics, Inc.

Lecturer
DAVID BLYTHE
Silicon Graphics, Inc.

Monday
5 August

24
How to Survive as a Computer Graphics Entrepreneur

Room 40

Monday / Half Day / Beginning

Helpful approaches to finding the answer to a basic question: "Can I survive as a computer graphics entrepreneur?" Course presenters provide practical knowledge and experience, business advice, and an audience-participation session.

Who Should Attend
Individuals in the computer graphics field who intend to start or wish to investigate the possibility of launching their own computer-graphics-oriented business.

Organizer
MARK LEON
Forward Edge Technologies

Lecturers
DAVID HAMBY
Lightspan Partnership

NANCY COLLIER
Barking Dog Software

25
Life-Like, Believable Communication Agents

Ballroom II C

Monday / Full Day / Intermediate

This course is designed to give attendees a clear idea of how humans will be able to interact and communicate with computer agents of the future in a natural and life-like manner. The course first discusses the concept and characteristics of "believable" communication agents. Various state-of-the-art technologies are then presented with an emphasis on how they can be integrated with computer graphics technologies to realize next-generation agents.

Who Should Attend
Researchers who are interested in computer agents, especially investigators who have a background in computer vision and computer graphics and are willing to utilize computer agents.

Organizers
RYOHEI NAKATSU
KENJI MASE
ATR Media Integration & Communications Research Laboratories

Lecturers
NAOKO TOSA
ATR Media Integration & Communications Research Laboratories

SHIGEO MORISHIMA
Seikei University

ALEX PENTLAND
JUSTINE CASSELL
Massachusetts Institute of Technology

KEN PERLIN
New York University

Tuesday
6 August

26
Introduction to Curves and Surfaces

Room 40

Tuesday / Full Day / Beginning

The most commonly encountered concepts from CAGD are introduced using interactive demos and animations in an electronic book. Concepts include Bézier and B-spline curves and surfaces, their salient properties, and methods to handle them. Breakout sessions with all four speakers will be provided after the main presentation, both morning and afternoon.

Who Should Attend
CAD developers, programmers, analysts, animators, technical managers, researchers, and educators who want an introduction to curve and surface theory.

Organizer
ALYN ROCKWOOD
Arizona State University

Lecturers
HANS HAGEN
Universität Kaiserslautern

PETE CHAMBERS
VLSI Technology

THOMAS McINERNEY
Apple Computer, Inc.

27
Fractal Models for Image Synthesis, Compression, and Analysis

Room 58/59/60

Tuesday / Full Day / Intermediate

As fractal geometry matures, its applications are extending beyond computer graphics image synthesis to closely related fields such as image analysis and image coding. This course teaches fractal concepts for modeling and analysis for computer graphics. It clarifies subtle differences in fractal representations, explains fractal image compression, and provides both presentation-quality and interactive methods for visualizing 3D fractal models. It develops a rigorous theory for demonstrated applications, ranging from botanical modeling to analysis of medical imagery.

Who Should Attend
Students and professionals who want a comprehensive view of fractals in computer graphics, with an emphasis on recent results.

Organizers
DIETMAR SAUPE
Universität Freiburg

JOHN HART
Washington State University

Lecturers
RICHARD VOSS
Florida Atlantic University

F. KENTON MUSGRAVE
Bethesda Softworks

CARL J.G. EVERTZ
Universität Bremen

PRZEMYSLAW PRUSINKIEWICZ
University of Calgary

28

Digital Color

Room 90/91/92

Tuesday / Full Day / Intermediate

Computers have been used to generate synthetic images since the first SIGGRAPH conference, and to generate color images for nearly that long. But only recently has it become practical to create and reproduce digital images with predictable, accurate color, and easily move images from the SIGGRAPH world into video, film, and print. This course explains the science behind color reproduction, image digitization, and image reproduction in video, film, print, and computer graphics.

Who Should Attend
Hardware and software engineers, system designers, digital cinematographers, and advanced end users, including digital photographers.

Organizer
CHARLES POYNTON
Poynton Vector Corporation

Lecturers
THOR OLSON
Management Graphics

MICHAEL BOURGOIN
Adobe Systems, Inc.

JAN DE CLIPPELEER
Agfa-Gavaert

29

Representations of Geometry for Computer Graphics

Room 41/42/43

Tuesday / Full Day / Advanced

The latest research on the most important computational representations of geometry used in computer graphics. The emphasis is on their strengths and weaknesses and how to build a coherent system that supports multiple representations.

Who Should Attend
Industrial software engineers engaged in the implementation of computer-graphics, geometric-modeling, or visualization-based systems, and anyone who is conducting research in these "geometric computation" areas.

Organizer
BRUCE NAYLOR
Spatial Visions

Lecturers
CHANDRAJIT BAJAJ
Purdue University

HERBERT EDELSBRUNNER
University of Illinois

ARIE KAUFMAN
State University of New York at Stony Brook

JAREK ROSSIGNAC
IBM Corporation

30

Pixel Cinematography: A Lighting Approach for Computer Graphics

Room E2/E3

Tuesday / Full Day / Intermediate

A comprehensive approach to lighting for computer graphics. Four experts from both traditional cinematography and digital studio backgrounds offer insight on several issues, including real-world lighting and how it relates to CG lighting, material properties, integration and compositing issues, and how lighting relates to storytelling.

Who Should Attend
Anyone interested in computer lighting from a visual perspective. Attendees should have some experience with computer graphics.

Organizer
JOHN KAHRS
Blue Sky Productions

Lecturers
SHARON CALAHAN
Pixar

STEVEN POSTER
A.S.C.

EUAN MACDONALD
Industrial Light & Magic

31

Practical 3D User Interface Design

Room E1

Tuesday / Full Day / Intermediate

Principles and techniques for creating 3D user interfaces (3D UIs) for modeling, animation, information visualization, multimedia, video games, and other emerging interactive systems with an emphasis on real-world 3D UI problems and practical solutions. Speakers from leading-edge companies and the research community address their design principles and processes and the results of their final implementations. Special attention is focused on: working with low-end platforms, supporting the World Wide Web, mixing 3D and 2D workspaces, and scalability. The course includes spirited roundtable discussions, live demonstrations, and case-study presentations.

Who Should Attend
UI product designers and software engineers who wish to create new 3D UIs or extend their current UIs by incorporating 3D UI techniques into production-quality applications. Researchers can also gain an understanding of the demanding 3D UI needs of real-world systems, including scalability, robustness, consistency, and breadth of functionality.

Organizer
DANIEL ROBBINS
Microsoft Corporation

Lecturers
KEVIN MATTHEWS
Artifice, Inc. and University of Oregon

ROMAN ORMANDY
Caligari Inc.

NARENDRA VARMA
Microsoft Pty Ltd

MARK MINE
University of North Carolina at Chapel Hill

32

Introduction to VRML

Ballroom II A/B

Tuesday / Full Day / Beginning

How to use VRML (Virtual Reality Modeling Language) to author 3D virtual worlds on the World Wide Web. Participants learn the syntax of VRML, typical usage patterns, how to avoid common mistakes, and tricks and techniques for increasing performance and realism. The course includes details and techniques not available in the VRML specification or published texts.

Who Should Attend
This course is intended for those who are interested in authoring their own virtual worlds on the Web using VRML.

Organizer
DAVID NADEAU
San Diego Supercomputer Center

Lecturers
JOHN MORELAND
San Diego Supercomputer Center

MICHAEL HECK
Template Graphics Software, Inc.

33

Designing Real-Time 3D Graphics for Entertainment

Ballroom II C

Tuesday / Full Day / Intermediate

This course explores creation of real-time 3D games on platforms ranging from game consoles to location-based entertainment systems. Topics include the hardware architectures of game machines, visual simulation tricks, 3D modeling, character animation, and game prototyping, programming, and tuning to the metal. Recent efforts to enable reuse of content across platforms are also explored, including cross-platform renderers, game authoring systems, VRML, and 3D toolkits for Java. Speakers draw examples from development of actual games, tools, and production environments.

Who Should Attend
Programmers, modelers, and individuals with technical backgrounds in computer graphics who are interested in how 3D games are created.

Organizer
JAMES HELMAN
Silicon Graphics, Inc.

Lecturers
STEVE ROTENBERG
Angel Studios

PHILIPPE TARBOURIECH
Electronic Arts

SCOTT WATSON
Walt Disney Imagineering

ANDY BIGOS
3D Labs

34

Volume Visualization: Principles and Practice

Room 2/4/6

Tuesday / Full Day / Intermediate

Volume visualization is a key technology for visualizing 3D-sampled, simulated, and synthetic datasets. This course provides an overview of the nomenclature, the technology, and the techniques, with an emphasis on algorithms, software tools, and applications. It covers different approaches in surface extraction, volume viewing, volume shading, volume synthesis, volumetric global illumination, commercially available software, and applications. Slides, videos, and live demos demonstrate state-of-the-art techniques.

Who Should Attend
Computer scientists and professionals who develop visualization techniques for volume data, and professionals in scientific, engineering, and biomedical disciplines who use or plan to use these techniques.

Organizer
ARIE KAUFMAN
State University of New York at Stony Brook

Lecturers
RICK AVILA
WILLIAM LORENSEN
LISA SOBIERAJSKI
General Electric Corporate Research and Development

RONI YAGEL
The Ohio State University

35

Interactive Walkthrough of Large Geometric Databases

Room 10/12/14

Tuesday / Full Day / Intermediate

Techniques, algorithms, data structures, and databases for interactively displaying very large geometric databases (greater than one million polygons drawn at least 10 frames per second). Beginning with a discussion of basic techniques and leading to state-of-the-art algorithms, speakers address key issues in walkthrough, including visibility computations, automatic object simplification, and memory management through database subset pre-fetching. Speakers show real applications of these algorithms to a variety of areas, including visual simulation, virtual reality, architecture, and digital mockup.

Who Should Attend
Workers in simulation, animation, virtual reality, architecture, CAD, medical imaging, and scientific visualization who deal with geometric databases much larger than the interactive display capacity of their workstations.

Organizer
ERIC BRECHNER
Microsoft Corporation

Lecturers
BRIAN CABRAL
Silicon Graphics, Inc.

NED GREENE
Apple Computer, Inc.

JAREK ROSSIGNAC
IBM Corporation

THOMAS FUNKHOUSER
AT&T Bell Laboratories

36

Artificial Life for Graphics, Animation, Multimedia, and Virtual Reality

Room 37/38/39

Tuesday / Full Day / Intermediate

This course investigates the increasingly important role that artificial life concepts are playing across the breadth of computer graphics, including image synthesis, modeling, animation, multimedia, and virtual reality. Attendees are systematically introduced to techniques for realistically modeling and animating living things. They also explore graphics techniques that emulate phenomena fundamental to biological organisms, such as biomechanics, behavior, growth, and evolution. Topics include modeling and animation of plants, animals, and humans; behavioral animation; communication and interaction with autonomous agents in virtual worlds; and artificial evolution for graphics and animation.

Who Should Attend
Graphics researchers and practitioners, including animators and VR enthusiasts, who seek a close encounter with "life" at the leading edge of graphics modeling.

Organizer
DEMETRI TERZOPOULOS
University of Toronto

Lecturers
PATTIE MAES
Massachusetts Institute of Technology

PRZEMYSLAW PRUSINKIEWICZ
University of Calgary

CRAIG REYNOLDS
Silicon Studios

KARL SIMS
Genetic Arts

DANIEL THALMANN
Swiss Federal Institute of Technology

37

So Real I Can Almost Touch It: The Use of Touch as an I/O Device for Graphics and Visualization

Room 44

Tuesday / Full Day / Advanced

The sense of touch is underexploited as an input/output device for computer graphics and scientific visualization. This course explores various tactile technologies and how to adapt them for use in human-computer interaction.

Who Should Attend
Graphics users who are working to enhance the human-computer interface by any means possible. The course is designed for the intermediate attendee, someone who has moderate 3D graphics programming experience and is now hoping to enhance that experience with knowledge of haptic input devices.

Organizer
MIKE BAILEY
University of California at San Diego

Lecturers
DAVID JOHNSON
TiNi Alloy Company

JIM KRAMER
Virtual Technologies, Inc.

THOMAS MASSIE
SensAble Devices, Inc.

RUSSELL TAYLOR
University of North Carolina

MARK YIN
Stanford University

38

Scene Modeling Tools in Open Inventor

Room 5/7/9

Tuesday / Half Day / Intermediate

Open Inventor is a high-level, cross-platform, object-oriented, 3D interactive graphics and animation toolkit. This course covers the knowledge required to create and organize scenes and objects in Open Inventor, including scene graph organization, shapes, properties, groups, lights, cameras, textures, Windows interfacing, VRML, and release 2.1 extensions. Basic concepts are illustrated with demonstration programs that execute on one screen while attendees examine associated source code on another.

Who Should Attend
Application developers, including those who are creating 3D, interactive, animated applications for Windows and UNIX platforms; multimedia developers who wish to use the Inventor library to handle rendering, interaction, and animation; OpenGL jocks who want to step up to a higher level of object-oriented specification; and graphics tinkerers with Windows boxes who want to develop cool models and applications.

Organizer
CHRIS BUCKALEW
California Polytechnic State University

Lecturers
LEWIS HITCHNER
California Polytechnic State University, San Luis Obispo

JOHN READEY
Portable Graphics, Inc.

39

Programming Animation and Interaction in Open Inventor

Room 5/7/9

Tuesday / Half Day / Intermediate

This course covers the knowledge required to program animation and interaction in Open Inventor, including sensors, engines, manipulators, events, Windows interfacing, and performance optimization. Basic concepts are anchored with demonstration programs that execute on one screen while attendees examine associated source code on another.

Who Should Attend
Application developers, including those creating 3D, interactive, animated applications for Windows and UNIX platforms; multimedia developers who wish to use the Inventor library to handle rendering, interaction, and animation; OpenGL jocks who want to step up to a higher level of object-oriented specification; and VRML developers who want to extend their modeling knowledge.

Organizer
CHRIS BUCKALEW
California Polytechnic State University

Lecturers
LEWIS HITCHNER
California Polytechnic State University, San Luis Obispo

JOHN READEY
Portable Graphics, Inc.

PAPERS

The annual international forum for intellectual achievement at the leading edge of computer graphics. Following each paper presentation, attendees and presenters are invited to meet in the Papers breakout room, Room 56, for continued discussion.

PANELS

Who are we? What is this technology? Where will we take it? Why are we going there? Presentations, debates, and audience questions on the past, present, and future of computer graphics technologies. Following each panel presentation, attendees and presenters are invited to meet in the Panels breakout room, Room 55, for continued discussion.

See pages 37–43 for Papers and Panels locations.

Wednesday
10:15 am to 5:15 pm

Thursday and Friday
8:15 am to 5:15 pm

Papers Chair
HOLLY RUSHMEIER
IBM T.J. Watson Research Center

Committee
JULES BLOOMENTHAL
Microsoft Corporation

FREDERICK P. BROOKS, JR.
University of North Carolina at Chapel Hill

TOM CALVERT
Simon Fraser University

ED CATMULL
Pixar

TONY DeROSE
Pixar

STEVEN FEINER
Columbia University

EUGENE FIUME
University of Toronto

KURT FLEISCHER
Pixar

A. ROBIN FORREST
University of East Anglia

PAT HANRAHAN
Stanford University

JESSICA HODGINS
Georgia Institute of Technology

DAVID KIRK
Crystal Dynamics

R. VICTOR KLASSEN
Xerox Corporation

MARC LEVOY
Stanford University

BILL LORENSEN
General Electric Company

NELSON MAX
Lawrence Livermore National Laboratory

GARY MEYER
University of Oregon

RICHARD PARENT
The Ohio State University

DAVID H. SALESIN
University of Washington

HANS-PETER SEIDEL
Universität Erlangen

Francois Sillion
iMAGIS/CNRS

Richard Szeliski
Microsoft Corporation

GREG WARD
Ernest Orlando Lawrence Berkeley National Laboratory

TURNER WHITTED
Numerical Designs Limited

Papers Video Proceedings
ROBERT McDERMOTT
University of Utah

JAMES ROSE
Nichols Research Corporation

Panels Chair
THERESA-MARIE RHYNE
Lockheed Martin/US EPA Scientific Visualization Center

Administrator
DAVID TAYLOR
Southwest Point Computing

Committee
WES BETHEL
Lawrence Berkeley National Laboratory

LEO HOURVITZ
Pixar

DOROTHY SIMPSON KRAUSE
Massachusetts College of Art

BILL KROYER
Warner Brothers Feature Animation

BARBARA MONES-HATTAL
George Mason University

MARY WHITTON
University of North Carolina at Chapel Hill

Wednesday
7 August

Wednesday
8:15 am to 9:45 am

Keynote Address/Award
Room E2/E3

SIGGRAPH 96 keynote speaker Douglas Adams reviews the future of the galaxy, followed by presentation of this year's Computer Graphics Achievement Award to Marc Levoy.

Wednesday
10:15 am to noon

PAPERS

Image-Based Modeling & Rendering
Ballroom II C

Chair
FRANCOIS SILLION
iMAGIS/CNRS

Modeling and Rendering Architecture from Photographs: A Hybrid Geometry- and Image-Based Approach
PAUL E. DEBEVEC
CAMILLO J. TAYLOR
JITENDRA MALIK
University of California at Berkeley

View Morphing: Synthesizing 3D Metamorphoses Using Image Transforms
STEVEN M. SEITZ
CHARLES R. DYER
University of Wisconsin-Madison

Light Field Rendering
MARC LEVOY
PAT HANRAHAN
Stanford University

The Lumigraph
STEVEN J. GORTLER
RADEK GRZESZCZUK
RICHARD SZELISKI
MICHAEL F. COHEN
Microsoft Research

Wednesday
10:15 am to noon

PANEL

The Future of Virtual Reality: Head-Mounted Displays Versus Spatially Immersive Displays
Room E2/E3

The head-mounted display (HMD) is the de facto display device for "true" virtual reality (VR) systems. However, walk-in spatially immersive displays (SIDs) such as CAVE and domed projection environments promise to challenge the HMD's role in VR display. This panel compares the ultimate utility of HMDs and SIDs in various VR applications. Issues include user mobility, single- and multi-user interactivity, stereoscopic viewing, applicability to augmented reality, visual quality, viewer fatigue, and sense of presence.

Organizer
ED LANTZ *Spitz, Inc.*

Panelists
DAVID BENNETT *Alternate Realities Corporation*
BERTRAND De La CHAPELLE *VIRTOOLS*
DAVID ZELTZER *MIT Research Lab of Electronics*
STEVE T. BRYSON *NASA Ames Research Center*
MARK T. BOLAS *Fakespace*

Wednesday
10:15 am to noon

PANEL

Roundtable: Art on the Web, the Web as Art
Ballroom II A/B

Web-specific artwork and art sites on the Web are fostering a seamless environment in which the boundary between the artwork itself and the "space" it inhabits is vanishing. The Web offers the promise of a direct and intimate connection between artist and audience, and requires a shift in aesthetics and approaches to storytelling, narrative, and interaction. This panel explores the interface of art and art space, and the dynamic qualities of art created for the Web.

Organizer
ANNETTE WEINTRAUB *City College of New York*

Panelists
REMO CAMPOPIANO *Virtual Real Estate, Inc.*
NAN GOGGIN *University of Illinois, Urbana-Champaign*
JOHN SIMON *adaweb*
SHARLEEN SMITH *USA Networks*

Wednesday
7 August

Wednesday
1:30 pm to 3:15 pm — PAPERS

Hierarchical Rendering Techniques
Ballroom II C

Chair
FREDERICK P. BROOKS, JR. *University of North Carolina at Chapel Hill*

The Feudal Priority Algorithm on Hidden-Surface Removal
HAN-MING CHEN WEN-TENG WANG *National Taiwan University*

Hierarchical Polygon Tiling with Coverage Masks
NED GREENE *Apple Computer, Inc.*

Hierarchical Image Caching for Accelerated Walkthroughs of Complex Environments
JONATHAN SHADE DANI LISCHINSKI DAVID H. SALESIN
TONY DEROSE *University of Washington* JOHN SNYDER *Microsoft Research*

Hierarchical View-Dependent Structures for Interactive Scene Manipulation
NORMAND BRIÈRE PIERRE POULIN *Université de Montréal*

Wednesday
1:30 pm to 3:15 pm — PANEL

VRML: Prelude and Future
Room E2/E3

As it enables interactive 3D graphics on the World Wide Web, the Virtual Reality Modeling Language (VRML) is triggering fundamental changes in accessibility, economics, mindset, and membership for the 3D graphics community. A panel of experts examines how this collaborative standards process works and where VRML is going next.

Organizer
DON BRUTZMAN *Naval Postgraduate School*

Panelists
MARK PESCE *Author* GAVIN BELL *Silicon Graphics, Inc.*
ANDRIES VAN DAM *Brown University* SALIM ABIEZZI *Microsoft Corporation*

Wednesday
1:30 pm to 3:15 pm — PANEL

Breaking the Myth: One Picture is NOT (Always) Worth a Thousand Words
Ballroom II A/B

We need to understand both the power and frailty of images to effectively use new visualization and computer graphics technologies, especially on the World Wide Web. The panel and audience discuss and debate the weakness of images, including the difficulty of using them to represent information clearly; the dependency of visual and information perception on past memories, experiences, beliefs, and culture; the difficulty of making effective use of color; and what could be learned from the art and design communities.

Organizer
NAHUM D. GERSHON *The MITRE Corporation*

Panelists
ROBERT BRAHAM *IEEE Spectrum* DAVID FRACCHIA *Simon Fraser University*
ANDREW GLASSNER *Microsoft Research*
BARBARA MONES-HATTAL *George Mason University*
RUSS ROSE *Information Sciences Research Group*

Wednesday
3:30 pm to 5:15 pm — PAPERS

Level of Detail
Ballroom II C

Chair
KURT FLEISCHER *Pixar*

Interactive Multi-Resolution Surface Viewing
ANDREW CERTAIN JOVAN POPOVIC TOM DUCHAMP
DAVID SALESIN WERNER STUETZLE *University of Washington*
TONY DEROSE *Pixar*

Progressive Meshes
HUGUES HOPPE *Microsoft Corporation*

Real-Time, Continuous Level of Detail Rendering of Height Fields
PETER LINDSTROM DAVID KOLLER WILLIAM RIBARSKY
LARRY F. HODGES NICK FAUST *Georgia Institute of Technology*
GREGORY TURNER *US Army Research Laboratory*

Simplification Envelopes
JONATHAN COHEN *University of North Carolina at Chapel Hill*
AMITABH VARSHNEY *State University of New York at Stony Brook*
DINESH MANOCHA GREG TURK HANS WEBER *University of North Carolina at Chapel Hill*
PANKAJ AGARWAL *Duke University*
FREDERICK P. BROOKS, JR. WILLIAM WRIGHT *University of North Carolina at Chapel Hill*

Wednesday
3:30 pm to 5:15 pm — PANEL

Digital Stunt Doubles: Safety Through Numbers
Room E2/E3

Logical precursors to computer-generated actors are digital stunt doubles, computer-generated human figures designed to stand in for human actors for visual effects that are either too dangerous, too expensive, or impractical to shoot with human doubles. In this panel, visual effects supervisors present and discuss their application of digital stunt doubles to feature film projects.

Organizer
JEFF KLEISER *Kleiser-Walczak Construction Company*

Panelists
RICHARD CHUANG *Pacific Data Images* JEFFREY B. LIGHT *Industrial Light & Magic*
FRANK VITZ *Kleiser-Walczak Construction Company*
SHAHRIL IBRAHIM *Boss Film Studios*

Wednesday
3:30 pm to 5:15 pm — PANEL

Global Multi-User Virtual Environments
Ballroom II A/B

Networking technology and virtual environment technology are ready to enable shared, distributed, cooperative activities. This panel addresses infrastructure, systems, and applications related to multi-user virtual environments, especially the global (intercontinental/international) aspects of these issues.

Organizer
WOLFGANG FELGER *Fraunhofer Institute for Computer Graphics*

Panelists
LENNART E. FAHLEN *Swedish Institute of Computer Science*
R. BOWEN LOFTIN *NASA Johnson Space Center and University of Houston*
MICHAEL R. MACEDONIA *Fraunhofer Center for Research in Computer Graphics, Inc.*
GURMINDER SINGH *National University of Singapore*

Thursday
8 August

Thursday
8:15 am to 10 am

PAPERS

Animation
Ballroom II C

Chair
JESSICA HODGINS *Georgia Institute of Technology*

Position-Based Physics:
Simulating the Motion of Many Highly Interacting Spheres and Polyhedra
VICTOR MILENKOVIC *University of Miami*

Linear-Time Simulation Using Lagrange Multipliers
DAVID BARAFF *Carnegie Mellon University*

Efficient Generation of Motion Transitions Using Spacetime Constraints
BRIAN GUENTER *Microsoft Research* CHARLES F. ROSE *Princeton University*
BOBBY BODENHEIMER MICHAEL F. COHEN *Microsoft Research*

Limit Cycle Control and its Application to the Animation of Balancing and Walking
JOSEPH F. LASZLO MICHIEL VAN DE PANNE EUGENE FIUME *University of Toronto*

Thursday
8:15 am to 10 am

PANEL

How Can SIGGRAPH Be More Effective in Promoting Computer Graphics?
Room E2/E3

How can or should SIGGRAPH foster a vigorous public policy agenda for computer graphics research, development, and applications? SIGGRAPH has the potential to affect all walks of life, industry, and academia by actively addressing certain public policy issues. The panel and the audience define and debate the potential agenda.

Organizer
NAHUM D. GERSHON *The MITRE Corporation*

Panelists
JOSE ENCARNAÇÃO *Fraunhofer Institute for Computer Graphics* BOB ELLIS
ALAIN CHESNAIS *Alias | Wavefront* DONALD P. GREENBERG *Cornell University*
BRAN FERREN *Walt Disney Imagineering*

Thursday
8:15 am to 10 am

PANEL

Webbed Spaces: Between Exhibition and Network
Ballroom II A/B

Webbed Spaces, a roundtable panel discussion, brings together artists, curators, and theorists, each of them actively engaged with the Internet in their own practice. They discuss works that emphasize public installation and multi-user approaches, and use these works as points of departure to begin a critical discussion of the Internet and its implications for artmaking, representation, and interactivity.

Co-Organizers
PERRY HOBERMAN *Telepresence Research*
VICTORIA VESNA *University of California, Santa Barbara*

Panelists
LORNE FALK *Consultant* KEN FEINGOLD *School of Visual Arts*
LAURA KURGAN *University of Pennsylvania* STELARC *Performance Artist*

Thursday
10:15 am to noon

PAPERS

Geometry
Ballroom II C

Chair
JULES BLOOMENTHAL *Microsoft Corporation*

SKETCH: An Interface for Sketching 3D Scenes
ROBERT C. ZELEZNIK KENNETH P. HERNDON JOHN F. HUGHES
Brown University

OBB-Tree: A Hierarchical Structure for Rapid Interference Detection
STEFAN GOTTSCHALK DINESH MANOCHA *University of North Carolina at Chapel Hill*
MING LIN *University of North Carolina at Chapel Hill, US Army Research Office*

Free-Form Deformations with Lattices of Arbitrary Topology
RON MacCRACKEN KENNETH I. JOY *University of California, Davis*

Interpolating Subdivision for Meshes with Arbitrary Topology
DENIS ZORIN PETER SCHRÖDER *California Institute of Technology*
WIM SWELDENS *AT&T Bell Laboratories*

Thursday
10:15 am to noon

PANEL

Advanced Television for the United States: Status and Issues
Room E2/E3

An advisory commission on advanced television service (ACATS), appointed by the FCC, is recommending deployment of a new television system that includes interlace, 59.94 and 60 Hz, and non-square pixel spacing. These parameters are fundamentally incompatible with modern computer graphics displays, which do not use interlace, and which operate at display rates exceeding 70 Hz. The panel discusses and debates these issues.

Organizer
GARY DEMOS *DemoGraFX*

Panelists
ALVY RAY SMITH *Microsoft Corporation*
CRAIG BIRKMAIER *Pcube Labs*
GLEN REITMEIER *Sarnoff Labs*
MARK RICHER *Advanced Television Systems Committee*

Thursday
10:15 am to noon

PANEL

The Soul of the Machine: The Search for Spirituality in Cyberspace
Ballroom II A/B

In 1964, Marshall McLuhan prophesied a collective consciousness made possible by electronic technology. Thirty years later, through the Internet, virtual reality, and mass digitization, McLuhan's vision is being realized beyond even his wildest dreams. This panel brings together a diverse array of individuals actively involved in creating work that explores the spiritual impact and meaning of life in the digisphere.

Organizer
CELIA PEARCE *momentum media group*

Panelists
MARK PESCE *Author*
PAUL GODWIN *Gravity, Inc.*
CHAR DAVIES *Softimage*
RITA ADDISON *Artist*

Thursday
8 August

Thursday
1:30 pm to 3:15 pm

PAPERS

Storytelling
Ballroom II C

Chair
RICHARD PARENT *The Ohio State University*

Disney's Aladdin: First Steps Toward Storytelling in Virtual Reality
RANDY PAUSCH *University of Virginia*
JON SNODDY ERIC HASELTINE ROBERT TAYLOR SCOTT WATSON
Walt Disney Imagineering

IMPROV: A System for Scripting Interactive Actors in Virtual Worlds
KEN PERLIN ATHOMAS GOLDBERG *NYU Media Research Laboratory*

The Virtual Cinematographer:
A Paradigm for Automatic Real-Time Camera Control and Directing
LI-WEI HE MICHAEL F. COHEN *Microsoft Research*
DAVID H. SALESIN *University of Washington*

Comic Chat
DAVID KURLANDER TIM SKELLY *Microsoft Research*
DAVID H. SALESIN *University of Washington*

Thursday
1:30 pm to 3:15 pm

PANEL

Issues in Networking for Entertainment, Graphics, and Data
Room E2/E3

The next generation of networking combines the telecommunications and data communications industries. Experts discuss this phenomenon and other technologies and issues related to networking in the entertainment, graphics, and media fields. The discussion focuses on the technology behind integrated networking for film, video, and audio distribution, as well as generic computer networking.

Organizer
MARKE CLINGER *FORE Systems, Inc.*

Panelists
MARK VALENTI *Sextant Group*
CHUCK GARSHA *Paramount Pictures*
RAY FEENEY *RFX*
BOB AMEN *Cinesite*
JAMES D. McCABE *Full Spectrum Communications, LLC*

Thursday
3:30 pm to 5:15 pm

PAPERS

Reproduction/Postproduction
Ballroom II C

Chair
GARY MEYER *University of Oregon*

Reproducing Color Images as Duotones
JOANNA L. POWER BRAD S. WEST ERIC J. STOLLNITZ DAVID H. SALESIN
University of Washington

A Model of Visual Adaptation for Realistic Image Synthesis
JAMES A. FERWERDA SUMANT PATTANAIK PETER SHIRLEY DONALD P. GREENBERG
Cornell University

Blue Screen Matting
ALVY RAY SMITH JIM BLINN *Microsoft Corporation*

Combining Frequency and Spatial Domain Information for
Fast Interactive Image Noise Removal
ANIL N. HIRANI TAKASHI TOTSUKA *Sony Corporation*

Thursday
3:30 pm to 5:15 pm

PANEL

Graphics PCs Will Put Workstation Graphics in the Smithsonian
Room E2/E3

Graphics accelerators for personal computers are rapidly becoming cheaper and more powerful. The panelists consider whether this development spells the end of graphics workstations as we have known them.

Organizer
SAMUEL P. USELTON *MRJ, Inc./NASA Ames Research Center*

Panelists
MICHAEL COX *S3, Inc.*
MICHAEL DEERING *Sun Microsystems Computer Company*
JAY TORBORG *Microsoft Corporation*
KURT AKELEY *Silicon Graphics, Inc.*

Thursday
3:30 pm to 5:15 pm

PANEL

Cognition, Perception, and Experience in the Virtual Environment: Do You See What I See?
Ballroom II A/B

Panelists compare and contrast cognitive, perceptual, and experiential modes of learning as they relate to immersive, interactive, real-time simulations. They also formulate an approach for applying these modes to design of useful virtual environments. This panel intends to establish a precedent: panelists and the audience will launch an effort within the SIGGRAPH community to establish a much-needed stylistic guide to designing, building, and displaying virtual environments.

Organizer
LINDA JACOBSON *Silicon Graphics, Inc.*

Panelists
CREVE MAPLES *MUSE Technologies*
BRENDA LAUREL *Interval Research*
MARK PESCE *Author*
CHAR DAVIES *Softimage*
ROB TOW *Interval Research*
MARK SCHLAGER *SRI International*

Friday
9 August

Friday
8:15 am to 10 am

PAPERS

Samples & Textures
Ballroom II C

Chair
A. ROBIN FORREST *University of East Anglia*

Consequences of Stratified Sampling in Graphics
DON P. MITCHELL *Microsoft Corporation*

Multiresolution Video
ADAM FINKELSTEIN CHARLES E. JACOBS DAVID H. SALESIN
University of Washington

A Cellular Texturing Basis Function
STEVEN P. WORLEY *Worley Laboratories*

A Framework for Interactive Texturing Operations on Curved Surfaces
HANS KØHLING PEDERSEN *Stanford University*

Friday
8:15 am to 10 am

PANEL

Virtual Reality and Mental Disorders
Room E2/E3

Computer-augmented perception and the sense of presence in a controlled virtual environment can help treat mental disorders that are awkward, dangerous, or impossible to treat in the real world. This panel focuses on technical, psychological, and ethical issues related to such treatment.

Organizer
DOROTHY STRICKLAND *North Carolina State University*

Panelists
LARRY HODGES *Georgia Institute of Technology*
NAT DURLACH *Massachusetts Institute of Technology*
LEESE MOTHERWELL *Harvard Medical School*
SUZANNE WEGHORST *University of Washington*

Friday
10:15 am to noon

PAPERS

Surface Reconstruction
Ballroom II C

Chair
HANS-PETER SEIDEL *Universität Erlangen*

A Volumetric Method for Building Complex Models from Range Images
BRIAN CURLESS MARC LEVOY *Stanford University*

Fitting Smooth Surfaces to Dense Polygon Meshes
VENKAT KRISHNAMURTHY MARC LEVOY *Stanford University*

Automatic Reconstruction of B-Spline Surfaces of Arbitrary Topological Type
MATTHIAS ECK *University of Darmstadt* HUGUES HOPPE *Microsoft Corporation*

Reconstructing Curved Surfaces From Specular Reflection Patterns Using Spline Surface Fitting of Normals
MARK HALSTEAD *Apple Computer, Inc. and University of California, Berkeley*
BRIAN BARSKY STANLEY KLEIN ROBERT MANDELL
University of California, Berkeley

Friday
10:15 am to noon

PAPERS

Architectures
Room E1

Chair
DAVE KIRK *Crystal Dynamics*

Coarse-Grained Parallelism for Hierarchical Radiosity Using Group Iterative Methods
THOMAS A. FUNKHOUSER *AT&T Bell Laboratories*

Talisman: Commodity Real-Time 3D Graphics for the PC
JAY TORBORG JIM KAJIYA *Microsoft Corporation*

VC-1: A Scalable Graphics Computer with Virtual Local Frame Buffers
SATOSHI NISHIMURA TOSIYASU L. KUNII *The University of Aizu*

Rendering from Compressed Textures
ANDREW C. BEERS MANEESH AGRAWALA NAVIN CHADDHA *Stanford University*

Friday
10:15 am to noon

PANEL

Building Compelling VRML Worlds
Ballroom II A/B

This panel explores and compares several different directions in large-scale sites that use VRML to show what 3D on the Web can offer: multimedia, responsive, changeable, and expandable worlds. Being "large-scale" is not necessarily correlated with the heft of the files. A better goal is a balance between ideas, visual design, and navigability. With this balance in mind, each panelist explores one of several domains: formation of a vocabulary for "virtual architecture," reconstruction of a lost archaeological site, exploration of hybrid narrative and creation of a "procedural cinema," and creation of a VRML-based Web site business. Panelists present the ideas behind their work and address issues they all have in common: how one weaves motion, lighting, architecture, sound, history, navigation, and narrative into a fabric of interactive experience.

Organizer
DELLE MAXWELL *Independent Designer*

Panelists
CLAY GRAHAM *Silicon Graphics, Inc.*
DAVID BLAIR *Electronic Cinemamaker*
JAMES WALDROP *Construct*

Friday
9 August

Friday
noon to 1:30 pm

SPECIAL SESSION

Springing into the Fifth Decade of Computer Graphics: Where We've Been and Where We're Going

Room E2/E3

"Mover-and-shaker" computer graphics pioneers from academia and industry share their recollections and anecdotes about where the discipline has been over the past four decades and where it's going. Here's your chance to find out what really happened from some of those who made it happen.

Organizer
CARL MACHOVER *Machover Associates Corporation*

Panelists
FREDERICK P. BROOKS, JR. *University of North Carolina at Chapel Hill*
EDWIN E. CATMULL *Pixar*
SYLVAN CHASEN
ROBERT M. DUNN *Enterprise Solutions International*
BERTRAM HERZOG *University of Michigan*
ANDRIES VAN DAM *Brown University*

Friday
1:30 pm to 3:15 pm

PAPERS

Natural Phenomena

Ballroom II C

Chair
GREG WARD *Lawrence Berkeley National Laboratory*

Display of Clouds and Snow Taking into Account Multiple Anisotropic Scattering and Sky Light
TOMOYUKI NISHITA *Fukuyama University*
EIHACHIRO NAKAMAE *Hiroshima Prefectural University*
YOSHINORI DOBASHI *Hiroshima University*

Modeling and Rendering of Metallic Patinas
JULIE DORSEY *Massachusetts Institute of Technology*
PAT HANRAHAN *Stanford University*

Visual Models of Plants Interacting with Their Environment
RADOMÍR MECH PRZEMYSLAW PRUSINKIEWICZ *University of Calgary*

Flow and Changes in Appearance
JULIE DORSEY *Massachusetts Institute of Technology*
HANS KØHLING PEDERSEN *Stanford University*
PAT HANRAHAN *Stanford University*

Friday
1:30 pm to 3:15 pm

PAPERS

Virtual Reality

Room E1

Chair
STEVEN FEINER *Columbia University*

Simulating Facial Surgery Using Finite Element Models
ROLF M. KOCH
MARKUS H. GROSS
DANIEL F. VON BÜREN
GEORGE FANKHAUSER
YOAV I.H. PARISH
FRIEDRICH R. CARLS
Swiss Federal Institute of Technology

Superior Augmented Reality Registration by Integrating Landmark Tracking and Magnetic Tracking
ANDREI STATE
GENTARO HIROTA
DAVID T. CHEN
BILL GARRETT
MARK LIVINGSTON
University of North Carolina at Chapel Hill

Technologies for Augmented-Reality Systems: Realizing Ultrasound-Guided Needle Biopsies
ANDREI STATE
MARK A. LIVINGSTON
WILLIAM F. GARRETT
GENTARO HIROTA
MARY C. WHITTON
ETTA D. PISANO
HENRY FUCHS
University of North Carolina at Chapel Hill

Adding Force Feedback to Graphics Systems: Issues and Solutions
WILLIAM MARK
SCOTT RANDOLPH
MARK FINCH
JAMES VAN VERTH
RUSSELL M. TAYLOR II
University of North Carolina at Chapel Hill

Friday
1:30 pm to 3:15 pm

PANEL

Live Computer Animation

Ballroom II A/B

General-purpose graphics workstations typically used for computer-aided design, scientific computation, visual simulation, and film special effects have become highly sophisticated. They are able to generate high-quality, real-time computer animation for live creation of graphics and effects for television broadcast, a field typically dominated by special-purpose video processing hardware. And they are beginning to appear in a variety of innovative applications. The panel presents some of those innovative applications, reviews the advantages and difficulties of using general-purpose computers for television, discusses technical and business issues related to these applications, and speculates about future directions.

Organizer
TIM HEIDMANN *Shoreline Studios, Inc.*

Moderator
GREG ESTES *Silicon Graphics, Inc.*

Panelists
KEN FUHRMAN *Evolving Video Technologies*
TIM HEIDMANN *Shoreline Studios, Inc.*
CHUCK MOLYNEAUX *Silicon Graphics, Inc.*

Friday
3:30 pm to 5:15 pm

PAPERS

Illustration

Ballroom II A/B

Chair
R. VICTOR KLASSEN *Xerox Corporation*

Image-Guided Streamline Placement
GREG TURK *University of North Carolina at Chapel Hill*
DAVID BANKS *Mississippi State University*

A Resolution-Independent Representation for Pen-and-Ink Illustrations
MIKE SALISBURY CORIN ANDERSON DANI LISCHINSKI DAVID H. SALESIN
University of Washington

Rendering Free-Form Surfaces in Pen and Ink
GEORGES WINKENBACH DAVID H. SALESIN
University of Washington

Painterly Rendering for Animation
BARBARA J. MEIER *Walt Disney Feature Animation*

Friday
3:30 pm to 5:15 pm

PANEL

Imaging Features in Advanced Computer Graphics Architectures

Room E2/E3

Something new is happening in computer graphics. In addition to traditional polygonal rendering, the latest commercial graphics systems now incorporate 2D imaging and 3D volumetric capabilities. Why? This panel presents the different approaches used in commercially available systems and concludes with a discussion of which applications will be enabled by these capabilities.

Organizer
BOB MURPHY *Silicon Graphics, Inc.*

Moderator
HENRY FUCHS *University of North Carolina at Chapel Hill*

Panelists
RANDY CRANE *Hewlett-Packard Company*
KURT AKELEY *Silicon Graphics, Inc.*
STEVE HOWELL *Sun Microsystems Computer Company*
ARIE KAUFMAN *State University of New York at Stony Brook*

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Theory-into-practice presentations that illustrate how computer graphics theory generates everyday, real-world solutions.

Hall C

Tuesday – Thursday
10 am to 5 pm

Chair
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Committee
MICHAEL J. BAILEY
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MARC L. KESSLER
The University of Michigan Medical School

CHUCK HANSEN
Los Alamos National Laboratory

ALAN D. CHRISTIANSEN
Tulane University

BILL MALONEY
Imagine Multimedia

Tuesday
6 August

Tuesday
10 am

If All the World's a Stage: The Impact of Global Illumination on the Entertainment and Architectural Lighting Art
A demonstration of the practical benefits of integrating still and interactive photo-accurate images into the entertainment and architectural lighting design process.

ROBERT SHAKESPEARE
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Tuesday
10:40 am

A Flock of Words: Real Time Animation and Video Controlled by Algorithmic Music Analysis
A composition that combines large-scale holograms, video projection, animation, robotic lighting effects, and computer music.

ERIC SINGER
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DORIS VILA
vila@dorsai.org

Tuesday
11:20 am

Life Forms: An Application of Computer Graphics to Support Dance Choreography
An application of computer graphics techniques to dance choreography, with a focus on how choreographers are using it for visualizing conceptual ideas for movement composition before applying them to studio work.

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Tuesday
1 pm

SCIRun: Applying Interactive Computer Graphics to Scientific Problems
Graphical user interfaces, high-performance graphics hardware, 3D interaction, scientific visualization, and advanced rendering methods applied to problems in computational medicine and computational fluid dynamics.

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Tuesday
6 August

Tuesday
1:40 pm

Clinical Application of Computer Graphics for Design and Delivery of Conformal Radiation Therapy
Visualization techniques that exploit 3D computer graphics and medical image data to help design and deliver conformal radiation therapy treatments.

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Tuesday
2:20 pm

Computer Applications of the Visible Human Dataset
Some of the current and more practical computer-based applications of the U.S. National Library of Medicine's Visible Human Dataset.

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KARL REINIG
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Tuesday
3 pm

Terminator 2–3D
Production of a new theme park attraction composed of live actors, physical stage elements, and three 50-foot wraparound screens displaying a completely rendered 3D world.

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Tuesday
3:40 pm

FlyThru The Boeing 777
An application developed to meet the need for greater analysis context has expanded to include a system for distributing CAD data and finding data of interest to groups of users.

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ERIC BRECHNER
Microsoft Corporation

Tuesday
4:20 pm

Animations from NASA's Exploration of Outer Space: Use of Computer Graphics with Satellite Data
Various methods for displaying and animating remotely sensed data, putting the data into a context that is intuitive and useful to the viewer, and using computer graphics techniques to display data in a form that can convey more meaning, not only to the general public but also to the scientific community.

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Wednesday
7 August

Wednesday
10 am

AAPE: Advanced 3D Acquisition, Analysis, Presentation, and Exchange Addressing Biological Complexity
A new facility for integrating musculo-skeletal mechanics and locomotory control of animals (insects) using three-dimensional reconstruction and dynamic simulation.

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Wednesday
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Virtual Neandertals
Creation of a series of new, photo-realistic images of a Neandertal "family."

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Wednesday
11:20 am

Computer Applications of the Visible Human Dataset
See Tuesday, 2:20 pm

Wednesday
1 pm

Terminator 2–3D
See Tuesday, 3 pm

Wednesday
1:40 pm

Real-Time Responsive Synthetic Dancers and Musicians
A virtual band is conducted by a person playing an electronic drum while a virtual actor "listens" and "dances" along, altering his dance style based on attributes of the music.

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+1.212.998.4122 fax
esinger@graphics.nyu.edu

Wednesday
2:20 pm

MaxHeadRoom of the 21st Century: Producing Realistic Talking Head Animations Using the Actors System
A system that swiftly produces startlingly realistic animations of a person speaking.

KENNETH C. SCOTT
Jet Propulsion Laboratory
California Institute of Technology
4800 Oak Grove Drive MS 168-414
Pasadena, California 91109 USA
+1.818.354.8482
+1.818.393.6962 fax
Ken.Scott@jpl.nasa.gov

Wednesday
3 pm

Distributed Scientific Visualization of Ocean Models
Several advanced visualizations, including 2D animations of El Niño propagation, the spreading of radionuclide pollution, and 3D animations of an interactive circulation model running on a remote supercomputer.

DANIEL N. FOX
Naval Research Lab NRL Code 7323
Stennis Space Center, Mississippi
39529 USA
+1.601.688.5588
fox@nrlssc.navy.mil
http://www.erc.msstate.edu/thrusts/scivi/html/SC95.html

Wednesday
3:40 pm

Data Visualization of Geophysical and Oceanographic Data at the Naval Oceanograpic Office
Oceanographic data visualization that integrates GIS systems and in-house tools for 2D and 3D data analysis and display.

STEVEN LINGSCH
Naval Oceanographics Office
1002 Balch Boulevard / N533
Stennis Space Center, Mississippi
39522-5001 USA
+1.601.688.5313
lingsch@msrcnavo.navy.mil

Wednesday
4:20 pm

Interactive Visualization for Operational High-Resolution Weather Forecasting at the 1996 Centennial Olympic Games
Improved weather forecasting using a high-resolution regional weather satellite over four main Olympic venues.

LLOYD A. TREINISH
ZAPHIRIS D. CHRISTIDIS
IBM T.J. Watson Research Center
P.O. Box 704
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10598 USA
+1.914.784.5038
+1.914.784.5130 fax
lloydt@watson.ibm.com
zaphiri@watson.ibm.com

Thursday
8 August

Thursday
10 am

Digital Architecture: From Digital Images to Virtual Walkthrough and Automated Model-Making
Advanced techniques for recording architectural information, planning alterations, and visualizing changes.

P. BOULANGER
G. GODIN
National Research Council of Canada
Visual Information Technology Laboratory, Building M-50
Ottawa, Ontario K1A 0R6 CANADA
+1.613.993.1426
+1.613.952.0215 fax
Boulanger@iit.nrc.ca

F. PELLETIER
Digital Simulation Laboratory
Real Property Services
Public Works & Government Services of Canada
Sir Charles Tupper Building
Riverside Drive
Ottawa, Ontario CANADA
+1.819.775.7080
+1.819.775.7004 fax
pelletif@pwgsc.gc.ca

Thursday
10:40 am

Simulation of Human Flow in Architectural Spaces with Particle Systems
Crowd simulation software that computes the movement of tens of thousands of individuals interacting in real time.

EYAL COHEN
ERIC BOUVIER
ArSciMed
207, rue de Bercy
75012 Paris, FRANCE
+33.1.44.68.87.87
+33.1.44.73.90.50 fax

Thursday
11:20 am

Animation and Imaging for Litigation Support
The animation process used to produce animation and imaging for courtroom presentation, from the discovery phase, story boarding, and 3D model building, to applying textures and scripting.

DENNIS M. BREWER
Expert Computer Graphics Inc.
P.O. Box 9064
Mandeville, Louisiana 70470 USA
+1.504.674.2612
104124.1265@compuserve.com

CHARLTON B. OGDEN III
Monroe & Lemann, Law Offices
201 St. Charles Avenue, 33rd Floor
New Orleans, Louisiana 70170 USA
+1.504.544.7237

Thursday
1 pm

Creating an Interactive Catalog for an Art College
An interactive catalog of visual information that allows remote users to explore campus facilities from their homes and meet faculty, staff, and students.

LUKE WANDER
STEVE LAVIETES
Savannah College of Art & Design
201 West Charlton Street
Savannah, Georgia 31401 USA
+1.912.239.1436
luke@scad.edu

Thursday
1:40 pm

FreeWalk: Supporting Casual Meetings in a Network
A desktop meeting environment that supports informal communication generated by accidental encounters in a 3D virtual passageway.

HIDEYUKI NAKANISHI
CHIKARA YOSHIDA
TOSHIKAZU NISHIMURA
TORU ISHIDA
Department of Information Science
Kyoto University
Kyoto, 606-01, JAPAN
+81.75.753.4821
+81.75.753.4820 fax
ishida@kuis.kyoto-u.ac.jp

Thursday
2:20 pm

The Remembering: An Interactive CDPlus Application
An enhanced music CD that combines high-resolution interactive 2D and 3D graphics to take the viewer back into the archetypal memories of childhood.

JAN BOZARTH
Blue Arrow Words, Music & Images
14224 Hunters Pass
Austin, Texas 78734 USA
+1.512.266.7440
+1.512.266.7449 fax
jbozarth@bluearrow.com

Thursday
3 pm

Visualization of Earth and Space Science Data at JPL's Science Data Processing Section
An overview of systems currently used to process, manipulate, and display remotely sensed imagery acquired by earth observations and planetary exploration spacecraft.

WILLIAM B. GREEN
Jet Propulsion Laboratory
California Institute of Technology
4800 Oak Grove Drive,
Mailstop 168-527
Pasadena, California 91109 USA
+1.818.354.3031
Bill_Green@iplmail.jpl.nasa.gov

Thursday
3:40 pm

FlyThru The Boeing 777
See Tuesday, 3:40 pm

Thursday
4:20 pm

Animations from NASA's Exploration of Outer Space: Use of Computer Graphics with Satellite Data
See Tuesday, 4:20 pm

ANIMATOR SKETCHES

Useful new techniques, obscure and/or unfinished works, out-takes and bloopers, and tales of the production process. In Animator Sketches, the creators discuss their works in small, informal presentations designed to maximize interaction between the presenter and the audience.

Room 59

Wednesday – Thursday
10:15 am to 5:15 pm

ARTIST/DESIGNER SKETCHES

Artist/Designer Sketches illuminate the non-obvious aspects of artworks and provide a forum to share creative ideas and works in progress.

Room 60

Friday
10:15 am to 3:30 pm

Animator and Artist/Designer Sketches Chair
KEN MUSGRAVE
Bethesda Softworks

Animator Sketches Committee
DAVID BARAFF
Carnegie Mellon University

NED GREENE
Apple Computer, Inc.

Artist/Designer Sketches Committee
BARBARA MONES-HATTAL
Pacific Data Images, Inc.

LYNN POCOCK
Pratt Institute

Wednesday
7 August

Animator Sketches
TALES OF PRODUCTION

Wednesday
10:15 am to noon

THE ILMAJAM PROJECT
ILM artists created these personal pieces after hours.

MARJOLAINE TREMBLAY
SIMON CHEUNG
Industrial Light & Magic
P.O. Box 2459
San Rafael, California 94912 USA
marjo@kerner.com

Cosmic Voyage: Scientific Visualizations for IMAX Film
Computing, simulating, and visualizing the relative size of things, from galactic clusters to quarks.

DONNA J. COX
National Center for Supercomputing Applications
University of Illinois at Urbana-Champaign
cox@ncsa.uluc.edu

Terminator 2–3D
A Terminator 2–3D "how-to", including creation of the T-1,000,000 creature, an eight-legged, liquid-metal killing machine that protects Skynet.

BOB HOFFMAN
Digital Domain
bhoffman@d2.com

The Aerial Dogfight Sequences of "Independence Day"
The complexity of creating the "Independence Day" aerial dogfight sequences, incorporating the detail and action that director Roland Emmerich envisioned, required new animation techiques, including specialized intelligent flocking algorithms and importation and translation of a variety of motion-control and tracking data.

TRICIA ASHFORD
lmais@primenet.com

TARA TURNER

Animator Sketches
HUMOR

Wednesday
3:30 pm to 5:15 pm

Telling a Story with Automated Motion Synthesis
Inputs for automatic generation of character motion.

JON CHRISTENSEN
JOE MARKS
Department of Electrical and Computer Engineering
University of California, San Diego
3050 Urey Hall Addition
9500 Gilman Drive
La Jolla, California 92093 USA
+1.619.642.0343
+1.619.534.7654 fax
jmc@ece.ucsd.edu
http://sdchemw1.ucsd.edu/~jmc.

PMS: A Shared Story
The story of a woman's feelings during premenstrual syndrome.

RITA IVANISSEVICH
414 East 77th Street 1A
New York, New York 10021 USA
+1.212.879.3218
rita@heaven.com

Homer^3: The Simpsons Halloween Special (Treehouse of Horrors VI)
Production of the 3D segment that frightened Homer and delighted the computer graphics community.

JUDY CONNER
KEN BIELENBERG
Senior Animator
Pacific Data Images
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Palo Alto, California 94306 USA
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+1.415.846.8103 fax
ken@pdi.com

Thursday
8 August

Animator Sketches
ART

Thursday
10:15 am to noon

Using the Painting Process to Create Animation
Using the digital painting process to rapidly create expressive, painterly animation.

JEREMY SUTTON
Portrayals
245 Everett Avenue
Palo Alto, California 94301 USA
+1.415.325.3493
+1.415.325.3499 fax
jeremy@portrayals.com

Panopticon
The influence of time, space, perception, and experimental film on a graduate thesis animation.

KEVIN GEIGER
WEN HAW SEUM
7097 Alvern Street, D319
Los Angeles, California 90045 USA
nutball@cinenet.net

i used to dream
Subconscious thoughts, mixed messages, and ambiguity in 13 short dreams.

STEWART McSHERRY
Silicon Graphics, Inc.
mcsherry@sgi.com
http://www.sgi.com/employees/mcsherry

Animator Sketches
TECHNICAL

Thursday
3:30 pm to 5:15 pm

SoRender: A Graphical Interface from Softimage 3D to the RenderMan Standard
A graphical interface that seamlessly integrates Softimage 3D and RenderMan.

DAVID WALVOORD
Texas A&M Visualization Laboratory
416F Langford C
Texas A&M University
College Station, Texas 77843 USA
+1.409.845.3465
+1.409.845.4491 fax
davew@viz.tamu.edu

The Making of the Butterfly Shot for "The Craft"
A flock of thousands of butterflies created entirely on a PC using 3D Studio R4 and rendered in the 16 bits/pixel color depth aspect.

DAVID SCHAUB
Sony Pictures Imageworks
10202 West Washington Boulevard
Culver City, California 90232 USA
+1.310.280.7603
+1.310.280.4397 fax

The Arrival
Computer-generated aliens rendered with life-like, organic detail.

JUDY CONNER
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3101 Park Boulevard
Palo Alto, California 94306 USA
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+1.415.846.8103 fax
jconner@pdi.com

Partnering 3D CGI and Photography to Create Visual Effects for "Independence Day"
Cinematic principles using photographic imagery and 3D CGI were utilized to create composite elements and animations with superior image quality within the given production schedule parameters.

Tricia Ashford
lmais@primenet.com

Joe Francis

Friday
9 August

Artist/Designer Sketches
TECHNOLOGY IN ART

Friday
10:15 am to noon

Gallery Guide
A performer wears a head-mounted display linked to live video and hosts a tour of a virtual gallery.

KEVIN ATHERTON
Chelsea College of Art & Design
kevin@chel-vr.demon.co.uk

ParkBench Public-Access Kiosks
Reaching out to those who lack the prerequisites for getting online.

NINA SOBELL
EMILY HARTZELL
Artists in Residence
NYU Center for Digital Multimedia
719 Broadway, 12th Floor
New York, New York 10003 USA
+1.212.998.3395
parkbnch@large.cs.nyu.edu
http://c4dm.nyu.edu/parkbench

Telematic and Telepresence Installations
Installations comprised of a wireless telerobot, regular phone lines, and remote spaces, in which viewers become participants.

EDUARDO KAC
Department of Art
207 Fine Arts Building
University of Kentucky
Lexington, Kentucky 40506 USA
+1.606.257.2727
+1.606.257.3042 fax
ekac1@pop.uky.edu
http://www.uky.edu/FineArts/Art/kac/kachome.html

VOID: Performance
New technology and interaction fundamentally change the meanings of "performance" and "audience." Where is the experience of art when we meet the robot performer in its own environment?

ELIZABETH SWIFT
PETER IRELAND
A Room for Robots
liz@voidp.demon.co.uk

Artist/Designer Sketches
ARTWORKS DISCUSSED

Friday
1:45 pm to 3:30 pm

Illusions/delusions
Stereoscopic computer imaging procedures to construct artworks that explore the viewer's relationship to virtual/pictorial space.

TIM O'RILEY
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Manresa Road
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UNITED KINGDOM
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+44.171.514.7777 fax
tim@chel-vr.demon.co.uk

SPACE|R A C E
An interactive multimedia piece about the 1960s U.S. Civil Rights movement and space program that encourages viewers to experience paradox and ambiguity as natural parts of human existence in a complex world.

COLETTE GAITER
Minneapolis College of Art and Design
2501 Stevens Avenue South
Minneapolis, Minnesota 55404 USA
+1.612.874.3608
+1.612.874.3704 fax
colette_gaiter@mn.mcad.edu

Dance of Death
The conjunction of digital technology and the artist's book in interface design for a CD-ROM.

PETER E. CHARUK
University of Western Sydney, Nepean
p.charuck@nepean.uws.edu.au

Without a Special Object of Worship
The making of an experimental interactive installation that explores Veneto-Byzantine architecture using an artist's book as the vehicle for interaction.

JACQUELYN MARTINO
Philips Research Labs
345 Scarborough Road
Briarcliff, New York 10510 USA
jam67@columbia.edu

Technical Sketches

Presentations of late-breaking results, fresh ideas, useful insights, and papers from selected graphics journals. Technical Sketches are smaller, less formal gatherings that delve more deeply into the types of technical issues addressed by SIGGRAPH 96 Papers.

Rooms 58–60

Wednesday
10:15 am to 5:15 pm

Thursday and Friday
8:15 am to 5:15 pm

Chair
KEN MUSGRAVE
Bethesda Softworks

Committee
JIM ARVO
California Institute of Technology

LOREN CARPENTER
Pixar

ANDREW GLASSNER
Microsoft Research

DAVID H. SALESIN
University of Washington

Wednesday
7 August

ILLUMINATION

Room 58

Wednesday
10:15 am to noon

Simulated Photographic Development of Synthetic Images
The Virtual Darkroom, a system that simulates the photographic processing of black and white prints on computer-generated images.

JOE GEIGEL
Pittsburgh Supercomputing Center
Pittsburgh, Pennsylvania 15213
USA
+1.412.268.3911
geigel@psc.edu

Random Caustics: Natural Textures and Wave Theory Revisited
A novel approach to modeling caustics using a wave description of the propagation of light.

JOS STAM
INRIA
Rocquencourt BP 105
78153 Le Chesnay Cedex,
FRANCE

Fast Soft Shadows
A new algorithm that employs texture mapping and accumulation buffer hardware to produce shadows resulting from area light sources, in near real time.

MICHAEL HERF
PAUL S. HECKBERT
Computer Science Department
Carnegie Mellon University
Pittsburgh, Pennsylvania15213
USA
herf+@cmu.edu
ph@cs.cmu.edu

IMAGE-BASED MODELING

Room 58

Wednesday
1:30 pm to 3:15 pm

Hi-Lo Stereo Fusion
A technique for creating and storing stereo displays with minimal increase in the computational resources required for single-image displays.

DENNIS R. PROFFITT
Department of Psychology
University of Virginia
Charlottesville, Virginia 22903
USA
drp@virginia.edu.

MARY KAISER
NASA Ames Research Center

Constructing 3D Object Models from Photographs
A method for automatically creating spline surface models from a small set of calibrated photographs.

STEVE SULLIVAN
JEAN PONCE
Beckman Institute
University of Illinois
sullivan@cs.uiuc.edu

IMAGE-BASED MODELING

continued

Wednesday
1:30 pm to 3:15 pm

Vision-Based Modeling for Production-Quality Integration of Photographic Imagery and 3D Graphics

Work in progress toward achieving automatic vision-based modeling that will live up to the demands of professional film production.

ALI AZARBAYEJANI
ALEX PENTLAND
MIT Media Laboratory
20 Ames Street
Cambridge, Massachusetts 02139
USA
ali@media.mit.edu

CHRIS PERRY
Rhythm & Hues Studios

Automatic Video Tracking by Probabilistic Propagation

A new algorithm that shows greatly improved tracking performance in clutter.

MICHAEL ISARD
ANDREW BLAKE
Robotics Research Group
University of Oxford, Parks Rd
Oxford OX13PJ,
UNITED KINGDOM
{misard,ab}@robots.ox.ac.uk

LEVEL OF DETAIL

Room 60

Wednesday
1:30 pm to 3:15 pm

Multi-Scale Viewing

A multi-scale viewing tool that creates understandable distortion patterns while including or extending the functionality of other detail in context-viewing tools.

M. SHEELAGH
T. CARPENDALE
DAVID J. COWPERTHWAITE
F. DAVID FRACCHIA
School of Computing Science
Simon Fraser University
Burnaby, British Columbia V5A 1S6
CANADA
carpenda@cs.sfu.ca

Effective Removal of Detail for a Multi-Resolution Viewer

A method for removing detail from a wavelet description, which is important for interactive viewing of multi-resolution models.

KARI PULLI
University of Washington

TONY DEROSE
Pixar

Finding the Target for Level of Detail Management

This evaluation shows that high frame-rate means are important, while standard deviation is only important at low means.

BENJAMIN WATSON
NEFF WALKER
BILL RIBARSKY
VICTORIA SPAULDING
AILEEN WORDEN
Graphics, Visualization & Usability Center
Georgia Institute of Technology
watsonb@cc.gatech.edu

VISUALIZATION

Room 58

Wednesday
3:30 pm to 5:15 pm

GhostSpace

An effective 3D data transmission system for remote collaborative CAD/CAM applications.

MIKIO NAGASAWA
DAISUKE NISHIOKA
MASATO TSUKAKOSHI
FUMIO NODA
Central Research Laboratory
Hitachi Ltd.
1-280 Higashi-Koigakubo
Kokubunji, Tokyo 185 JAPAN
+81.423.23.1007
m-nagasa@crl.hitachi.co.jp

PAVE: A Distributed Visualization Application to Support Environmental Decision Making

A flexible and distributed application to visualize multivariate gridded environmental datasets.

STEVE THORPE
North Carolina Supercomputing Center
3021 Cornwallis Road
Research Triangle Park,
North Carolina 27708 USA
+1.919.248.1161
thorpe@ncsc.org

Cogito: A System for Computer-Aided Visualization

A system that allows users to effectively find personally meaningful visualizations.

D.H. HEPTING
F.D. FRACCHIA
J.C. DILL
R.D. RUSSELL
Simon Fraser University
Burnaby, British Columbia
V5A 1S6 CANADA
{dhepting,fracchia,dill,rdr}@sfu.ca

Interacting with Virtual Gorillas: Investigating the Educational Use of Virtual Reality

A virtual gorilla environment for students in grades K-12.

DON ALLISON
BRIAN WILLS
LARRY F. HODGES
JEAN WINEMAN
Graphics, Visualization & Usability Center
Georgia Institute of Technology
don@cc.gatech.edu

Thursday
8 August

GEOMETRY
Room 58

Thursday
8:15 am to 10 am

D-NURBS for Physics-Based Shape Modeling
A prototype modeling environment based on D-NURBS that demonstrates the usefulness of D-NURBS in graphics and geometric modeling.

HONG QIN
Department of Computer and Information Science and Engineering
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+1.352.392.1220 fax
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Surface Simplification Inside a Tolerance Volume
A technique for simplifying a triangulated surface while respecting a set of given approximation error bounds.

ANDRÉ GUÉZIEC
IBM T.J. Watson Research Center
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Yorktown Heights, New York 10598 USA
gueziec@watson.ibm.com

Efficient Sampling of CSG Models
Conversion of CSG models into implicit functions defined by grids of point samples.

GEORGE SEALY
Department of Computer Science
University of Otago
Box 56
Dunedin, NEW ZEALAND
george@piglet.otago.ac.nz

HUMAN FIGURE ANIMATION
Room 58

Thursday
10:15 am to noon

Modeling of Expressive Movement of Musicians
A program that reads a MIDI-encoded drum score and renders a 3D animation of the drummer's performance in real time.

ADAM WOOD-GAINES
F. DAVID FRACCHIA
TOM CALVERT
School of Computing Science
Simon Fraser University
Burnaby, British Columbia
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woodgain@cs.sfu.ca

Efficient Dynamic Simulation and Control of Articulated Figures
An animation system for articulated figures based on efficient forward dynamics, fast collision response, and adaptive control.

EVANGELOS KOKKEVIS
DIMITRI METAXAS
NORMAN J. BADLER
Department of Computer and Information Science
University of Pennsylvania
Philadelphia, Pennsylvania 19104 USA
evagelo@graphics.cis.upenn.edu

MODELING AND RENDERING
Room 58

Thursday
1:30 pm to 3:15 pm

Stripe: A Software Tool For Efficient Triangle Strips
A software tool for constructing triangle strips from partially triangulated models.

FRANCINE EVANS
STEVEN SKIENA
AMITABH VARSHNEY
Department of Computer Science
SUNY
Stony Brook, New York 11794 USA
evans@cs.sunysb.edu

Fast and Flexible Polygonization of Height Fields
A simple algorithm for generating quality polygonal approximations of arbitrary height fields.

MICHAEL GARLAND
PAUL S. HECKBERT
School of Computer Science
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, Pennsylvania 15213 USA
garland@cs.cmu.edu

Fast Rendering of Subdivision Surfaces
A method for rendering Loop's subdivision surfaces that is fast, uses minimum memory, and is simple in structure.

KARI PULLI
University of Washington

MARK SEGAL
Silicon Graphics, Inc.

A Spatially and Temporally Coherent Object-Space Visibility Algorithm
A conservative algorithm that identifies a superset of visible polygons, exploits spatial and temporal coherence, and is easily parallelizable.

SATYAN COORG
SETH TELLER
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Massachusetts Institute of Technology
545 Tech Square
Cambridge, Massachusetts 02139 USA
+1.617.258.7885
+1.617.253.6652 fax
seth@graphics.lcs.mit.edu

GEOMETRY AND DYNAMICS
Room 58

Thursday
3:30 pm to 5:15 pm

The Average Window is Small
A mathematical model for the expected-time analysis of line-clipping algorithms. An improved variant of the Cohen-Sutherland clipping algorithm, QuickClip, is shown to be 2.43 times faster on the average.

FRANK DEVAI
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University of Ulster
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UNITED KINGDOM
+44.1504.37.5327
+44.1504.37.5470 fax
FL.Devai@ulster.ac.uk

Real-Time Collision Detection for Motion Simulation within Complex Environments
A method, based on bounding-volume trees, for collision detection for objects moving within complex environments.

MARTIN HELD
JAMES T. KLOSOWSKI
JOSEPH S.B. MITCHELL
SUNY
Stony Brook, New York 11794 USA
{held,jklosow,jsbm}@ams.sunysb.edu

Fast and Accurate Computation of Polyhedral Mass Properties
A very fast algorithm for computing polyhedra that tends to minimize numerical errors.

BRIAN MIRTICH
University of California, Berkeley
mirtich@cs.berkeley.edu

Marching Cubes in Cylindrical and Spherical Coordinates
An extension of a common iso-surface extraction algorithm to visualize data sampled in non-rectangular coordinate systems.

JEFF GOLDSMITH
Jet Propulsion Laboratory
jeff@tintin.jpl.nasa.gov

ART

Room 60

Thursday
3:30 pm to 5:15 pm

Implementing the Four Perspectives of Renaissance Painters

Implementation of linear, atmospheric, color, and planes of focus perspective for synthetic imagery.

Nadia al'Greimil
George Washington University
nadia@seas.gwu.edu

F. Kenton Musgrave
Bethesda Softworks
musgrave@seas.gwu.edu

Autographic Halftoning for Artist-Printmakers

A program that allows fine-art printmakers to incorporate their own graphic "handwriting" into the halftoning process.

NAREN BARFIELD
GEORGE WHALE
Camberwell College of Arts
London, UNITED KINGDOM

"Toon Shaders" for Simulating Cel Animation

Ongoing development of 3D computer graphics rendering software for use in synthesizing images that simulate the appearance of cel animation.

MICHAEL ARIAS
Softimage Special Projects
Microsoft Corporation
michael.arias@softimage.com

Traditional Cel Animation Look with 3D Renderers

A combination of rendering and image processing techniques that produce a cel animation look.

REV LEBAREDIAN
Warner Brothers Digital Studio
+1.213.665.8151
revl@netcom.com

Friday
9 August

MEDICAL

Room 58

Friday
8:15 am to 10 am

Modeling of Human Jaw Motion in Sliding Contact

A geometric approach to sliding motion modeling of complex objects at interactive speeds.

KAROL MYSZKOWSKI
OLEG G. OKUNEV
TOSIYASU L. KUNII
The University of Aizu
Aizu-Wakamatsu 965-80 JAPAN
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+81.242.37.2747 fax
c-myszk@u-aizu.ac.jp

A New Growing Algorithm to Determine the Topology of Serially Sectioned Objects

A new solution to the correspondence problem designed to overcome the difficulties of reconstructing invertebrate palaeontological specimens.

MALCOLM HERBERT
Department of Informatics
University of Wales
Lampeter, Dyfed SA48 7ED
Wales, UNITED KINGDOM
malc@lampeter.ac.uk

Creating Volume-Based Virtual Anatomy for Bioengineering Analysis

An anatomical modeling system, based on a finite-element framework, for creating realistic virtual anatomy for bioengineering and medical applications.

GORDON D. MALLINSON
DAVID BULLIVANT
PETER J. HUNTER
The University of Auckland
Private Bag 92019
Auckland, NEW ZEALAND
http://www.esc.auckland.ac.nz/Groups/Bioengineering

NATURAL PHENOMENA

Room 59

Friday
10:15 am to noon

Terrain Modeling with Semantic Features

A technique to model intrinsic physical features as transfinite constraints in scattered data interpolation.

THOMAS A. FOLEY
LANG S. YUN
Department of Computer Science and Engineering
Arizona State University
Tempe, Arizona 85287 USA
+1.602.921.8343
+1.602.239.3073 fax
yun@asu.edu

Controlling Fluid Animation

Embedded controllers are used as an interface between the animator and a general tool for calculating three-dimensional fluid flow.

NICK FOSTER
DIMITRI METAXAS
Center for Human Modeling and Simulation
University of Pennsylvania
Philadelphia, Pennsylvania 19104
USA
dnm@graphics.cis.upenn.edu

Interactive Modeling of Branching Structures

A rule-based modeling system that allows graphical interactive definition of botanical structures such as plants, including partial and global constraints and free-form deformations.

BERND LINTERMANN
Institute for Dialog and Operating Systems
University of Karlsruhe
76128 Karlsruhe, GERMANY

OLIVER DEUSSEN
Institute for Simulation and Graphics
University of Magdeburg
39016 Magdeburg, GERMANY

VIRTUAL REALITY

Room 58

Friday
10:15 am to noon

The Go-Go Interaction Technique for Direct Manipulation of VR

Using a growing-arm metaphor, this technique allows seamless direct manipulation of both close objects and those at a distance.

IVAN POUPYREV
MARK BILLINGHURST
SUZANNE WEGHORTS
TADAO ICHIKAWA
HIT Lab
University of Washington
Seattle, Washington 98195 USA
poup@hitl.washington.edu

A Networked Virtual Skiing System

Accurate motion simulation from signals produced by a ski training machine equipped with several sensors.

KOZO SATODA
NOBUTATSU NAKAMURA
AKIHISA KENMOCHI
KEIJI NEMOTO
Information Technology Research Laboratories
NEC
satoda@joke.cl.nec.co.kp

Distributed, Physically-Based VR with Tactile Feedback

Visual insight into theories of continuum mechanics.

THOMAS J. IMPELLUSO
University of California, San Diego
9500 Gilman Drive
La Jolla, California 92093 USA
+1.619.534.7231
impellus@ames.ucsd.edu

Distributed ALIVE

A shared virtual space among several computers that allows two or more people to interact visually with autonomous agents and each other.

KENNETH B. RUSSELL
BRUCE M. BLUMBERG
ALEX PENTLAND
PATTIE MAES
MIT Media Lab
{kbrussel, bruce, sandy, pattie}@media.mit.edu

INTERFACES

Room 58

Friday
1:30 pm to 3:15 pm

Physically-Based Modeling in Information Categorization

A new information categorization, visualization, and retrieval method.

JIM X. CHEN
Department of Computer Science
George Mason University
Fairfax, Virginia 22030 USA
+1.703.993.1720
jchen@cs.gmu.edu

Visualizing WWW Document Term Relations

Content-based visualizations of documents and keywords in 3D spaces.

RICHARD H. FOWLER
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WENDY A.L. FOWLER
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Edinburg, Texas 78539 USA
+1.210.381.3452
+1.210.384.5099 fax
fowler@panam.edu

WebToons: A Method for Organizing and Humanizing Web Documents

Imagemaps that use cartoons to summarize Web documents and link to corresponding text.

PAMELA P. WALATKA
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Moffett Field, California 94035 USA
walatka@nas.nasa.gov
http://www.nas.nasa.gov/NAS/TechReports/NASreports/NAS-96-002

MOTION CAPTURE

Room 58

Friday
3:30 pm to 5:15 pm

Visually Animated Characters

A system that uses self-calibrating wide-baseline stereo cameras to perform real-time (30Hz) visual motion capture.

ALEX AZARBAYEJANI
BRUCE BLUMBERG
ALEX PENTLAND
MIT Media Laboratory
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ali@media.mit.edu

Insight, inspiration, and intellectual exploration of how to teach and apply computer graphics at every educational level.

University Track
Room 2/4/6

K-12 Track
Room 10/12

Friday
8:30 am to 5:15 pm

Educators Program Chair
ROSALEE WOLFE
DePaul University

Co-Chair
MARC J. BARR
Middle Tennessee State University

Assistant
DAN KUSSWORM
Baxter Healthcare

University Track Organizer
SCOTT GRISSOM
University of Illinois-Springfield

K-12 Track Organizers
JUDY SACHTER
IBM Corporation

LAURA ANNE LONDON
Autodesk, Inc.

CD-ROM Production Editor
STEPHAN R. KEITH
Sterling Software

University Track

Session I

TEACHING COMPUTER GRAPHICS

8:30 am

Welcome

8:45 am

Interactive Teaching Modules for Computer Graphics
AVI C. NAIMAN
Hong Kong University of Science & Technology
Department of Computer Science
Clear Water Bay
Kowloon, HONG KONG

9:15 am

uisGL: A Teaching Tool
SCOTT GRISSOM
University of Illinois-Springfield
Computer Science Department
Springfield, Illinois 62794 USA

9:45 am

How to Teach Graphics Using X (And Live to Tell About It)
THEO PAVLIDIS
SUNY
Department of Computer Science
Stony Brook, New York 11794-4400
USA

10:15 am

Break

10:30 am

Identifying and Addressing Student Problems in Learning Computer Graphics
AMNON SHABO
MARK GUZDIAL
JOHN STASKO
Georgia Institute of Technology
College of Computing
GVU Center
Atlanta, Georgia 30332-0280 USA

Session II

DISTANCE LEARNING IN THE ARTS

11 am

Graphics Technologies in the Classroom
SURYA VANKA
UIUC
143 Art and Design Building
408 East Peabody Drive MC-590
Champaign, Illinois 61820 USA

11:30 am

Corcoran Online: A Unique, College-Level Distance Learning Experience
HARRY ST.OURS
The Corcoran School of Art
500 Seventeenth Street NW
Washington, D.C. 20006 USA

noon

Lunch

Session III

MULTIMEDIA APPLICATIONS IN SCIENCE AND ARCHITECTURE

1:30 pm

Utilizing CD-ROMs in Large Science Classes
PAUL F. RAMP
CAROLYN I. STAPLES
The University of Tennessee
The General Biology Program
301 Hesler Biology Building
Knoxville, Tennessee 37996 USA

2 pm

Multimedia Diversity at Clemson University
STEPHEN DAVID FLAGG
ROBERT JOSEPH KOSINSKI
Clemson University
Biology Program
330 Long Hall, Box 341902
Clemson, South Carolina
29634-1902 USA

2:30 pm

The Virtual Meiji Village
HITOSHI NAKATA
The Virtual Meiji Village Group
Kinjo Gakuin University
2-1723 Omori, Moriyama-Ku
Nahoya, 436 JAPAN

3 pm

Break

Session IV

DOES TECHNOLOGY FACILITATE ART?

3:15 pm

Software and Visual Sophistication: How Software Affects Student Performance
MARLA MAYERSON
Columbus State Community College
Graphic Communications Department
550 East Spring Street
Columbus, Ohio 43215 USA

3:45 pm

Development of a Basic 2D Design Course: A Comparison Between Traditional and Computer-Generated Methods
ROSALYN MUSKOVITZ
Grand Valley State University
Department of Art/Design
College Landing
Allendale, Michigan 49401 USA

K-12 Track

9 am

Welcome

9:15 am

Novel Uses of Graphics to Support Physics Lab Work in a Distance Learning Environment
RAYMOND RAVAGLIA
GARY OAS
Stanford University
Education Program for Gifted Youth
Ventura Hall
Stanford, California 94305 USA

9:45 am

Sneaking Analytic Geometry Right by Them Using 3D Graphics
MIKE BAILEY
University of California at San Diego
San Diego Supercomputer Center
P.O. Box 85608
San Diego, California 92186 USA

10:15 am

Break

10:30 am

ExploreNet: Constructionism in a Multimedia MUD
MIKE MOSHELL
University of Central Florida
Computer Science Department
Orlando, Florida 32816 USA

11 am

Image Manipulation in the K-12 Art Curriculum
SCOTT LANG
United Nations International School
24-50 FDR Drive
New York, New York 10010 USA

11:30 am

Preparing for the Age of the Image
TIM COMOLLI
South Burlington High School
550 Dorset Street
South Burlington, Vermont 05403 USA

noon

Lunch

1:30 pm

Kids and the WWW: A Metaview
IDIT HAREL
MaMaMedia
The Soho Building
110 Greene Street, #805
New York, New York 10012 USA

2 pm

World Wide Web: A Springboard to Student Involvement
KATHY MATHISON
First Colony Middle School
5422 Brook Bend
Sugar Land, Texas 77479 USA

2:30 pm

Teaching Students to Create WWW Pages in a Secondary School Curriculum
JODY GIROUX
The Allen-Stevenson School
132 East 78th Street
New York, New York 10021 USA

3 pm

Break

3:15 pm

The Use of Hypertext in Educational Settings
JANICE STUHLMAN
KIM FOSSEY
Louisiana State University
223 Peabody Hall
Baton Rouge, Lousiania 70803 USA

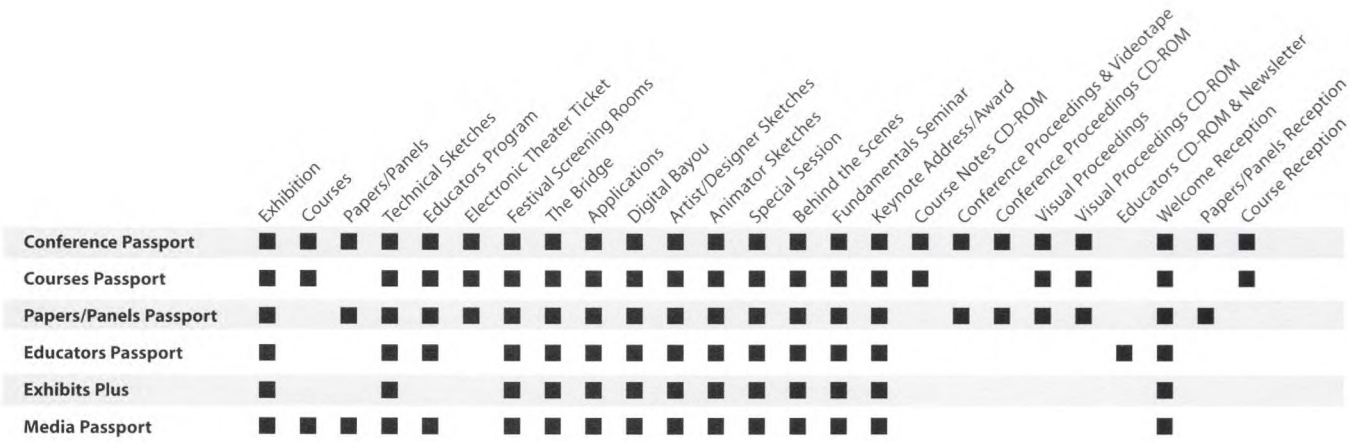
JOHN HUBBEL
Southern University

4:15 pm

The Digital Construction Zone: Turning Educational Fixer-Uppers into High-Rise Programs
WILL FOWLER
San Jose Middle School
1000 Sunset Parkway
Novato, California 94949 USA

ANTHONY HARRIS
Hill Middle School

Programs, events, and materials included with your registration



Member Discounts

You must include your current national ACM or SIGGRAPH membership numbers to receive member discounts. If you do not provide a valid membership number, you will be charged non-member rates. If you are a student, you must show a copy of your 1996 ACM student membership card or your valid student identification card. If you do not show your ACM membership card or your valid student identification card, you will be charged the full non-member registration fee.

Registration Hours

If you registered by Tuesday, 16 July, please go to the advance registration Hall D lobby. Otherwise, proceed to onsite registration in Hall D. Registration hours:

Saturday, 3 August	**7 pm to 10 pm**
Sunday, 4 August	**10 am to 9 pm**
Monday, 5 August	**8 am to 7 pm**
Tuesday, 6 August	**8 am to 7 pm**
Wednesday, 7 August	**8 am to 6 pm**
Thursday, 8 August	**8 am to 6 pm**
Friday, 9 August	**8:30 am to 1 pm**

Media Headquarters Hours

Room 97

Sunday, 4 August	**10 am to 7 pm**
Monday, 5 August	**8 am to 7 pm**
Tuesday, 6 August	**8 am to 7 pm**
Wednesday, 7 August	**8 am to 6 pm**
Thursday, 8 August	**8 am to 6 pm**
Friday, 9 August	**8:30 am to 1 pm**

Media Registration

Media representatives must register in the Media Headquarters office.

Media-only Information and Events

Media Briefing
Tuesday, 6 August
8 am to 8:45 am
Room 100/102

The official SIGGRAPH media briefing is the place for you to hear about what's new and what's hot at SIGGRAPH 96. See a preview of the Electronic Theater, and receive insight into new venues such as the Digital Bayou, The Bridge, and Applications.

Media Tours

Exhibition Floor Tour
Immediately Following the Media Briefing
Tuesday, 6 August
9 am to 10 am

Gain access to the exhibit floor before its opening to the general public for a "sneak preview" of the latest products and applications offered by more than 250 exhibitors. Small groups of media representatives will be escorted onto the exhibit floor.

Exhibitor Media Events

A schedule of various exhibitor media events will be available in the Media Headquarters office (*Room 97*).

Special Policies

- The Exhibition is only open to badged attendees.
- Children under 16 are not permitted in the Exhibition. For more information on child care, see page 60.
- No cameras or recording devices are permitted at SIGGRAPH 96.

SIGGRAPH 96 and the Ernest N. Morial Convention Center offer several services during the conference to make your week more enjoyable.

Audio/Visual Services

Hall F

Direct all questions about audio/visual needs to this office. Office hours are Sunday – Thursday, 7 am to 7 pm and Friday, 7 am to 2 pm. For more information on audio/visual services for speakers, see Speaker Prep Room, page 61.

The Bridge: SIGGRAPH 96 Art Show Office

Room 66

Contributors can gather here to exchange ideas, leave messages, or discuss questions and concerns.

Business Center

Hall E Lobby

Exhibitor Concierge is on hand to provide copy, fax, courier, desktop publishing services and office supplies for a fee.

Career Center

Room 85/86

Saturday, 3 August	**7 pm to 10 pm**
Sunday, 4 August	**10 am to 9 pm**
Monday, 5 August	**8 am to 7 pm**
Tuesday, 6 August	**8 am to 7 pm**
Wednesday, 7 August	**8 am to 6 pm**
Thursday, 8 August	**8 am to 6 pm**
Friday, 9 August	**8:30 am to 5 pm**

If you're looking for a new position, or if you're searching for talented employees, check out the SIGGRAPH 96 Career Center. Post your employment opportunities. Request resumes from job candidates. Ask us to distribute your resume to specific employers. Schedule interviews in private meeting rooms.

Career Center facilities and services are available free of charge to SIGGRAPH 96 exhibitors and attendees who are exploring job opportunities. Non-exhibitor employers must make arrangements with the Exhibition Management office to use the Career Center.

Check Room

Hall E Lobby

Luggage check services for briefcases, backpacks, and other small items are available during registration hours. Items cannot be checked overnight. Charges are $2 for bags and $1 for coats. Any items left in the check room after 5 pm on 9 August will be turned over to the Ernest N. Morial Convention Center security.

Child Care

Rooms 11 and 13

To leave messages for the Child Care area contact Accent on Arrangements: +1.504.524.1227

Accent on Arrangements provides age-appropriate child care activities for children from three months to 16 years of age at the Ernest N. Morial 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 24 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, 4 August	**11:30 am to 7 pm**
Monday, 5 August	**8 am to 6 pm**
Tuesday, 6 August	**8 am to 7 pm**
Wednesday, 7 August	**8 am to 7 pm**
Thursday, 8 August	**8 am to 6 pm**
Friday, 9 August	**8 am to 6 pm**

Onsite registration prices: $7 per hour for the first child per family; all others from the same family $5 per hour per child.

Fees include snacks and beverages in the morning and afternoon.

Computer Animation Festival Office

Room 83

Contributors can gather here to exchange ideas, leave messages, or discuss questions and concerns.

Conference Management Office

Room 89

If you have questions regarding SIGGRAPH 96, call +1.504.544.6004 or stop by this office at anytime.

Conference Policies

- Smoking is not permitted at any of the conference locations.
- No cameras or recording devices are allowed.
- Children under 16 are not permitted on the Exhibition floor.
- SIGGRAPH 96 is not responsible for lost badges. Lost badges must be repurchased by the attendee.

Digital Bayou Office
Hall C
Contributors can gather here to exchange ideas, leave messages, or discuss questions and concerns.

Electronic Theater Tickets
See Tickets, page 62.

Ernest N. Morial Convention Center Accessibility
The convention center is wheelchair accessible. It has no curbs, and there are elevators to the second and third floors.

Ernest N. Morial Convention Center Parking
SIGGRAPH 96 attendees can park in two lots adjacent to the Ernest N. Morial Convention Center:

- Downtown Parking, between the New Orleans Hilton and the Convention Center, 6 am to midnight, $7 for 4-10 hours, no in/out privileges.
- Fulton Street Garage, across the street from Hall C, 6 am to 9 pm, $5/day, no in/out privileges.

Exhibition Management Office
Hall F
If you have questions regarding the SIGGRAPH 96 Exhibition, feel free to call +1.504.544.6006 or visit a staff member here.

Exhibitor Registration
Hall F
Exhibitors should pick up their badges at the exhibitor registration counter, which is open during the registration hours.

First Aid
Hall E
A registered nurse or paramedic is on duty at the first aid areas during registration hours.

Food Services
The Ernest N. Morial Convention Center operates several food concession areas for the convenience of SIGGRAPH 96 attendees, including the Cafe between Halls B & C and a temporary restaurant in Hall F. Food carts and casual seating are also available throughout the convention center.

Information Booths
Hall D Lobby and Hall F Lobby
Stop here for answers to questions about SIGGRAPH 96 and information on how to find conference destinations.

Internet Access Center
Hall F
Complete Internet access to your home, office, and colleagues around the world, available to all attendees every day during registration hours beginning Sunday.

Lost and Found
Security
All items should be turned over to the Ernest N. Morial Convention Center security office. To inquire about lost items, call +1.504.582.3040 (24 hours a day, seven days a week).

Merchandise
Hall D
SIGGRAPH 96 merchandise is available for sale in Hall D. Merchandise must be purchased and picked up by 1 pm, Friday, 9 August.

Merchandise Sold After the Conference
SIGGRAPH 96 Conference Proceedings and Proceedings CD-ROM. The SIGGRAPH 96 technical program at the conference, including Papers and abstracts of Panels.

SIGGRAPH 96 Visual Proceedings and Visual Proceedings CD-ROM. The art and interdisciplinary programs at SIGGRAPH 96, including The Bridge, the Computer Animation Festival, Sketches, Applications, and Digital Bayou.

SIGGRAPH 96 Course Notes CD-ROM. Notes from all courses presented at the conference.

SIGGRAPH 96 Slide Set Bundle. The Technical and Art Show slide sets.

SIGGRAPH Video Review. Animations presented in the Electronic Theater and Festival Screening Rooms.

To order, contact:
ACM Order Department
P.O. Box 12114
Church Street Station
New York, New York 10257 USA
800.342.6626
+1.212.626.0500
+1.212.944.1318 fax
orders@acm.org

Message Center
Hall F Lobby
Messages are posted on bulletin boards in the Message Center.

Registration
Advance Registration
Hall D Lobby

Onsite Registration
Hall D

Registration counters are open:

Saturday, 3 August	**7 pm to 10 pm**
Sunday, 4 August	**10 am to 9 pm**
Monday, 5 August	**8 am to 7 pm**
Tuesday, 6 August	**8 am to 7 pm**
Wednesday, 7 August	**8 am to 6 pm**
Thursday, 8 August	**8 am to 6 pm**
Friday, 9 August	**8:30 am to 1 pm**

Restaurant/Tour Information Desk
Hall D Lobby
Menus from local restaurants are available here. Staff members can assist you with restaurant selection and reservations. Information on New Orleans attractions, tours, and diversions is also available. The desk is open during registration hours.

Shipping Desk
Hall D
For your convenience, a shipping desk at SIGGRAPH 96 provides next-day air, second-day air, and regular ground shipping services to destinations throughout the world.

Speaker Prep Room
Room 52

Saturday, 3 August	**2 pm to 8 pm**
Sunday-Thursday, 4-7 August	**7 am to 7 pm**
Friday, 9 August	**7 am to 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 in the Hall D Lobby to pick up registration credentials.

Speakers use the Speaker Prep Room to prepare for their presentations, 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

Hall D Lobby

Staff members at the special assistance desk help attendees resolve a wide range of possible problems and concerns, including:

- Credit card problems (validations, errors)
- Lost badges
- Misspelled names on conference materials
- Payments submitted without registration forms
- Registration forms submitted without payments
- Substitute registration (only if authorized on company letterhead)

Tickets

Additional Purchases

Electronic Theater

One ticket per person is included with Conference, Courses, and Papers/Panels Passport registrations. Every attempt is made to accommodate your requested Electronic Theater evening. All performances contain the same material.

Badged attendees may purchase up to four Electronic Theater tickets (subject to availability) at onsite registration beginning at 7 pm Saturday. If additional tickets are available, they will be sold at the Saenger Theatre box office just before showtime. Last-minute tickets may be available at the door.

Receptions

Badged attendees may purchase additional tickets for the course reception and papers/panels reception at onsite registration.

Telephone Numbers

Audio/Visual Services
+1.504.544.6001

The Bridge: SIGGRAPH 96 Art Show Office
+1.504.544.6002 (Convention Center)
+1.504.566.1005 (CAC)

Computer Animation Festival Office
+1.504.544.6003

Conference Management Office
+1.504.544.6004

Digital Bayou Office
+1.504.544.6005

Emergencies (ambulance, fire, police)
+1.504.582.3040

Ernest N. Morial Convention Center
+1.504.582.3000

Exhibition Management Office
+1.504.544.6006

First Aid Office
+1.504.582.3096

Flying Colors
+1.504.544.6007

Greater New Orleans Tourist & Convention Commission, Inc.
+1.504.566.5031

International Center
+1.504.544.6008

Media Headquarters
+1.504.544.6009

Message Center
+1.504.544.6000

Registration
Advance Registration
+1.504.544.6010

Onsite Registration
+1.504.544.6011

Speaker Slide-Making Room
+1.504.544.6012

Speaker Prep Room
+1.504.544.6013

In the International Center, the temporary headquarters of the worldwide computer graphics community, members of the International Committee are available to answer questions and provide information about SIGGRAPH 96. During the conference, student volunteers provide assistance and conference information. Look for their yellow vests with flags that indicate their language fluency.

Hall E Lobby

Saturday
7 pm to 10 pm

Sunday
10 am to 9 pm

Monday and Tuesday
8 am to 7 pm

Wednesday and Thursday
8 am to 6 pm

Friday
8:30 am to 1 pm

SIGGRAPH 96
International Committee

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Information Booths

The SIGGRAPH information booths provide information about these services and activities.

ACM

Hall E Lobby

ACM, the first society in computing and sponsor of the SIGGRAPH conference, serves as an umbrella organization to information-technology professionals. Through its magazines, journals, books, and conferences, ACM offers its members access to information on the latest developments in cutting-edge technology, the transfer of ideas from theory to practice, and opportunities for information exchange. ACM is the resource for lifelong learning in the rapidly changing information technology field.

For more information contact:
ACM
1515 Broadway
New York, New York 10036 USA
800.342.6626 (Continental US and Canada)
+1.212.626.0500 (Metro New York and International)
+1.212.944.1318 (North America)
+32.2.774.9602 (Europe)
+32.2.774.9690 fax (Europe)
acmhelp@acm.org
acm_europe@acm.org

ACM SIGGRAPH

Hall E Lobby

The SIGGRAPH organization booth provides information about membership, organization activities, and volunteer opportunities. Stop by to meet key people in the SIGGRAPH organization. SIGGRAPH members receive a small gift for stopping by and saying "hi". For more information on the ACM SIGGRAPH organization please refer to page 130 or contact Steve Cunningham at cunningham@siggraph.org

SIGGRAPH 97

Hall D Lobby

Welcome to SIGGRAPH 97! Here's your source for complete information on next year's worldwide convergence of computer graphics technology, imagination, products, people, and prospects in Los Angeles. Pick up a copy of the SIGGRAPH 97 Call for Participation. Meet the SIGGRAPH 97 Committee. And start planning your role in the next international extravaganza of computer graphics and interactive techniques.

SIGGRAPH 97
Los Angeles
3-8 August 1997
Los Angeles Convention Center
Los Angeles, California USA

For more information contact:
SIGGRAPH 97 Conference Management
Smith, Bucklin & Associates, Inc.
401 North Michigan Avenue
Chicago, Illinois 60611 USA
+1.312.321.6830
+1.312.321.6876 fax
siggraph97@siggraph.org

SIGGRAPH Education Committee

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The Education Committee booth features SPACE, a juried exhibition of student animations and posters, and a display of student slides submitted by faculty from around the world. The booth also serves as a central meeting area for educators who wish to make contact with others and to exchange information. The SIGGRAPH Education Committee is involved with K-12 and university-level activities, and it sponsors the SIGGRAPH Educators Program.

For more information contact:
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SIGGRAPH One More Time

Hall D

SIGGRAPH once again makes back issues of all publications, including slide sets, proceedings, and CD-ROMs of the SIGGRAPH conference, as well as other conference proceedings, available to SIGGRAPH 96 attendees. Come early – many interesting materials are in very short supply.

For more information contact:
STEPHEN SPENCER
spencer@siggraph.org

SIGGRAPH Professional Chapters

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The Professional Chapters of ACM SIGGRAPH, formerly called Local Groups, exist in over 30 cities in 10 countries around the world. They form an international multi-cultural network of like-minded people who develop, continue, and extend the work and achievements presented at the annual ACM SIGGRAPH Conference. Each chapter includes members involved in education, research, development, industry, and entertainment who are interested in the development of computer graphics and its related technologies and applications. Here is your opportunity to continue your SIGGRAPH experience by joining a professional chapter. If there is no professional chapter in your local area, inquire at the SIGGRAPH Professional Chapters Booth about how to form one.

For more information contact:
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SIGGRAPH Director for Professional Chapters
lang@siggraph.org

SIGGRAPH Video Review

Hall D

SIGGRAPH Video Review is the world's most widely circulated video-based publication. Since 1979, SIGGRAPH Video Review has illustrated the latest concepts in computer graphics and interactive techniques/technologies. Over one hundred programs provide an unequaled opportunity to study advanced computer graphics theory and applications. SIGGRAPH Video Review tapes are available at SIGGRAPH 96 in NTSC VHS and PAL VHS.

For more information contact:
SIGGRAPH Video Review
c/o ACM
P.O. Box 12114
Church Street Station
New York, New York 10257 USA
800.342.6626 (USA/Canada)
+1.212.626.0500 (overseas)
+1.212.944.1318 fax
svrorders@siggraph.org
http://www.siggraph.org/publications/video-review/svr.html

SIGGRAPH Travel Coordinator

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A representative from Flying Colors (SIGGRAPH Travel Coordinator) is available to assist you with your travel and housing needs at the following times:

Saturday, 3 August	**7 pm to 10 pm**
Sunday, 4 August	**10 am to 9 pm**
Monday, 5 August	**8 am to 7 pm**
Tuesday, 6 August	**8 am to 7 pm**
Wednesday, 7 August	**8 am to 6 pm**
Thursday, 8 August	**8 am to 6 pm**
Friday, 9 August	**8:30 am to 1 pm**

If you wish to rent a car, special discounted rates have been arranged with Alamo Rent A Car, Inc. Your Flying Colors agent can book a car reservation for you or you can call Alamo directly at 800.732.3232 and mention SIGGRAPH ID #75148.

Shuttle Service

SIGGRAPH 96 provides free shuttle service between most conference hotels and the Ernest N. Morial Convention Center. Schedules are displayed at the hotels. See the Conference Locator for complete details on shuttle service. For assistance with handicap service, please call +1.504.592.1991. SIGGRAPH 96 provides buses with wheelchair lifts and tiedowns.

Ernest N. Morial Convention Center Shuttles to Receptions, the Electronic Theater, and the Contemporary Arts Center

Course Reception – Monday

Cajun & Creole Queen Paddleboats and New Orleans International Terminal

Shuttles to join the Course Reception parade begin departing for the Marriott at 7 pm from all hotels except those within walking distance (Routes 2, 4, and 7). Shuttles directly to the Cajun & Creole Queen Paddleboats begin departing from all hotels except the Hilton, which is within walking distance, at 7:30 pm.

Return transportation is available until 11:30 pm.

Papers/Panels Reception - Thursday

New Orleans Marriott Grand Ballroom

Beginning at 7:30 pm, shuttles depart from all hotels except those within walking distance (Routes 2, 4, and 7). Return transportation to most conference hotels is available until 11:30 pm.

Electronic Theater - Monday Through Thursday

Saenger Theatre

Shuttles from Hall F, Ernest N. Morial Convention Center, to the Saenger Theatre begin service one hour prior to show time. For the 9 pm Tuesday showing, shuttle service begins at 8 pm from all conference hotels. Shuttles also provide transportation directly from the Saenger Theatre to the Course and Papers/Panels Receptions. See the Conference Locator for details.

Contemporary Arts Center

Shuttle service is available from the Ernest N. Morial Convention Center to The Bridge: SIGGRAPH 96 Art Show at the Contemporary Arts Center. See the Conference Locator for details.

Airport Shuttle

Hall D Lobby

Airport Shuttle booth hours:
Wednesday - Thursday, 8 am to 6 pm
Friday, 8:30 am to 1 pm

One way $10. If you make your return reservation at the Airport Shuttle Desk, you will receive $1 off. Return reservations should be made at least one day prior to your departure. You may call Airport Shuttle direct at +1.504.522.3500.

Hotel Map

Headquarters Hotel
1 New Orleans Marriott
555 Canal Street
New Orleans, Louisiana 70130
+1.504.581.1000
+1.504.581.5749 fax

2 Bourbon Orleans
717 Orleans Street
New Orleans, Louisiana 70116
+1.504.523.2222
+1.504.525.8166 fax

3 Chateau Dupre
131 Rue Decatur
New Orleans, LA 70130
+1.504.569.0600
+1.504.569.0606 fax

4 Chateau Sonesta
800 Iberville Street
New Orleans, LA 70140
+1.504.586.0800
+1.504.553.2387 fax

5 Comfort Inn Downtown
1315 Gravier Street
New Orleans, Louisiana 70112
+1.504.586.0100
+1.504.527.5263 fax

6 Comfort Suites
346 Baronne Street
New Orleans, Louisiana 70112
+1.504.524.1140
+1.504.523.4444 fax

7 Dauphine Orleans Hotel
415 Rue Dauphine
New Orleans, Louisiana 70112
+1.504.586.1600
+1.504.586.1409 fax

8 Days Inn
1630 Canal Street
New Orleans, Louisiana 70112
+1.504.586.0110
+1.504.581.2253 fax

9 Doubletree Hotel
300 Canal Street
New Orleans, Louisiana 70130
+1.504.581.1300
+1.504.522.4100 fax
+1.504.599.3000 fax

10 Embassy Suites Hotel New Orleans
315 Julia Street
New Orleans, Louisiana 70130
+1.504.525.1993
+1.504.522.3044 fax

11 Fairmont Hotel
123 Baronne Street
New Orleans, Louisiana 70140
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+1.504.581.4515 fax

12 French Market Inn
501 Rue Decatur
New Orleans, Louisiana 70130
+1.504.561.5621
+1.504.566.0160 fax

13 Hampton Inn
226 Carondelet
New Orleans, Louisiana 70130
+1.504.529.9990
+1.504.529.9996 fax

14 Hilton Riverside
Poydras at the Mississippi River
New Orleans, Louisiana 70140
+1.504.561.0500
+1.504.525.8636 fax

15 Holiday Inn Chateau
Le Moyne
301 Rue Dauphine
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+1.504.581.1303
+1.504.523.5709 fax

16 Holiday Inn Crowne Plaza
333 Poydras
New Orleans, Louisiana 70130
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+1.504.568.9312 fax

17 Holiday Inn French Quarter
124 Rue Royale
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+1.504.566.1127 fax

18 Holiday Inn Select
881 Convention Center Boulevard
New Orleans, Louisiana 70130
+1.504.524.1881
+1.504.528.1005 fax

19 Holiday Inn West Bank
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+1.504.362.5814 fax

20 Hotel Inter-Continental
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+1.504.528.1019 fax

25 New Orleans Travelodge West
2200 West Bank Expressway
Harvey, Louisiana 70058
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+1.504.368.2774 fax

26 Omni Royal Crescent
535 Gravier Street
New Orleans, Louisiana 70130
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+1.504.523.0806 fax

27 Omni Royal Orleans
621 St. Louis Street
New Orleans, Louisiana 70140
+1.504.529.5333
+1.504.529.7089 fax

28 Pallas Hotel
1732 Canal Street
New Orleans, Louisiana 70112
+1.504.558.0201
+1.504.529.1609 fax

29 The Pelham Hotel
444 Common Street
New Orleans, Louisiana 70130
+1.504.522.4444
+1.504.539.9010 fax

30 The Pontchartrain
2031 St. Charles Avenue
New Orleans, Louisiana 70140
+1.504.524.0581
+1.504.529.1165 fax

31 The Prytania Park Hotel
1525 Prytania Street
New Orleans, Louisiana 70130
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+1.504.522.2977 fax

32 Radisson Hotel New Orleans
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New Orleans, Louisiana 70140
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+1.504.525.2644 fax

33 Ramada Hotel-St. Charles
2203 St. Charles Avenue
New Orleans, Louisiana 70140
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+1.504.581.1352 fax

34 Royal Sonesta Hotel
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+1.504.586.0300
+1.504.586.0335 fax

35 The Saint Ann Marie Antoinette Hotel
717 Rue Conti
New Orleans, Louisiana 70130
+1.504.525.2300
+1.504.524.8925 fax

36 St. Charles Inn
3636 St. Charles Avenue
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+1.504.899.8888
+1.504.899.8892 fax

37 The St. Louis Hotel
730 Rue Bienville
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+1.504.524.8925 fax

38 Sheraton New Orleans
500 Canal Street
New Orleans, Louisiana 70130
+1.504.525.2500
+1.504.561.0178 fax

39 Windsor Court Hotel
300 Gravier Street
New Orleans, Louisiana 70130
+1.504.523.6000
+1.504.596.4513 fax

40 Wyndham New Orleans Hotel
701 Convention Center Boulevard
New Orleans, Louisiana 70130
+1.504.524.8200
+1.504.681.1018 fax

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Union Passenger Terminal
Saenger Theatre
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Contemporary Arts Center
World Trade Center
Aquarium of the Americas
Ernest N. Morial Convention Center
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S. Peters
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St. Louis
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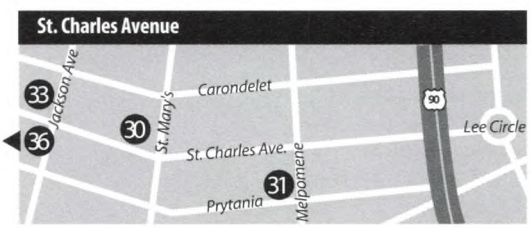
St. Peter
St. Ann
Dumaine
St. Phillip
Front St. / Convention Center Blvd.
1/4 mile
1/2 mile
3/4 mile
1 mile
1 1/4 miles
1 1/2 miles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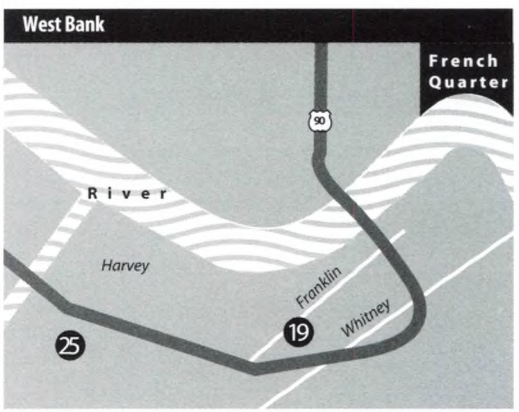
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French Quarter
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Overview

Computer networking has become an integral part of both the computer graphics community and the SIGGRAPH conference. As part of the conference infrastructure, SIGGRAPH 96 has installed a state-of-the-art intranet linking programs and exhibitors within the conference to the global graphics community. The networked graphics environment created at SIGGRAPH 96 provides an international communications forum for attendees, exhibitors, contributors, and remote participants.

Creating such an environment requires supporting the transport of full-motion video, high-resolution graphics, audio, and raw data. A high-bandwidth, low-latency, reliable network is required to support such transport. The ATM-based switched internetwork that was considered technical innovation as recently as SIGGRAPH 95 is now expected by contributors and exhibitors.

The process for meeting the above requirements began with an analysis of the multitude of applications supported last year and expected growth at SIGGRAPH 96. This analysis led to the design and implementation phase that resulted in this year's GraphicsNet configuration.

Requirements

A major growth area in the design was the requirement for more Internet support. This was driven by exhibitors and contributors relying on the World Wide Web for their demonstrations. Additionally, all of the technical programs have networked computers for access to the WWW during presentations. Internet access will be available to all conference participants. The SIGGRAPH 96 information kiosks, composed of clusters of Hewlett-Packard workstations, connect to the conference Web server and provide onsite up-to-date information about the conference. Each individual connection is not a significant consumer of bandwidth by itself. However, the aggregate bandwidth is well above 10 Mbps, necessitating a T3 (45Mbps) Internet connection as part of the solution.

Internal to the conference, there are several high-bandwith applications that require the ATM transport capability. For instance, live video from the Keynote Address is distributed into the Digital Bayou and Applications area. Also, some exhibitors and Digital Bayou contributors are participating in interactive simulations using the Distributed Interactive Simulation (DIS) virtual environment. Yet another high-bandwidth application is an onsite oceanographic simulation with real-time access to a remote supercomputer. External WAN (wide-area network) connections are required in at least two areas. The Bridge: SIGGRAPH 96 Art show will have two sites, one at the convention center and another at the New Orleans Contemporary Arts Center (CAC). These two sites require a network link for presentation of interactive technologies and collaborative efforts. The second WAN is for offsite speakers in the Papers and Panels programs.

Architecture

This year, GraphicsNet features LAN Emulation over ATM (ATM Forum LANE 1.0 standard). LANE provides transparent support for multiple network protocols over an ATM backbone. Using ATM and LANE allows segregation of the logical network design from the physical network infrastructure. This leads to a simplified flat addressing network design, that supports high-bandwidth requirements and multicasting. Direct ATM-attached workstations, ATM/Ethernet (edge of backbone) devices providing distributed routing functions, and the T3 Internet and WAN services are connected to a backbone of ATM switches distributed throughout the convention center.

Design and Implementation

The main SIGGRAPH 96 networking goal was an intranet that was simple to setup, easy to maintain, reliable, and state-of-the-art. The Ernest N. Morial Convention Center has an extensive network infrastructure in place. The facility provides fiber and 10BaseT connectivity to almost any internal location on a timely basis and at a competitive price. Using network utilization information from SIGGRAPH 95, ATM technology, and the existing cable plant design, we quickly developed a baseline network backbone design.

NetSuite Professional Design software was used to help design the network. This tool provided network diagrams, physical design and topology validation, a database for IP address planning and asset reporting, and automatic HTML generation. In effect, NetSuite was the network database, ideal tool for design, implementation, and management of this complex network.

Network Software

Sun's Netra Internet Servers are being used to host Web and email services and provide Domain Name Services (DNS) for SIGGRAPH 96. The servers use the POP2/3 and IMAP mail protocols and include the latest available software from JavaSoft and Netscape with a complete security/firewall facility. The DNS configuration and management are handled by Inter Commerce Corporation (ICC). ForeThought networking software is used to manage the ATM switch backbone infrastructure and the LANE intranetwork. This software also supports VLAN bridging and router support within the intranet. The network management platform is ForeView running under SunNetManager on Sparcstations.

Network Hardware

The ATM backbone is composed of one FORE Systems ForeRunner ASX-1000 ATM switch and 25 FORE Systems ForeRunner ASX-200BX ATM switches. The ASX-1000 is the main switch, and each of the other switches is linked to it by either a 155 Mbps multi-mode OC-3c connection or a 622 Mbps multi-mode OC-12c connection. The switches are placed in equipment rooms, catwalks above the exhibit floor, or individual rooms.

The T3 Internet link is connected to a Cisco 7500 series router located in the convention center's demarcation room. This router is directly connected to an ASX-200BX switch and to another Cisco 7500 series router at the CAC. The T3 Internet link and the circuit between the CAC and the convention center are provided by Inter Commerce Corporation. External WAN connections also terminate in the demarcation room and are connected to the ASX-200BX located there.

Ethernet connectivity is via FORE Systems ES-3810 Ethernet Workgroup Switches and FORE Systems PowerHub 7000 Intelligent Switching hubs. The ES-3810s provide ATM LANE connectivity for 10BaseT desktop ports or four port Ethernet hubs. The PowerHubs provide distributed routing functionality for the LANE intranetwork and additional 10BaseT segments. The switches and hubs are located in the catwalks above the exhibit floor or the convention center telephone closets.

Individual computers are connected to the network in one of three ways: direct ATM connection, 10BaseT switched Ethernet connection, or 10BaseT shared Ethernet connection. Ethernet hubs from both LANCAST and D-Link Systems are connected to the ATM/Ethernet switches to provide shared Ethernet connections.

Video is distributed over the ATM backbone with Nemesys Research's ATM video encoding and decoding products: the AVA 300 and ATV 300.

The Network Operations Center is the central point for configuring, monitoring, and maintaining GraphicsNet. It is located in Room 8 on the second floor of the convention center. Two other troubleshooting areas are located in the Digital Bayou offices and the Exhibitor Service Center.

The SIGGRAPH 96 Online kiosks use Hewlett-Packard C110 Visualize-48 workstations.

Acknowledgements

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Inter Commerce Corporation

Special thanks to these individuals and their employers for their personal and corporate contributions of time, expertise, and creativity.

SIGGRAPH 96 gratefully acknowledges the support of the following companies in making GraphicsNet an outstanding technology demonstration:

FORE SYSTEMS
ATM switch hardware
ForeThought Internetworking software
ATM/Ethernet switch hardware
ForeView management software

SUN MICROSYSTEMS
Netra Internet Servers
Sparcstations

CISCO SYSTEMS
Internet gateway and intersite routers

HEWLETT-PACKARD COMPANY
Kiosk workstations

LANCAST
10BaseT Ethernet hubs

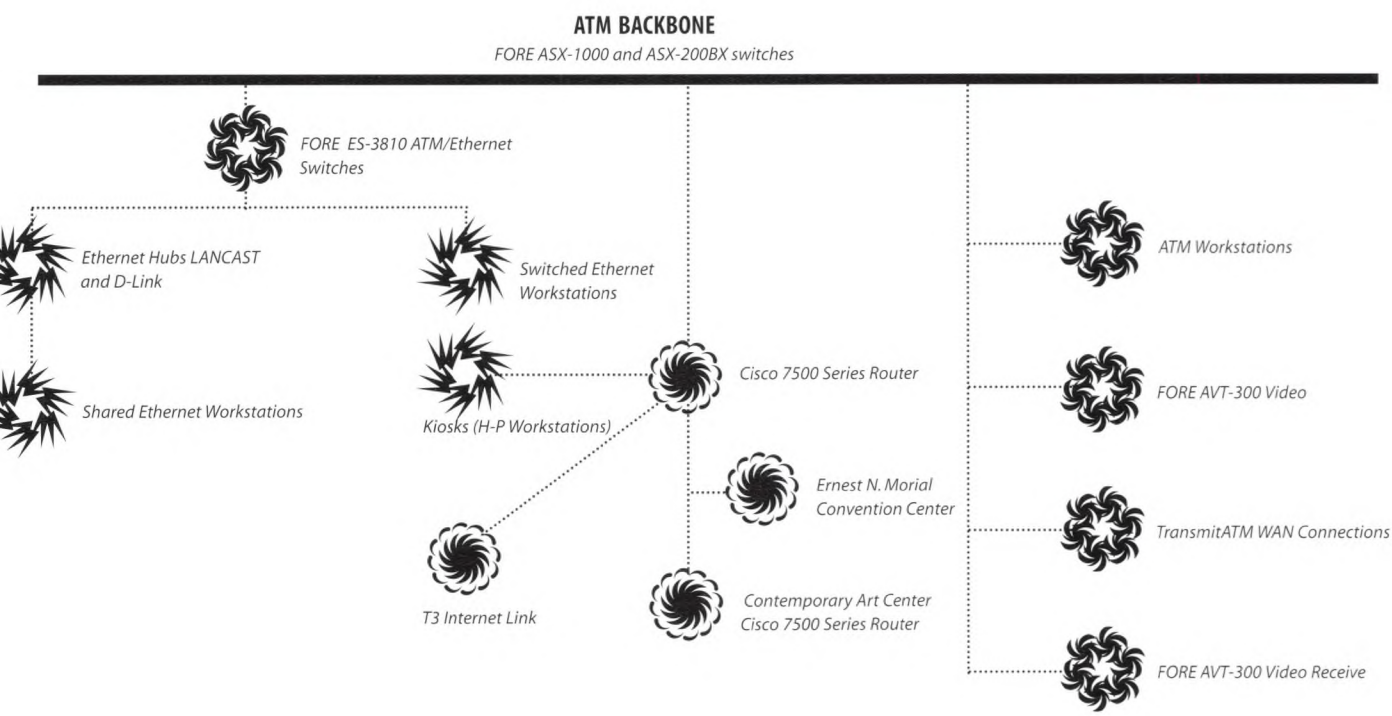
D-LINK
10BaseT Ethernet hubs

NETSUITE
Network design software

Inter Commerce Corporation
Networking support

Finally, the Ernest N. Morial Convention Center networking staff deserve special recognition for the support and technical excellence they contributed to GraphicsNet's success.

SIGGRAPH 96 Networking Chair
JEFF JORTNER
Sandia National Laboratories



All the tools that power the digital revolution. This year's most advanced hardware. Software that converts inspiration to reality. Systems that solve problems and support creativity. And a vast array of expertise and experience. All in the largest annual gathering of companies that supply the world's most dynamic industry. The SIGGRAPH 96 Exhibition features a special innovation:

STARTUP PARK (see page 111 for list of exhibitors)

New technology from the small companies that hope to become tomorrow's industry leaders. This area of the exhibition offers emerging suppliers of the latest products and services an easy entry into the ever-expanding computer graphics marketplace.

Halls B2, C, D, E, and portions of F

Tuesday and Wednesday
10 am to 6 pm

Thursday
10 am to 3:30 pm

Exhibits Plus Registration

With Exhibits Plus, you receive admission to the Exhibition, Technical Sketches, Festival Screening Rooms, The Bridge, Applications, Digital Bayou, Artist/Designer Sketches, Animator Sketches, Special Session, Behind the Scenes, Fundamentals Seminar, Keynote Address/Award, and Welcome Reception. Exhibits Plus registration is non-refundable.

Space Reservation

To purchase exhibition space for SIGGRAPH 97, call or write:

SIGGRAPH 97 Exhibition Management
Hall-Erickson, Inc.
150 Burlington Avenue
Clarendon Hills, Illinois 60514 USA
+1.630.850.7779
+1.630.850.7843 fax
halleric@siggraph.org

Products and Services on Display

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- Mapping and Cartography
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- Software
- Storage Devices: Tape/Disk
- Terminals, Monitors, and Displays
- Video Technology
- Virtual Reality

3D Construction Company
Booth 129

Route #1
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+1.423.543.8917
+1.423.543.4011 fax
70750.633@compuserve.com
http://www/3dconstruction.com

John D. Merritt
President

3D Builder software makes it easier and faster to build dimensionally accurate 3D models of your real-world data from photos. It features automatic texture mapping from the photo and optional camera calibration for improved accuracy. Offering a valuable alternative to constructing 3D models of existing objects, 3D Builder works seamlessly with the major rendering and animation packages, freeing you to concentrate on the creative possibilities.

3D/EYE
Booth 2255

700 Galleria Parkway, Suite 400
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info@eye.com
http://www.eye.com

Angie Ciarloni
Marketing Communications Manager

3D/EYE presents TriSpectives Professional: The New Standard for 3D, a complete 3D design program for Windows 95 and Windows NT. It combines precise ACIS-based solid modeling, photo-realistic 3D illustration, drag-and-drop real-time 3D animation, and comprehensive import/export features.

3Dfx Interactive, Inc.
Booth 2037

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http://www.3Dfx.com

Wendy Allen
Marketing Communications Manager

3Dfx Interactive, Inc., founded in 1994, is a privately held company headquartered in Mountain View, California that brings together a team of leading professionals from the 3D graphics, PC, video game, and semiconductor industries to provide new levels of entertainment.

3Dlabs, Inc.
Booth 1750

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http://www.3Dlabs.com

Catherine Crawford
Marketing and Sales Coordinator

3Dlabs is leading the revolution in high-performance 3D graphics on the PC, selling silicon, software, and technology for 3D acceleration. The new GLINT 500TX provides workstation-class 2D and 3D graphics on a single PCI chip, accelerating Gouraud shading, depth buffering, anti-aliasing, and texture mapping to 500,000 polygons/second. The GLINT Delta accelerates the 3D geometry pipeline to one million polygons per second on a standard PC. The new PERMEDIA provides high-performance 2D, video, and 500,000 texture-mapped 3D polygons per second in a single low-cost chip. 3Dlabs supplies reference designs and optimized drivers for OpenGL, Direct3D, Heidi, and QuickDraw 3D, enabling OEMs to rapidly integrate 3D into their products.

3NAME3D
Booth 1442

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+1.310.314.2181 fax
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http://www.ywd.com

Steven Wallock
Creative Director

3NAME3D will work with you to design, model, sculpt, digitize, and texture-map your project and bring it to life. 3NAME3D is successful in completing projects for games, VRML applications, LBE, television, and film. 3NAME3D also offers CYBERPROPS, a 3D model library available for sale or licensing.

3rd Dimension Technologies, Inc.
Booth 2362

31225 La Baya Drive, Suite 107
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+1.818.865.8213 fax
kmclaine@adnetsol.com
http://www.3dt.net/3d-art

Kevin McLaine
Vice President

3rd Dimension Technologies, Inc. is the world leader in providing photo-textured 3D-models to graphics designers, video game companies, and animators. 3rd Dimension has launched "The Virtual World Project," a collection of 20,000 photomesh 3D models that will bring inexpensive Hollywood-level 3D-effects to the home PC by the year 2000.

4DVISION
Booth 2544

4800 Happy Canyon Road, Suite 250
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Janet Susmann
Dealer Relations/Trade Show Coordinator

4DVISION develops, publishes, and markets software that plugs into Autodesk, Inc.'s 3D Studio Max rendering and animation system. 4DVISION's flagship plug-in products include Sculptor, a NURBS modeler, and 4D Paint, a full 3D paint system, for Autodesk's 3D Studio Max in Windows NT.

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Steve Clement-Hayes
Marketing Director

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Animation Magazine is the international trade publication for the animation industry, covering television, feature films, videos, commercials, post-production, multimedia, computer technologies, historical perspectives, licensing, schools, and animation art collecting. Regular columns include CGI, viewpoints from industry professionals, and up-to-the-minute information on the people and companies that are influencing the world of animation.

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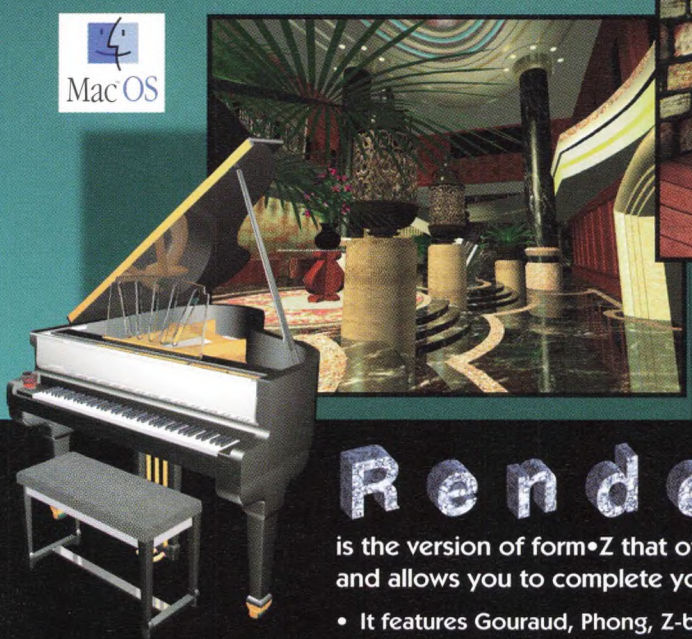

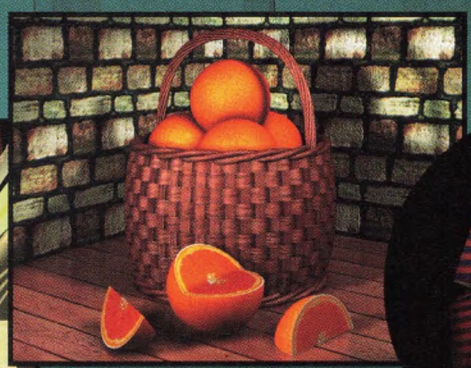

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CalComp, a leading provider of computer graphics peripherals for more than 35 years, is demonstrating an extensive line of input and output devices, including, in their SIGGRAPH debut, new members of the popular TechJET family of wide-format color inkjet plotters and printers. The DrawingSlate II family of small-format graphics tablets is also being demonstrated.

Caligari Corporation
Booth 1905

1959 Landings Drive
Mountain View, California 94043 USA
+1.415.390.9600
+1.415.390.9755 fax
support@caligari.com
http://www.caligari.com

Kevin Rogan
Marketing Coordinator

Caligari is demonstrating its award-winning 3D graphics and animation packages (trueSpace/SE and trueSpace2) and its VRML authoring and browsing package (Pioneer). Make sure to stop by and see the latest in multimedia and online 3D graphics.

Cambridge Animation Systems
Booth 427

20 Cambridge Place
Cambridge CB2 1NR
UNITED KINGDOM
+44.1223.578122
+44.1223.578121 fax
sales@animo.com
http://www.animo.com

Richard Ashton
Head of Communications

Cambridge Automation Systems develops and markets ANIMO, the leading cartoon animation system for film, TV, and multimedia production. Animo is installed in about 200 studios worldwide, including Warner Brothers, DreamWorks, and Nelvana. Animo offers automated assistance for all stages of the cartoon process and features unique animation and shading technology.

Camera Di Commercio di Milano - D.I.M.M.I.
Booth 337

Via Ansperto, 5
Milano 20123 ITALY
+39.2.8515.5212
+39.2.8515.5227 fax
dimmi@mi.camcom.it
http://www.mi.camcom.it/dimmi

Alessandra Modenese
Project Manager

D.I.M.M.I. is the showcase of Italian know-how in the multimedia sector and a point of access to Italian technologies, services, and products. 1996 activities: a telematic forum on multimedia; CD-ROM catalogue; a database of multimedia companies, products, and services; a workshop on the potential of multimedia in various industries; and participation in international fairs.

Canon U.S.A., Inc.
Booth 1229

One Canon Plaza
Lake Success, New York 10042 USA
+1.516.488.6700
http://www.usa.canon.com

Russell Marchetta
Senior Manager, Corporate Communications

Canon displays its three color laser printers: the CLC320, CLC700, and CLC800 with its ColorPass series of controllers. The company also displays its C LBP 360PS color laser printer.

If you work with visual computing applications, you understand the need for image storage and retrieval that's fast – as fast as you think. You need to see results in real time. Ciprico RAID disk array products are storage solutions for critical, performance-driven visual computing applications like yours.

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http://www.celco.com

John Constantine
Director of Sales & Marketing

CELCO's eXtreme digital color film recorders feature ultra-high resolution and unmatched recording speed. Long-term exposure stability and wide dynamic range make the eXtreme the choice for large-scale digital imaging projects including animation and special effects in the feature films "Independence Day", "Twister," and "Mission Impossible".

CGI–Computer Generated Imaging Magazine
Booth 2658

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Debbie Sutton/Michael Prochack

Charles River Media, Inc.
Booth 2020

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+1.617.871.4376 fax
chrivmedia@aol.com
http://www.algorithm.com/crm

Dave Pallai
President

Charles River Media Inc. publishes books and software for computing professionals. Our titles include *JavaScript CD Cookbook*, the *Ray Dream Handbook*, the *Macintosh 3D Handbook*, and the HTML TemplateMASTER CD (tutorials and templates for creating your own Web pages). For more details and ordering information, stop by our booth.

Chromatek Inc.
Booth 2333

11450-F North Fulton Industrial Boulevard
Alpharetta, Georgia 30201 USA
+1.770.772.9852
+1.770.663.4726 fax
Chromatek@aol.com
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Manufacturer of ChromaDepth 3-D Optical Film and marketer of the ChromaDepth 3-D Process. ChromaDepth 3-D is a low-cost, easy-to-implement stereoscopic 3-D process for all color display media. ChromaDepth 3-D images look normal until viewed with the patented ChromaDepth 3-D optics. Then they jump into dramatic 3-D!

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rmw@chyron.com
http://www.chyron.com

Ron Witko
Vice President, North America Sales

Chyron demonstrates the latest version 5.5 software for Liberty Paint and Animation for the SGI Indigo2 Impact, the iNFiNiTi real-time graphics system with new Transform II digital effects, and the Chyron/RT-SET Virtual Studio System demonstration tape.

Cinebase Software
Booth 2005

10866 Wilshire Boulevard, Suite 970
Sherman Oaks, California 91403 USA
+1.310.475.7959
+1.310.475.2878 fax
info@cinesoft.com
http://www.cinesoft.com

Wesley Hein
Executive Vice President

Cinebase Software demonstrates Cinebase, the leading visual asset management system available for SGI, Macintosh, and Windows platforms. Cinebase employs a client/server architecture, allowing multiple concurrent users to archive, manage, and distribute any type of digital content. Cinebase supports both local and wide-area networks and offers file I/O and device control.

Ciprico Inc.
Booth 517

2800 Campus Drive
Plymouth, Minnesota 55441 USA
+1.612.551.4000
+1.612.551.4002 fax
http://www.ciprico.com

Sue Leenerman
Director of Marketing

Ciprico, Inc., an ISO-certified company, designs, manufactures, markets, and services disk arrays for the high-performance imaging and digital media markets. At SIGGRAPH 96, Ciprico introduces its new 64/6500 Series of disk arrays and demonstrates it with a video-on-demand application. In addition, the company demonstrates its 7000 Series Fibre Channel disk arrays along with its 6900 Series of UltraSCSI disk arrays.

CIRAD - Unite de modelisation des plantes
Booth 1541

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Montpellier 34032 FRANCE
+33.67.10.15.75
+33.67.10.15.99 fax

Cogswell Polytechnical College
Booth 2109

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+1.408.747.0764 fax
618-3314@mcimail.com
http://www.cogswell.edu

Tim Harrington
Department Chair

Cogswell College offers a comprehensive Bachelor of Arts degree in computer and video imaging. Concentrations are available in character animation, interactive media, digital art (fine and experimental), electronic media, and game design. Courses include: Computer Imaging Concepts, Storyboarding, Computer/Video Production, Drawing for Animation, Natural Kinematics, Sound Design, and Scriptwriting.

Computer Graphics World
Booth 1009

Ten Tara Boulevard
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+1.603.891.0539 fax
http://www.cgw.com

Betsy Quinn
Marketing Communications Manager

Computer Graphics World, a recognized leader in 3D graphics technology since its inception, gives professional animators the critical information they need to do their jobs – with real world application features, technical advice, and product comparisons. Only CGW has been rated SIGGRAPH's Best Read Magazine for more than 10 years.

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inma@comic.es

Inma Blanquer
Director of Marketing & Sales

Jaleo Composite: Requires SGI machines with an R4000 processor and compressed video hardware (Cosmo/Galileo) to input-output video images. Images from other applications can be used. For the first time ever, Jaleo for Impact offers D1 quality uncompressed editing and compositing on a desktop platform (requires HighImact and Ciprico UltraSCSI). Jaleo Plus Real Time: supports uncompressed D1 quality using the Sirius+ disk arrays. Jaleo Compress: the only post-production system that truly integrates editing and compositing for compressed quality video and audio material.

Consan Storage Solutions
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http://www.consan.com

Todd Grimm
Regional Manager

Consan is a nationwide distributor of computer related hardware storage solutions. Products include: high-capacity SCSI disk drives and custom RAID and DLT tape drives and tape libraries. Optical products include: CD-ROM, CD recorders and magneto optical drives as well as CD-ROM towers and CD-recordable juke boxes.

Coryphaeus Software, Inc.
Booth 243

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+1.408.395.6351 fax
marketing@coryphaeus.com
http://www.coryphaeus.com

John Murphy
Vice President of Marketing

Coryphaeus provides industry leaders with real-time 3D graphics software for the visual simulation and entertainment markets. Coryphaeus products simulate real-world performance in synthetic environments and promote high productivity for both engineering and non-programming users, creating interactive instrumentation, out-the-window scenes, virtual reality, and game authoring applications on Silicon Graphics platforms.

Creative Digital Research
Booth 2328

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San Jose, California 95129 USA
+1.408.255.0999
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info@cdrl.com
http://www.cdrl.com

Paula Terrell
Decision Maker

Presenting CDR Publisher cross-platform desktop CD recording software that can be used in Windows, UNIX, and Macintosh environments. All versions of CDR Publisher can create compliant CD-ROMs supporting PC (ISO9660), Unix (Rock Ridge), Macintosh (HFS), and Windows 95 (Joliet) formats integrated on a single CD.

Creative Equipment International
Booth 2644

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cei@gate.net

Dawn Miller
Vice President, Sales

Blossom: finally, an all-inclusive, fully integrated desktop non-linear video editing system that is broadcast quality, powerful, and affordable. Record and edit video, add stunning special effects, create breathtaking 3D animations, overlay professional titling, and precisely mix digital audio. It's all here: the computer, the monitor, the software and hardware, in an easy-to-use package. The Blossom Desktop System, completely configured and ready to plug in and edit.

Crystal River Engineering
Booth 418

4245 Technology Drive
Fremont, California 94538 USA
+1.510.252.4245
+1.510.252.4400 fax
scadet@CRE.com
http://www.cre.com/cre

Stephanie Cadet
Sales Manager

Crystal River Engineering, the technology leader in real-time 3D spatialized audio, exhibits its line of PC and UNIX workstation-based virtual acoustic displays. Crystal River's hardware and software products are used for simulation, entertainment, and training applications as well as artistic and educational exhibits. CRE also demonstrates the Accoustetron II, a turnkey, real-time renderer for use with UNIX or DOS.

CST Entertainment, Inc.
Booth 2419

5901 Green Valley Circle
4th Floor
Culver City, California 90230 USA
+1.310.417.3444
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Jennifer Weinberg
Director, Sales & Marketing

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CTX Opto, Inc.
Booth 2161

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+1.408.541.6060
+1.408.541.6068 fax

Mark Levitt
Marketing Manager

CTX Opto, shows its ultra-light EzPro 500 LCD Personal Projector. Weighing only 9.25 pounds with 270 ANSI lumens of brightness, the EzPro 500 redefines "portable LCD projector." Also featured and available now is the future of desktop, the super flat Pano View series of LCD monitors.

Cyberware
Booth 1730

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Chris Noble
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Datapath Limited
Booth 131

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UNITED KINGDOM
+44.1332.294441
+44.1332.290667 fax
sales@realimation.com
http://www.realimation.com

Brett Butcher
Managing Director

RealiMation is Datapath's virtual reality simulation game and multimedia development toolkit designed to ease creation and development of applications. RealiMation is the first VRSG development system to combine a very powerful delivery API and fully functional space-time editor. Delivery platforms can be anything from high-end games consoles through PCs right up to high-end SGI workstations. Support for a whole host of delivery environments is available. Seeing is believing, so see us at SIGGRAPH 96.

Denim Software
Booth 2261

2459 208th Street
Torrance, California 90501 USA
+1.310.618.9700
+1.310.618.9110 fax
johsie@cc-inc.com
http://www.creativecomputers.com

John Sievers
Director of Marketing

Denim Software presents the World Premiere of Illuminaire, a powerful video painting, compositing, and special-effects program for the PC and Macintosh. The paint capabilities allow for complete control and editing of vector-based graphics over time. The compositor provides editing of clips in a 3D environment for an infinite number of unique special-effects and graphics filtering.

DeskStation Technology, Inc.
Booth 2521

13256 West 98th Street
Lenexa, Kansas 66215 USA
+1.913.599.1900
+1.913.599.4024 fax
mark@dti.com
http://www.dti.com

Mark Jaimes
Business Development Manager, Entertainment

DeskStation Technology manufactures and designs high-performance Windows NT workstations utilizing RISC processors such as MIPS, Pentium Pro, and Dec Alpha. The Raptor Reflex contains an exchangable processor module that can be replaced when faster technology becomes available. At SIGGRAPH 96, we present a technology demonstration of the 500MHZ Alpha processor.

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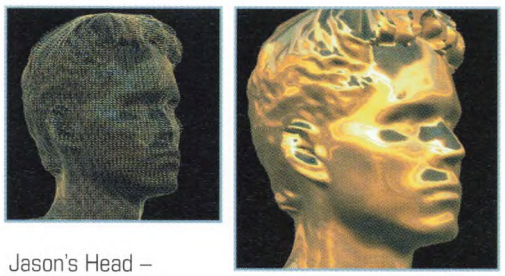
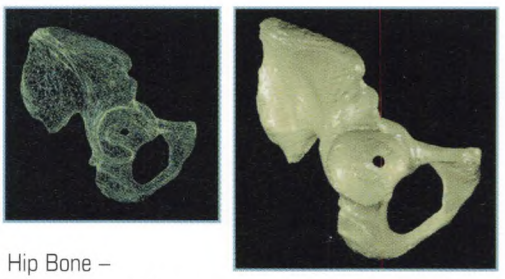
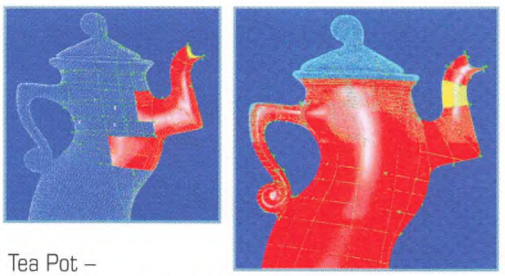


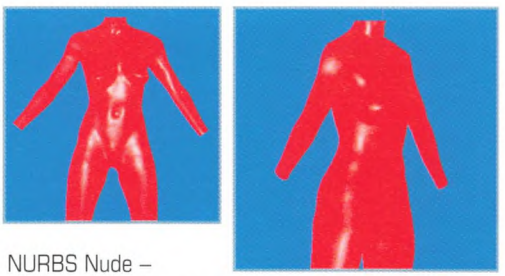
Jason's Head –
Live subject. **Cyberware 3030RGB/PS Scanner**. Converted to DXF. Smoothed and rendered in 3D Studio. 15 minutes.



Hip Bone –
Zippered multiple scans. High resolution polygon model. Rendered in 3D Studio.

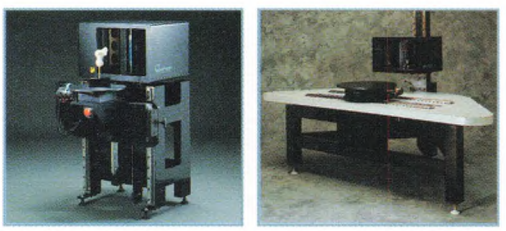


Tea Pot –
Cyberware 3030RGB/MS Scanner. Multiple scans combined into point cloud. Shown is creation of NURBS surface using Imageware's Surfacer.



NURBS Nude –
Live subject. **Cyberware WB4 Body Scanner**. NURBS surface from point cloud. Surfacer software.

Eros Kissing Psychi –
Cyberware 3030RGB/HIREZ/MM Scanner. Polygon mesh surface. Courtesy Archeological Museum of Cyprus, Higher Technical Institute, Hellenistic Period 300 B.C.



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Desktop Engineering Magazine
Booth 2718

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Desktop Engineering focuses on the latest desktop engineering software and hardware systems. Each issue provides extensive product reviews, comparisons, tutorials, technology updates, application stories, product resource guides, and new products.

Desktop Images
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Cheryl Olson
Marketing

Desktop Images produces instructional videotapes for the computer graphics industry. These tapes allow the user to quickly become familiar with programs and concepts, and easily produce professional-quality graphics. We feature professionals currently working in the computer graphics field on such shows as Babylon 5, Hypernauts, seaQuest DSV, Star Trek TNG, and many others.

Diamond Multimedia
Booth 417

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kelliec@diamondmm.com

Kellie Crawley
Trade Show Coordinator

Diamond Multimedia accelerates with exciting solutions that support multiple operating systems, including Windows NT, Windows 95, Windows 3.1, and DOS. See the latest in 3D and 2D graphics acceleration and digital video, complete solutions for CAD, as well as an ISDN solution for high-speed communications.

Diaquest
Booth 1037

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diaquest@diaquest.com
http://www.diaquest.com

Dan Lindheim

Diaquest features 3D/AV, its new Digital Media Production Suite within 3DStudio MAX. 3D/AV integrates high-quality digital audio/video into the 3D animation design process. Also featured: Animaq/Digital, automated image transfer/device control software for leading DDRs via SCSI and Ethernet on Mac, NT, and SGI platforms; and Diaquest's Animaq line of frame-accurate VTR control products.

Digimation, Inc.
Booth 2029

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+1.504.468.5494 fax
sold@digimation.com
http://www.digimation.com

LaVina Larkey
Vice President

Digimation is the world's largest producer and distributor of plug-ins and accessory products for 3D Studio and 3D Studio Max and other 3D applications. Along with their 3D plug-ins, Digimation is also showing World Builder 2.0, a complete stand-alone 3D landscape rendering and animation package for Windows NT.

Digital Compositing Systems, Inc.
Booth 117

3309 Onyx Road
Miramar, Florida 33025-2850 USA
+1.954.438.9541
+1.954.438.9541 fax

Marti G. Moore
Vice President

The Optical Bench is a digital compositor that features a graphical user interface; a visual timeline; support for numerous image formats; glows, blurs, and shadows; an extensive preview system featuring a built-in flipbook and shotbox system, which allows you to create and compare up to five versions of a composited frame; and conditional compositing operations. Added features for '96 include support for Fast Forward Video's BANDIT DDR and added TIF format.

Digital Equipment Corporation
Booth 805

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Jeff Patt
Workstations Marketing Manager

Let Digital show you how Alpha Animates Windows NT. Our Alpha and Intel workstations are ideal for today's leading graphics and animation applications like SoftImage and 3D Studio Max. Our solutions take you from content creation through production. We'll show you how to use the power of Alpha to animate your web pages. Stop by the Proving Ground Cafe for a cup of joe and a talk with our experts.

Digital Processing Systems
Booth 929

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Florence, Kentucky 41042 USA
+1.606.371.5533
+1.606.371.3729 fax
info@dps.com
http://www.dps.com

Brad Nogar
President

DPS showcases its complete line of digital disk recorders for animation and non-linear video editing applications, including a new uncompressed model featuring serial D-1 I/O. The popular DPS Perception Video Recorder featured, along with the new Perception A4V Digital Audio for Video Recorder and the Perception F/X Transition Accelerator card.

Digital Semiconductor
Booth 730

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+1.508.568.6447 fax
http://www.digital.com/info/semiconductor

Marie Palatino
Events Manager

Digital Semiconductor features Alpha systems based on its latest and fastest microprocessors to demonstrate superior performance of the industry's most widely used video and multimedia applications for Windows NT. At booth 730, an Alpha system that breaks the 500MHz barrier squares off against workstations from Silicon Graphics and Intergraph to run Softimage, 3D Studio Max, Lightwave, and other image rendering applications. Adobe Photoshop software is also demonstrated with Digital FX!32 software, which enables Alpha to run all 32-bit x 86 applications.

DIGITAL SIGHT + SOUND INC.
Booth 2423

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+1.214.490.0959 fax
karen@dss.net
http://www.dss.net

Karen W. Sesona
Marketing Manager

DIGITAL SIGHT + SOUND INC. is a full-service systems integrator of high-performance graphics production systems and associated technology (includes installation, training, and support services). Our main goal is to understand our clients' graphics production needs and deliver success with the products and services we provide.

Digital Video Magazine (DV)
Booth 2032

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San Francisco, California 94103 USA
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+1.415.522.2409 fax
candell@dv.com
http://www.dv.com

Cynthia Candell
Director of Marketing

Focused on digital media tools and technology, DV delivers news, product reviews, and technical information to professionals. Whether creating video or audio, authoring CDs or animating for the Web, readers look to DV as the key publication to bridge the gap between video and digital.

Digital Wisdom Inc.
Booth 2750

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David Broad
President

Mountain High Maps sets a new standard in spectacular and accurate relief map graphics for television, video, multimedia, publishing, and animation. Digital Wisdom's graphics are used worldwide in many professional, government, corporate, and educational applications where sharp, dramatic, and accurate presentations are essential. Mountain High Maps CD-ROMs are delivered with a full range of features and tools, including physical and geopolitical information layers, that allow original, dramatic, and completely customizable maps to be generated in Macintosh, Windows, or UNIX environments and used royalty free.

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Head of Digital Film I/O
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Digits 'n Art Software, Inc.
Booth 2529

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+1.514.844.8844 fax
info@DnAsoft.com

Marcel Achard
Coordinator

Digits 'n Art, provider of leading-edge solutions for the next generation high-end 3D animation market, presents the latest version of its award-winning Flesh 3D paint. DnA also introduces Life-Source, an advanced real-time virtual actor system, featuring multiple actors with full-body motion capture (face/hands/body).

DreamWorks Animation
Booth 105

P.O. Box 7304
#132
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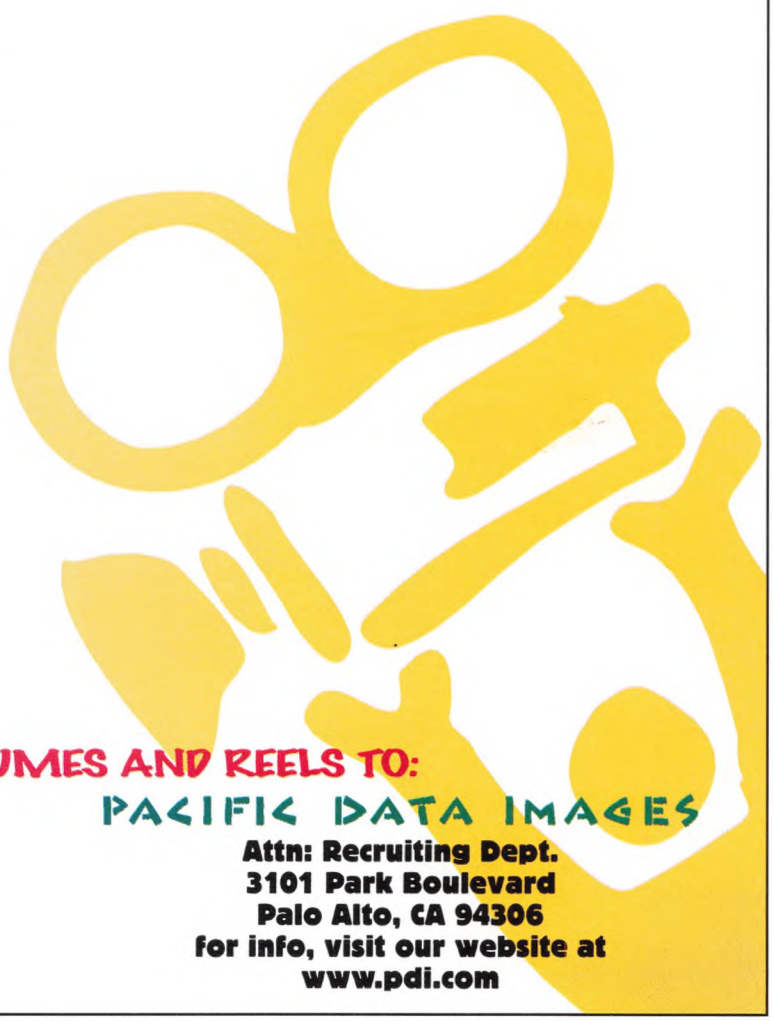

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InSpeck-3D is a color or B/W non-contact optical 3D digitizer that uses a halogen white light source. It can acquire the texture and 3D coordinates of 250,000 points in only 0.3 seconds. A complete 3D model can be obtained by applying an image-merging procedure.

LEGASYS International
Booth 1637

565 Burbank Street
Broomfield, Colorado 80020 USA
+1.303.469.6114
+1.303.469.4699 fax
inquire@legasys.com
http://www.w3net.com/legasys

Sales

At LEGASYS International, our peripheral vision extends to excellence in product quality, service, and ongoing support. LEGASYS offers a full range of disk drives, tape drives, CDs, memory and custom RAID, and video arrays for the Silicon Graphics environment. We back our products with knowledgeable technical support, excellent warranties, and a sales staff trained to answer all of your questions.

Leitch
Booth 444

920 Corporate Lane
Chesapeake, Virginia 23320 USA
800.231.9673
+1.804.548.4088 fax
http://www.leitch.com

Debby Canto
Marketing Specialist

MediaPort PCI board interfaces broadcast-standard digital video and audio to the PCI bus. It provides a CCIR601 input/output interface, two AES/EBU input and output interfaces, and a linear timecode input/output connection. Video is presented to the PCI interface in a full 10-bit uncompressed or JPEG-compressed format.

Lightscape Technologies, Inc.
Booth 212

1054 South DeAnza Boulevard,
Suite 200
San Jose, California 95129 USA
800.343.0073
+1.408.342.1900
+1.408.342.1910 fax
info@lightscape.com
http://www.lightscape.com

The Lightscape Visualization System, a next-generation lighting and visualization tool for SGI and Windows/NT systems, accurately simulates the behavior and physical properties of lights and materials, delivering scenes of unsurpassed realism and real-time interactivity. Lightscape is compatible with a wide range of 3D modeling and animation packages.

Lightwave Communications
Booth 1627

84 Research Drive
Milford, Connecticut 06460 USA
+1.203.878.9838
+1.203.874.0157 fax
sales@lighwavecom.com
http://www.lightwavecom.com

Peter Henderson
Sales Manager

Lightwave Communications, Inc. manufactures video console extension products for high-resolution graphic workstations and switching devices designed to add versatility, increased performance, and security to existing computer systems. Our products provide solutions to numerous physical-layout limitations commonly associated with computer production environments.

LightWork Design Ltd.
Booth 2105

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UNITED KINGDOM
+44.114.266.8404
+44.114.266.1383 fax
alison@lightwork.co.uk
http://www.lightwork.com

Alison Abbott
Sales & Marketing Coordinator

The LightWorks Rendering Engine is a component software library providing high-performance, high-quality, photo-realistic rendering to existing 3D applications. LightWorks offers extensive anti-aliasing controls, procedural shading, ray-tracing, and radiosity rendering, and includes a complete developer's toolkit that enables swift integration into host applications.

Linker Systems
Booth 127

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+1.714.552.1904
+1.714.552.6985 fax
linker@linker.com

Sheldon Linker
Vice President

The Animation Stand is an industrial, broadcast, and film-quality, company-assisted animation production system offering all the sophisticated tools and optical special effects of high-end animation systems at an affordable price. Includes multi-plane camera, paint opticals, transport control, QuickTime Movie creation, alpha compositing, spline-based motion, and much more.

Logitech
Booth 1546

6505 Kaiser Drive
Fremont, California 94555 USA
+1.510.713.4581
+1.510.505.0979 fax
rosemary_gorz@logitech.com

Rosemary Gorz
3D Product Marketing Manager

The Logitech booth features Magellan, the 3D Controller for CAD/CAM and video animation applications. Magellan controls movement of a 3D object in six degrees of freedom on a computer screen. Additionally, a user can move through a virtual reality environment. Magellan is compatible with the most popular CAD applications, including Pro/ENGINEER, Pro/JR, CATIA, IDEAS, and 3D Studio Max.

Lucent Technologies – Software Solutions Group
Booth 403

2701 Maitland Center Parkway,
Suite 200
Maitland, Florida 32751 USA
800.448.6727
800.826.5399 fax
http://www.att.com/mss

Tim May
Product Manager

The Software Solutions Group of Lucent Technologies, formerly AT&T Multimedia Software Solutions, is demonstrating: RIO - broadcast-quality graphics and animation software; Panorama - interactive multimedia authoring tool; RIO Designer - graphics for Windows 3.1, 95 and NT; and RIO Designer Professional - powerful graphics for Windows NT.

Macmillan Computer Publishing, USA
Booth 2457

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+1.317.581.3081
http://www.mcp.com

Macmillan Computer Publishing publishes computer books under the imprints of: Que, Que E & T, Sams Publishing, Sams net, New Riders, Hayden Books, Ziff-Davis Press, The Waite Group, and BradyGAMES, all providing information on the latest technology offered by the constantly growing computer industry. Within the product line, PC and Macintosh users at all levels discover expert advice and tips about desktop publishing/graphics, word processing, databases, spreadsheets, utilities, networking, operating systems, programming online communications, and more.

Macromedia
Booth 2506

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+1.415.626.0554 fax
http://www.macromedia.com

Christine L. Kieffer

Stop by Macromedia's Interactive Theater to see the leading software tools for digital arts, multimedia, and online publishing in action and walk away with a FREE copy of our newest Showcase CD. Macromedia features and demonstrates how to deliver interactive applications over the Internet with our newest product, Backstage, for developing dynamic Web sites. Also shown: Director Multimedia Studio 2.0, featuring Director 5.0 with Shockwave, the most powerful tools for multimedia production; Authorware 3.5 with Shockwave, for interactive information over the Internet; FreeHand Graphics Studio 2.0, with Shockwave, the most powerful tools for graphic design, now featuring Macromedia's new xRes 2.0, the most powerful creative tool for editing, natural texture painting, and compositing images of any size; and Extreme 3D, the most powerful 3D solution for design and multimedia.

Management Graphics, Inc.
Booth 838

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Minneapolis, Minnesota 55425 USA
+1.612.854.1220
+1.612.851.6159 fax
cine-info@mgi.com
http://www.mgi.com

Kristin A. Bergren
Marketing Communications Manager

Management Graphics, Inc. is exhibiting the Solitaire Cine III Image Recorder and the new Cine FLX camera module. Solitaire Image Recorders were used to image all 100,064 frames of the hit movie "Toy Story," and have been used to image futuristic special effects in "Forrest Gump," "The Mask," "Goldeneye," "Jurassic Park," "Terminator 2," and "Batman Forever," among others.

Markee Magazine
Booth 1444

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Sharon Baker
Southeast Account Executive

Markee is edited for the Southeast and Southwest film and video industries, including related crafts, skills, and professions. The magazine is devoted to promoting the regional industry through regular departments that report on activities and projects in commercial and corporate production; features; audio; and management. Each month our Close-Up section features a cross section of the industry.

Matrox Video Products Group
Booth 743

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video.info@matrox.com
http://www.matrox.com/video

Janet Matey
Marketing Manager

Matrox DigiSuite is a family of PCI-bus digital video boards and Windows NT software tools that provide a high-powered, open-architecture platform for broadcast, cable, and post-production applications including: nonlinear editing, character generation, 3D animation recording, video paint and still-image storage.

Maximum Strategy, Inc.
Booth 411

801 Buckeye Court
Milpitas, California 95035-7408 USA
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+1.408.383.1616 fax
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http://www.maxstrat.com

Sandy Staufenbeil
Manager, Marketing Communications

Maximum Strategy provides a family of high-performance, large-capacity, open storage systems. Multiple heterogenous computer servers can be supported from one single Maximum Strategy storage server with ease through scalable capacity and centralized data management, while delivering unparalleled performance.

Media 100/Data Translation
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Paula Ploetz
Senior Marketing Communications Specialist

Come learn about Media 100, today's fastest-growing family of digital video systems. A quick seminar introduces you to our world-renowned pristine images (300 KB/frame NTSC), real-time functionality, ease of use, and price/performance. Our QuickTime-based open system allows animators, graphic artists, multimedia creators, and video producers the flexibility to build broadcast-quality programs with ease.

Mediascape Corporation
Booth 2010

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+1.810.540.2251
+1.810.540.2253 fax
hcl@medias.com
http://www.medias.com/mediascape

Howard Luby
President

Mediascape introduces a major new release of Artstream: version 2.0. This release harnesses the performance of OpenGL-accelerated hardware and provides a new Keystone-compliant interface. These improvements combine to bring a new level of performance and ease of use to the graphic design market. See how easy complex and colorful page layout and illustration can be with Artstream 2.0.

MegaDrive Systems, Inc.
Booth 2055

489 South Robertson Boulevard
Beverly Hills, California 90211 USA
+1.310.247.0006
+1.310.247.8118 fax
sales@megadrive.com
http://www.megadrive.com

MegaDrive Systems, Inc. demonstrates high-speed, high-capacity storage systems for use with corporate video, prepress, Internet server storage, or multimedia publishing. New at SIGGRAPH 96: UltraSCSI and 200MB/second full-duplex fibre channel-based product offerings. MegaDrive storage systems are compatible with Macintosh/Power Macintosh and PC computers, as well as workstations from Silicon Graphics, Sun, IBM RS/6000, and DEC Alpha.

MetaTools, Inc.
Booth 617

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+1.805.566.6385 fax
metasales@aol.com
http://www.metatools.com

Michelle McCarthy
Manager, Tradeshows & Events

MetaTools, Inc., the Visual Computing Software Company, designs, develops, publishes, markets, and supports software tools and enabling technologies for creating, editing, and manipulating computer graphic images, digital art, and Internet/online content for Windows, Macintosh and other computing systems. MetaTools recently announced Kai's Power Goo, the first in a series of creative entertainment tool products for consumers. MetaTools' award-winning line of digital imaging products includes Kai's Power Tools, Final Effects for Adobe After Effects, Final Effects AP for Adobe Premiere, Bryce, Convolver, Vector Effects Gradient Designer fx, and the Power Photos collection.

mFactory
Booth 2650

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+1.415.548.0600
+1.415.548.9272 fax
info@mfactory.com
http://www.mfactory.com

Bernard Camarao
Marketing Events Specialist

mFactory is a provider of professional multimedia authoring tools based on advanced object-oriented technology. mFactory's flagship product, mTropolis v1.1, is an intuitive authoring environment for creating and distributing sophisticated, highly interactive multimedia applications that can be delivered across multiple platforms, CD-ROM formats, and the Internet.

MicroNet Technology Inc.
Booth 1943

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Irvine, California 92618 USA
+1.714.453.6000
+1.714.453.6071 fax
michelle@micronet.com
http://www.micronet.com

Michelle Mehterian
Marketing Services Manager

MicroNet introduces the DataDock 7000, the next generation of award-winning RAID storage designed for the demands of the video, graphics, and animation industries. MicroNet is also showing DataDock, its premier removable, transportable, and scalable storage system that incorporates hard drives, optical, Jaz, and DAT technology.

Microsoft
Booth 723

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Kate Seekings

Visit the Microsoft booth to discover the hottest interactive graphics technologies from Microsoft and key hardware and software partners. You'll see stunning ActiveX, DirectX, and OpenGL applications for Windows 95, Windows NT, and the Internet powered by the latest hardware. Interact with our expert staff to learn how you can catch our PC graphics wave!

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Daniella Seghieri
Marketing Events Assistant

Miller Freeman, Inc. is the world's largest publisher of technical magazines. Its properties include: *AutoCadTech Journal,3D Design, C/C++ Users Journal, Cadence, Circuits Assembly, Communication Systems Design, DBMS, Database Programming & Design, Dr. Dobbs Journal, Embedded Systems Programming, Game Developer, InterActivity, Interoperability, Keyboard, LAN Magazine, Mathematica Journal, Microsoft Systems Journal, Network Var, OS/2 Magazine, Printed Circuits Design, Printed Circuits Fabrication, Software Development, Sys Admin, UNIX Review, Virtual Reality Special Report, Windows Developers Journal,* and *Web Techniques*. All focus on the latest technologies and practical applications. Visit our booth for discounted subscriptions and complimentary issues.

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http://www.mce.com

John Mc Farland
Vice President

Minicomputer Exchange is a used computer dealer. We sell, buy, rent, and repair Sun and SGI workstations, peripherals, and boards. We were established in 1973 in California's Silicon Valley and have been dealing in Sun and SGI workstations since they first appeared. Services include:120-day warranty, technical service, fast delivery, and worldwide shipment.

Minolta Corporation
Booth 2443

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+1.201.825.4000
+1.201.825.4374 fax
mrepici@minolta.com

Maria Repici
Marketing Manager

Minolta Corporation introduces its VIVID 700, 3D non-contact digitizing camera. With zoom and auto focus functions, the portable, high speed VIVID 700 allows you to capture 3D digital data on a PC. Also on display: Minolta's RD-175 digital camera, color copier/printer, and 35mm film scanner, plus instruments to measure, match, and formulate color.

Miranda Technologies Inc.
Booth 1756

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St. Laurent, Québec H4S 1S4 CANADA
+1.514.333.1772
+1.514.333.9828 fax
marketing@miranda.com

Kevin Lu
Director - International Sales

Miranda Technologies is a leader in the field of professional digital video imaging and video interfaces such as encoders, decoders, D-to-A and A-to-D converters, digital video serializers and de-serializers, and a number of products that provide professional digital video interface to all computer platforms from PC to high-end video.

Mitsubishi Electronics America, Inc.
Booth 2305

1050 East Arques Avenue
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+1.408.732.9382 fax
shill@msm.mea.com

Sherry Hill
Communications Manager

Mitsubishi Electronics America, Inc. attacks advanced graphics on a broad front by demonstrating the latest technologies for visual computing. See our state-of-the-art, high-end 3D graphics memory and rendering solutions, compression, and display technologies.

MMS Multi Media Systems GmbH
Booth 912

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+49.511.678070
+49.511.630070 fax
Spoer@DVS-Hannover.de
http://www.multimediasystems.de

Peter Spoer

MMS manufactures high-end digital video processing and recording systems for post production, computer video, and broadcast applications: PRONTO/Video - D1/4:2:2 uncompressed video disc recorder; PRONTO/Video-RGB - D1/4:4:4:4 RGB video disc recorder; PICO/Video - M/JPEG-compressed disc recorder; SCSI/Video - D1/4:2:2 to SCSI Interface with M/JPEG MOVIE/Video - Multistandard RAM Recorder; Sphinx3D - 3D Modeling Software Package.

Montpellier Technopole
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http://www.mkp.com

Julie Ahern
Marketing Assistant

This year we're featuring *Corner: A Trip Down the Graphics Pipeline* by Jim Blinn; *Wavelets for Computer Graphics: Theory and Applications* by Eric Stollnitz, Tony DeRose, and David Salesin; and the innovative *Interactive Curves and Surfaces, A Multimedia Tutorial on CAGD* by Alyn Rockwood and Peter Chambers.

Motion Analysis Corporation
Booth 1856

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Santa Rosa, California 95403 USA
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info@macorp.com
http://www.crl.com/~macorp

Betty Cenica
Sales Administrator

Motion Analysis Corporation is the world's largest provider of optical-performance capture systems to the games, broadcast, and film industries. Systems are available for 3D full-body and face capture, and 2D real-time face capture for "virtual hosts." Systems are offered in a wide price/performance range. Installation, training, and support are provided.

MultiGen Inc.
Booth 1929

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San Jose, California 95128 USA
+1.408.261.4100
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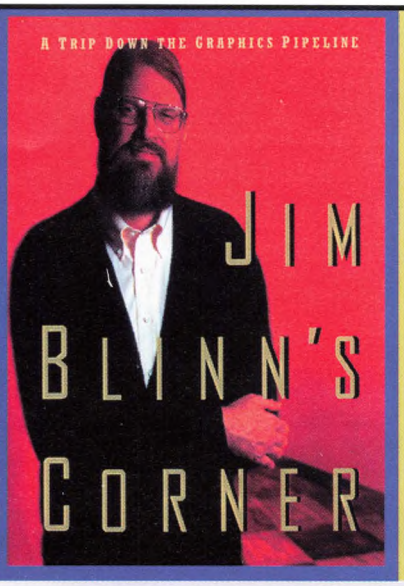
jgodsil@multigen.com
http://www.multigen.com

Juli Godsil
PR/Events Coordinator

MultiGen develops the leading real-time 3D authoring software toolset for visual simulation, entertainment and CAD visualization applications. MultiGen products are used to create, edit, optimize, and view realtime 3D scenes for implementation on any hardware platform. At SIGGRAPH 96, MultiGen features SmartScene, MultiGen II Pro, and GameGen II, plus a networked DIS demonstration in collaboration with strategic partners.



Meet The Master

Jim Blinn will sign copies of his new book at SIGGRAPH on Wednesday afternoon at Morgan Kaufmann booth #1611

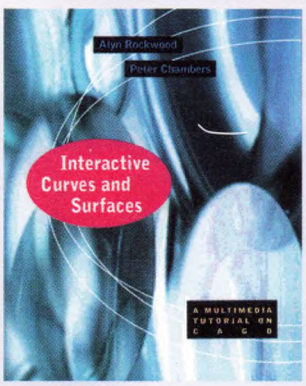
Jim Blinn's Corner: A Trip Down the Graphics Pipeline

by Jim Blinn, Microsoft Research

Eminent computer graphicist Jim Blinn has coupled his scientific knowledge and artistic abilities to foster the growth of the computer graphics field. This book, a compendium of 20 articles from his column in *IEEE Computer Graphics and Applications,* leads you through the "graphics pipeline" offering a wealth of tips and tricks. In his entertaining and inspirational style, Blinn explores a variety of topics to help computer graphics software and application developers recognize and solve graphics programming problems. Focusing on geometry and the graphics pipeline he shares:

- interesting algorithms for clipping, viewing, lighting, and rendering
- explanations of difficult concepts gleaned from years of teaching
- examples of tricky special cases that cause conventional algorithms to fail

1996; 300 pages; paper; ISBN 1-55860-387-5; $34.95



Interactive Curves and Surfaces: A Multimedia Tutorial on CAGD

Alan Rockwood, Arizona State University and Peter Chambers, VLSI Technology, Inc.

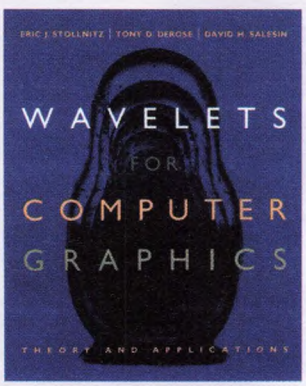
This interactive software/book tutorial teaches foundational CAGD concepts and discusses fast-growing applications in such areas as geological and molecular modeling, commercial advertising, and animation. Using interactive examples and animations to illustrate the mathematical concepts, this hands-on multimedia tutorial enables users who may not have a substantial mathematical background to quickly gain an understanding of CAGD.

1996; approx 200 pages; paper; 3.5" disks for windows; ISBN 1-55860-405-7; $59.95

Introduction to Data Compression

Khalid Sayood, University of Nebraska, Lincoln

1996; 475 pages; cloth; ISBN 1-55860-346-8; $69.95



Wavelets for Computer Graphics: Theory and Applications

Eric J. Stollnitz, University of Washington, Tony D. DeRose, Pixar Animation Studios, David H. Salesin, University of Washington

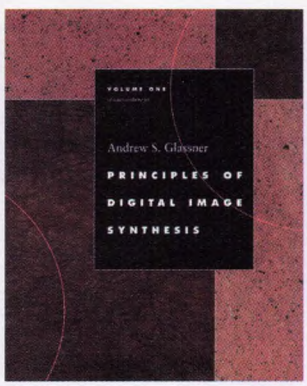
Stressing intuition and clarity, this distinctly accessible introduction to wavelets provides graphics professionals and researchers with the mathematical foundations for understanding and applying this new and powerful tool. This book focuses on a generalized theory that naturally accommodates the kinds of objects that commonly arise in computer graphics, including images, open curves, and surfaces of arbitrary topology.

1996; approx 250 pages; cloth; ISBN 1-55860-375-1; $49.95

Radiosity and Global Illumination

Francois Sillion and Claude Puech

1993; 251 pages; cloth; ISBN 1-55860-277-1; $49.95



Principles of Digital Image Synthesis

Andrew S. Glassner, Microsoft Research

This sweeping work provides an introduction to the human visual system, digital signal processing, and the interaction of matter and energy. Glassner demonstrates how these disciplines are elegantly orchestrated into modern rendering techniques such as radiosity and ray tracing.

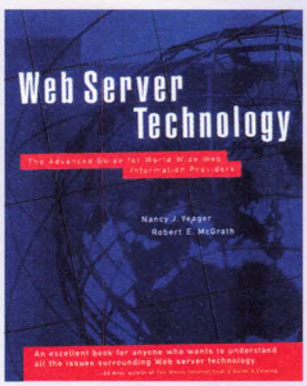
1995; 1600 pages/2 volumes; cloth; ISBN 1-55860-276-3; $89.95

Readings in Human-Computer Interaction Toward the Year 2000, Second Edition

Written and edited by Ronald M. Baecker, Jonathan Grudin, William Buxton, and Saul Greenberg

The latest in HCI; hypertext, multimedia, GUIs, and more... Combines reprints of key articles and case studies with synthesizing survey material and analysis by the editors.

1994; 950 pages; paper; ISBN 1-55860-246-1; $59.95



Web Server Technology: The Advanced Guide for World Wide Web Information Providers

Nancy J. Yeager and Robert E. McGrath, National Center for Supercomputing Applications

This authoritative presentation of Web server technology takes you beyond the "how-to" guides to provide an understanding of the underlying principles and technical details of how Web servers work. Architects of the award-winning NCSA WWW service, the authors share the experience and insight they've gained by establishing and maintaining one of the most popular sites on the Web.

1996; 428 pages; paper; ISBN 1-55860-376-X; $34.95

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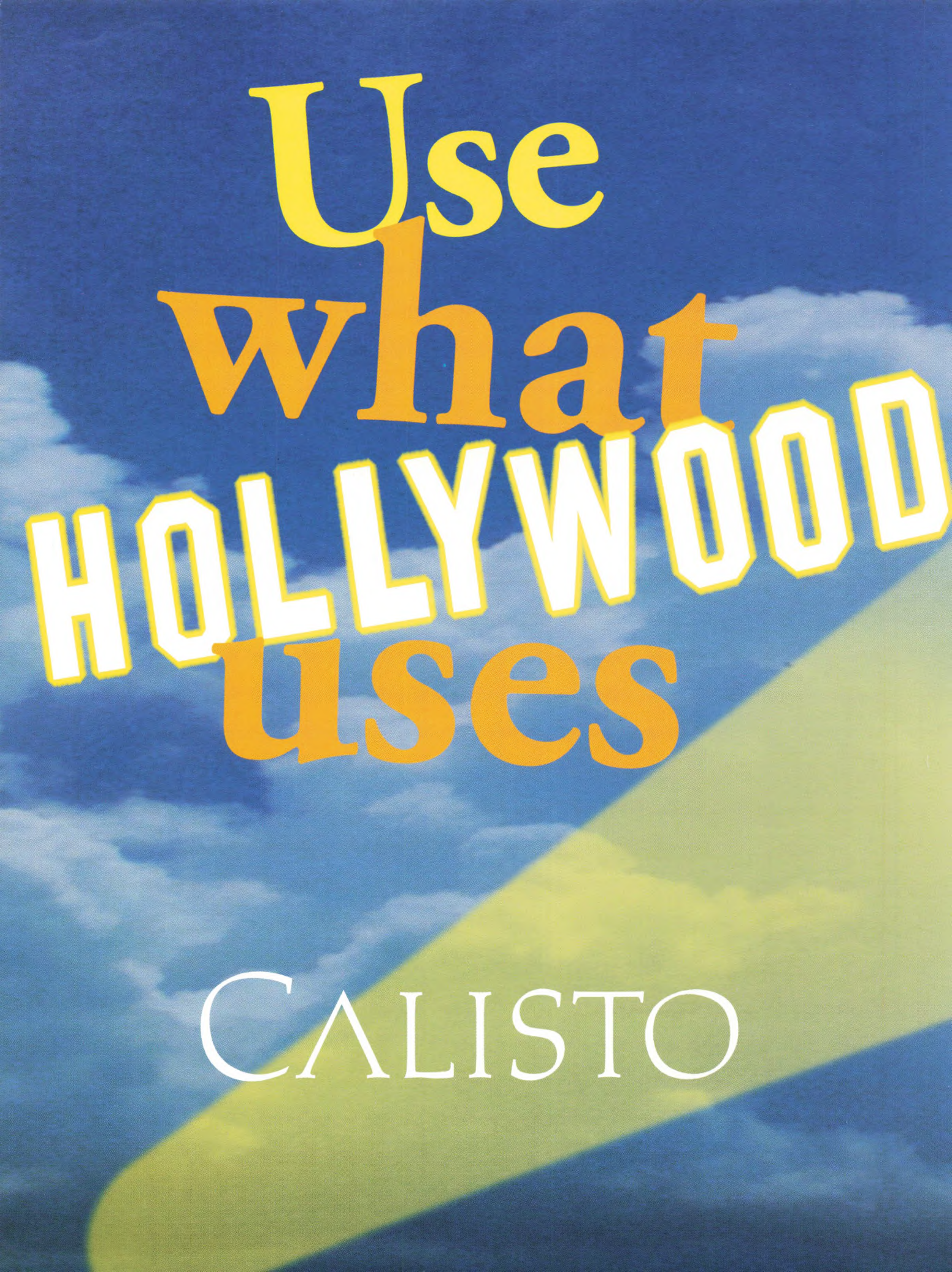
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Arlan Andrews, Sr.
Vice President

Multidimensional, user-oriented Synthetic Environment, MuSE (pronounced "muse"): a software shell that "wraps around" data, models, simulations and programs. Device independent, it supports head tracking, speech synthesis, voice recognition, data sonification, flat screen, projection TV, BOOM, 3D, VR, and "Millennium Shared Worlds" venues. Customers: NASA, DARPA, US Air Force, US Navy, and industry.

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Brian Benner
Marketing/Public Relations
Coordinator

Mutoh America Inc., a leader in the design and manufacture of computer peripherals, offers a complete line of large format graphic printers and cutting plotters.

NEC Electronics Inc.
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http://www.nec.com

Kathy Lomeli
Senior Marketing Communications
Specialist

NEC Electronics Inc. offers an extensive line of electronic products including displays, microprocessors, memories, ASICs, and graphic accelerator chips for high-performance and multimedia applications. NEC is a leading semiconductor supplier in the United States and is an affiliate of NEC Corporation, a $43 billion international manufacturer of computer, communications, and semiconductor products.

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Patti Kunsman
Business Development Programs
Manager

NeTpower, Inc., a systems hardware company exclusively focused on Windows NT, offers systems spanning 3D workstations to multi-processor servers along with services and software. NeTpower, highly focused in video, MCAD, and Web applications, offers UNIX performance at half the price through offices in California and worldwide.

NewTek, Incorporated
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Kathryn Ewing
Trade Show Manager

NewTek, Incorporated is featuring LightWave 3D, the Emmy Award-winning modeling, animating, and rendering software used on shows such as "James Bond: Golden Eye," "Star Trek: Voyager," "Deep Space 9," "Babylon 5," "Space: Above and Beyond," and "The Blue M&M's." LightWave is available for Windows 95, Windows NT (Alpha, Intel, MIPS), Silicon Graphics, Amiga, and soon for Power Macintosh. NewTek is also showing its digital video suite with the Video Toaster and the Video Toaster Flyer.

NHK HDTV GROUP
Booth 2355

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hachiya@hi-vision.nhk.or.jp
http://www.nhk.or.jp/hi-vision/

Hideo Nakazawa
Senior Director

NHK is exhibiting the newly-developed Stereoscopic HyperReal Museum: HDTV images at 120 Hz in a system that lets you interactively enjoy valuable art works. The latest HDTV CG artworks in Japan are also being shown on screen.

NICOGRAPH Association
Booth 1019

1-3-1 Uchikanda
Chiyoda-ku, Tokyo 101 JAPAN
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+81.3.3233.3450 fax
http://www.nikkei.co.jp/events/
digital-mw/

Hidekata Ando
International Department

Nippon Computer Graphics Association, MMA, and NIKKEI will hold NICOGRAPH '96 from 20 to 22 November at Makuhari Messe, Japan. The Multimedia '96 convention will also be held at the same time. NICOGRAPH Association has been organizing the NICOGRAPH Convention since 1982, and NICOGRAPH has become the most comprehensive exhibition and conference for computer graphics in Asia. NICOGRAPH '96 will showcase the astonishing growth of computer graphics techniques applied to manufacturing, education, entertainment, and broadcasting.

Nichimen Graphics, Inc.
Booth 1130

12555 West Jefferson Boulevard,
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Los Angeles, California 90066 USA
+1.310.577.0500
+1.310.577.0577 fax
navachm@nichimen.com
http://www.nichimen.com

Matt Navach
Marketing Manager

N-World is an integrated environment for creating 3D interactive game content, with tools for modeling, skeletal animation, motion editing, animation, 3D paint, color reduction, and more. Preview on and export to the Sony PlayStation, Sega Saturn, Nintendo64, and PC. N-World is extensible and available as an integrated suite or individual modules.

Northern Digital Inc.
Booth 2139

403 Albert Street
Waterloo, Ontario N2L 3V2 CANADA
+1.519.884.5142
+1.519.884.5184 fax
sales@ndigital.com
http://www.ndigital.com

Chris Hockey
Software Manager

Northern Digital Inc. produces the OPTOTRAK, a system that tracks 3D movement of active markers on a subject and relays real-time 3D data to your own computer. Hundreds of OPTOTRAK's are used worldwide in bio-mechanics and surgery as well as in commercial applications including virtual reality, robotics, and aeronautics.

Numerical Algorithms Group, Inc.
Booth 412

1400 Opus Place, Suite 200
Downers Grove, Illinois 60515-5702
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+1.708.971.2337
+1.708.971.2706 fax
naginfo@nag.com
http://www.nag.com

Kierith Ferrara-Kurth
Marketing Manager

NAG demonstrates IRIS Explorer release 3.0, the object-oriented visualization package and application development system. Designed for top-quality performance in distributed processing environments or individual workstations, IRIS Explorer is valuable for many scientific, engineering, and research applications. Available for popular workstation environments and Windows NT.

NVision, Inc.
Booth 2324

222 West Las Colinas Boulevard
Suite 2030
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+1.214.432.8104 fax
nvision@ix.netcom.com
http://www.pic.net/nvision

Steven E. Kersen
Vice President of Marketing

The Digibot II laser scanning system automatically transforms physical models into flawless, high-resolution computer models quickly and easily. Digibot models export to all of the popular 3D animation and CAD/CAM products. The system is used extensively in animation, reverse engineering, rapid prototyping, and inspection/gaging.

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DATE : November 20(Wed.) – 22(Fri.), 1996

VENUE : Nippon Convention Center (Makuhari Messe)
Chiba-City, *JAPAN*

ORGANIZED BY : Nippon Computer Graphics Association(NICOGRAPH)
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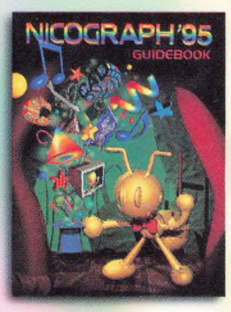

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O'Reilly and Associates, Inc.
Booth 438

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lynn@ora.com
http://www.ora.com/

Lynn Powell
Trade Show Producer

O'Reilly and Associates is recognized worldwide for its definitve books on the Internet and UNIX. In the past three years, the company has expanded into other Internet-related endeavors, developing online content and software, and conducting market research on the online services market.

Odyssey Productions
Booth 107

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+1.619.793.1942 fax
odyssey@odyssey3d.com
http://www.odyssey3d.com

Adrian Turcotte
Executive Producer

Come see a sneak preview of the new "Mind's Eye" video, "Odyssey Into The Mind's Eye," and buy your own pre-release copy. Also available: the new "Computer Animation Festival," as well as "The Mind's Eye", "Beyond the Mind's Eye," "The Gate to the Mind's Eye," "Computer Animation Festival, Vol. 1 & 2," and "Imaginaria". Get a free CD-ROM with every purchase!

Omnicomp Graphics Corporation
Booth 2361

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omnicmp@phoenix.net
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Kelly D. Stuart
Vice President of Marketing & Sales

Hardware manufacturer of 3D graphics accelerator boards for the PCI Bus. The 3DEMON family of 3D accelerator boards is designed with the award-winning GLiNT and GLiNT Delta processors from 3Dlabs and optimized for OpenGL and HEIDI on Windows NT and Windows 95. Certified on all major animation and CAD applications.

Omniview, Inc.
Booth 2754

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Knoxville, Tennessee 37931 USA
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hobbsb@omniview.com
http://www.onmiview.com

Brad Hobbs
Director, Business Development

Omniview, Inc. manufactures patented PhotoBubbles interactive images that allow the viewer to be positioned inside a spherical 360-degree digital image. PhotoBubbles join fisheye photography and Omniview's software technology to create totally immersive, interactive experiences.

Onyx Computing, Inc.
Booth 1532

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Cambridge, Massachusetts 02138 USA
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http://www.onyxtree.com

Pjer Zanchi
General Manager

Trees are alive! Trees finally come to life with the new breakthrough product: TREE EIAS STORM. Make trees shimmer on the breeze and bend under stormy winds. Onyx Computing is also exhibiting the new 4.0 version of TREE PROFESSIONAL. Major new features include new parametric algorithms for realistic trunk shapes and bonsai curving, new leaf structures for application of real leaves, chain saw pruning, etc. Bundled with TREE PROFESSIONAL, TREE PAINTER and TREE EIAS are the libraries of over 200 already-modeled, biologically accurate, broadleaf and conifer trees, palms and bushes, and fantastic trees, all ready to be exported or modified.

Orphan Technologies
Booth 2344

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orphan@ivnet.com
http://www.prarienet.org/orphan/

Sherry Alvarado
Research Director

Orphan Technologies is a research and development company specializing in PowerPC-based digital imaging processing and analysis. Orphan Technologies is demonstrating StereopSys, which contains a new algorithm for stereo matching and tools for 3D multimedia content editing. Also exhibited: PanDC, an inexpensive digital stereo panoramic camera system.

Oxberry LLC
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James Aneshansley
Vice President of Sales and Marketing

Oxberry Cinescan motion picture scanners are the number-one installed systems worldwide. Cinescan is an open-architecture, resolution-independent scanner produced in a variety of sizes from high-speed, medium-resolution scanners for video and 16mm production up to high-resolution, highly dynamic range scanners for "big-screen" feature production. All scanners are equipped with pin-registered dry and wet gates.

P.E. Photron
Booth 1528

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San Jose, California 95117 USA
+1.408.261.3613
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tak@photron.com
http://www.photron.com

Tak Takimizu

Photron is showing the Chromakey Compositing Software "PRIMATTES-100". The PRIMATTE algorithm is a revolutionary concept in image compositing, providing advanced techniques for extremely fine manipulation of color regions not previously possible using conventional chromakey techniques. It is available as a Stand Alone product and as a plug-in for A/W Composer, Kinetix 3D Studio Max, Discreet Logic FLAME/FLINT/INFERNO and Avid Illusion/Matador. Also the PRIMATTE pro-100, realtime Video Chromakeyer, and the DVDA-3, Digital Video Disk Array.

Pacific Data Images
Booth 103

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http://www.pdi.com

Abby Letteri
Director of Marketing

PDI's pioneers in computer animation are experts in storytelling with 3D characters and creatures, digital visual effects, and CG lighting. We are recruiting talented CG professionals to join our studio. Current projects include a computer-animated feature co-produced with DreamWorks SKG and several feature and commercial animation/effects projects.

Panasonic Broadcast & Television Systems Company
Booth 2630

One Panasonic Way
Secaucus, New Jersey 07094 USA
+1.201.348.7000

Rick Albert
Product Marketing Manager

Postbox: non-linear edit system, real-time effects, complete CG & paint, an all-in-one workstation solution. DVCPro: digital video recording equipment, cost-effective digital acquisition and production system. DVDR: digital video disc recorder utilizing DVCPro digital technology.

Paradigm Simulation, Inc.
Booth 1949

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http://www.paradigmsim.com

Laura Bush
Marketing Associate

Paradigm is the world leader in software development tools for real-time, 3D, visual, and audio applications. Vega is Paradigm's next-generation, fully integrated software system for rapid development of highest-performance, real-time simulation, virtual reality, and visualization applications. AudioWorks2 makes it easy to add continuous, real-time 3D processing of multiple independent moving sounds.

ParaGraph International
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Tatiana Kvitka
Communication Manager

ParaGraph International is a leading provider of Internet VRML tools, combining leading-edge technologies in 3D rendering, behavior languages, compression, and recognition to enable users to build exciting Internet spaces and visit and communicate with each other. ParaGraph's Virtual Home Space Builder is the simplest VRML authoring software available.

Parallax Graphics, Inc.
Booth 737

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http://www.parallax.com

Sales

Parallax invites software developers to test-drive our cross-platform development tools and high-performance digital video products, including new options for Windows NT users. Applications include frame-accurate video capture, Internet video distribution, animation, videoconferencing, and multiple simultaneous displays at 640x480 resolution, with 24-bit true-color and optional JPEG codec.

Parallax Software
Booth 1805

See Avid Technology, Inc.

Parity Systems Inc.
Booth 2011

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Los Gatos, California 95030 USA
800.514.4080
+1.408.378.1022 fax
inquire@parity.com
http://www.parity.com

Robbi Robinson
Marketing Manager

Parity Systems Inc.: The Data Management Company. Systems integration solutions for data management. Software integration components: visual asset, disk space, relational database, and network management; backup/restoration; and CD-ROM recording. Hardware integration components: automated tape and optical libraries, RAID, memory upgrades, Ethernet and ATM network equipment, and more.

PC Graphics & Video Magazine
Booth 1810

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+1.714.513.8612 fax
http://www.pcgv.com
http://www.ntstudio.com

Jerry Matthews
Promotion Coordinator

PC Graphics & Video is the leading Windows publication for creative media. Each month the magazine delivers focused editorial and the latest technology news and information to an audience of multimedia and graphics professionals. At SIGGRAPH 96, PC Graphics & Video introduces NT STUDIO, the magazine for professional digital content production, broadcast video, animation, and interactive media. Sign up for free subscriptions to both magazines or visit our Web sites for more information.

PC Video Conversion
Booth 2330

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+1.408.279.6105 fax
sales@pcvideo.com
http://www.pcvideo.com

Daryl Manning
Marketing/Communications

PC Video Conversion designs and manufactures high-quality products that easily and inexpensively bridge the worlds of computing and broadcast media. Products include HyperConverter, broadcast-quality, high-resolution scan converters compatible with PC, Mac, Sun, HP, SGI, etc. New products: Doubler scan doubler, Concorde standards converter, and Transcorder high resolution graphics recorder.

PCI–Silicon Graphics World
Booth 2437

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http://www.pcinews.com/pci

Gary Pittman
Sales Manager

Silicon Graphics World is a monthly news source dedicated to providing independent coverage of the entire Silicon Graphics computer system line. The publication includes user profiles and technical articles as well as news and new-products information.

Pixar Animation Studios
Booth 1911

1001 West Cutting Boulevard
Richmond, California 94804 USA
+1.510.236.4000
+1.510.236.0388 fax
http://www.pixar.com

Joy Gipson
Marketing Communications Manager

Pixar is an Academy Award-winning computer animation studio that is building its future by attracting the finest animators and technical artists. Information on employment opportunities and demonstrations of Pixar's RenderMan Artist Tools, tools designed to bring the full power of RenderMan to a production facility, are featured in the Pixar booth.

PIXIBOX-PEGS
Booth 1345

26, rue Berthollet
94110 Arcueil, FRANCE
+33.1.49.85.42.06
+33.1.49.85.16.96 fax

Tigran Bejanov
International Sales Manager

PEGS is a cartoon software designed to offer animation studios more efficiency in the production of cartoon series, from the drawing input stage to video or 35mm output. It offers automatic scanning, assisted painting, 255 independent layers, all camera motions, multiplans, special effects, and production follow-up.

Play Incorporated
Booth 2315

2890 Kilgore Road
Rancho Cordova, California 95670-6133
USA
+1.916.851.0800
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trinityinfo@play.com
http://www.play.com

Trinity is a real-time, PC-based video production system that includes a 10-input switcher, timeline-based editor, two channels of digital video effects, a 4 ns character generator, a paint and animation graphics system, dual channel still store, chroma keyer, digital audio mixer, color effects processor, and two time base correctors. Trinity performs unique real-time digital video effects such as warping video onto 3D shapes, with virtual light sources, shadows, and reflections.

Polhemus
Booth 1705

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Colchester, Vermont 05446 USA
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Kim Jennings
Marketing Assistant

Polhemus is the pioneer in 3D motion-capture systems. Now appearing at the POLHEMUS HUMANIMATION THEATER: Star Trak. Only the Academy Award-winning team at Polhemus could bring you the Star Trak wireless motion-capture system...and only Star Trak can capture multiple characters in real time, in an amazing 43,000 cubic-foot volume. See why Polhemus has been chosen by industry leaders to provide them with a competitive advantage.

Portable Graphics, Inc.
Booth 1829

3006 Longhorn Boulevard, Suite 105
Austin, Texas 78758 USA
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info@portable.com
http://www.portable.com

Lynn DiSanto
Account Manager

Portable Graphics demonstrates a suite of powerful 3D graphics development and porting tools for UNIX workstations and PCs. New for 1996: OpenGL and Open Inventor 2.1.1 for HP 9000 graphics workstations; Open Inventor 2.1.1 for Windows NT/Windows 95; and Open Inventor 2.1.1 for Sun Ultra, Digital AlphaStation and IBM RS/6000.

Positron
Booth 2332

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Omaha, Nebraska 68154 USA
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+1.402.493.6254 fax
positron@radiks.net
http://www.3dgraphics.com

Carrie Haubensak
Marketing Manager

Positron produces the world's first real-time 3D paint program for the Mac and PC: MeshPaint 3D. Simply load a 3D object, position it, and begin painting directly on the object's surface. MeshPaint 3D puts all of today's most advanced digital painting features at your fingertips. Our exclusive PolyMap feature can unwrap a 3D object into 2D space by drawing an outline for every polygon. MeshPaint 3D is available for Intel, DEC Alpha, Mac, and PowerMac processors.

POST Magazine
Booth 2262

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Kathy Vanella
Advertising Account Manager

POST Magazine focuses entirely on post production with news and features on editing, graphics, animation, and special effects. It spotlights equipment and services at various budget levels that create the best finished product.

Pre/Folio/Digital Creativity
Booth 2338

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http://www.mediacentral.com

Roberta Thomas
Publisher

Pre is the magazine of prepress and prepublishing solutions. *Digital Creativity* is the source of information for the imaging, graphics, and design professional. *Folio* is the magazine for the magazine publishing professional.

Professional Marketing Services, Inc.
Booth 2308

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Maggie Doehnert
Sales Operations Manager

Services include integration of new and used digital imaging VAR's/dealers/brokers of drum, slide and flatbed scanners, film recorders, color laser copiers, electrostatic/ink jet plotters, dye sublimation/printers, optical/duping cameras, slide mounters, imagesetters, photo retouching and restoration workstations, software, and Imapro complete digital retouching systems.

ProMax Technology
Booth 2117

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http://www.scsidisk.com

Charles F. McConathy
President

ProMax Technology is a leading developer of high-performance data storage systems that have been optimized for digital video, pre-press, and graphic design. Systems are compatible with Power Macintosh and Windows. Capacities range from 2 GB to 144 GB in desktop or rack-mountable cabinets. ProMax was the first to develop disk arrays using Iomega's cost-effective, removable-cartridge Jaz drive. In addition to video storage systems, ProMax ships fully configured non-linear digital video editing systems using solutions from Truevision, Miro, Fast, Data Translation, and Radius.

Proxima
Booth 1924

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http://www.prxm.com

Janice Kall
Trade Show Manager

Proxima Corporation introduces the high-resolution Desktop Projector 9100, which is compatible with workstations, PCs, and Macs, and displays resolutions up to 1280 x 1024. Proxima also introduces the Desktop Projector 4100, a data and video projector based on Texas Instruments DLP technology with phenomenal image quality. Both units incorporate Adobe Acrobat Player software from Adobe Systems in the optional MediaExpress system, which allows users to project Acrobat PDF files without a computer.

Pthalo Systems, Inc.
Booth 2049

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Frannie Titosky
Manager, Communications and Marketing

Pthalo Systems Inc. designs and manufactures high technology products for the arts and entertainment markets worldwide. At SIGGRAPH 96, Pthalo Systems is introducing the Verite Digital Film System. Verite offers five-frame-per-second scanning and recording of all common 35 mm film formats. The system is pin registered and offers up to 14 bits per color.

PWS Publishing Company
Booth 2312

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http://www.pws.com/pws.html

Nathan Wilbur
Market Development Manager

PWS Publishing Company develops textbooks and software products for college- and graduate-level courses in computer science, general engineering, electrical and computer engineering, and engineering graphics. PWS is proud to display the student edition of VizAbility (for Macintosh and Windows); the Autodesk Press line of books, stand-alone software, and RealSuite packages for students; and selected titles in computer science, including INTERACTIVE COMPUTER GRAPHICS IN X by Theo Pavlidis.

Quantel Inc.
Booth 2325

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http://www.quantel.com

Guy Walsingham
Director of Marketing

Domino is the film opticals system of choice for directors, producers, and special effects supervisors seduced by its real-time speed, interactivity, and seamless results. Its direct 3D computer interface further enhances this creative potential. Witness also the awesome creative power of Graphic Paintbox, Quantel's all-new, high-resolution image manipulation system.

Questar Productions
Booth 2042

1058 Weld County Road 23.5
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+1.303.659.4028
+1.303.659.4028 fax
wcsinfo@arcticus.burner.com
http://www.dimensional.com/~questar

Gary Huber
President

World Construction Set Version 2 is the new standard for breathtaking photorealistic terrain rendering and animation. Create anything from detailed close-up scenes to entire spherical planets. Multi-platform, feature-packed, science-based, and artist-friendly, WCS has exceptional ecosystems, clouds, water, texturing, animation, and data handling. WCS includes support for LightWave 3D and 3D Studio.

QuVIS Inc.
Booth 2061

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Larry Strobor
Vice President Marketing and Sales

QuBit is the world's first intelligent video recorder. Specifically designed for the computer animation industry, QuBit provides D-1 resolution plus full band chroma recording (with alpha channel), high-band recording, 12-bit resolution, four-channel 24-bit audio, 100 Base T network image access, video and film resolution, and hours of real time to disk and tape storage.

Radiance Software International
Booth 121

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+1.510.848.7621
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ez3d@radiance.com
http://www.radiance.com

Lee Seiler
CEO

Ez3d is a powerful and complete 3D modeling/VRML authoring system for Windows NT/95 and UNIX. It offers easy-to-use 3D modeling, mapping, real-time scene composition, and ray tracing in a well-integrated graphical interface. Ez3d is a "one-stop" solution for creating professional 3D Web pages without the need for programming.

Radius Inc.
Booth 637

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Sunnyvale, California 94089 USA
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http://www.radius.com/

Radius, the leading manufacturer of Mac OS products and solutions for creative professionals, demonstrates its line of high-performance tools for 2D and 3D graphics, digital video, and color displays. Featured products and technologies include: Radius Thunder 3D Graphics Engines, ThunderPower 1920, VideoVision PCI, Radius Edit 2.0, PressView, and PrecisionView monitors.

Real 3D
Booth 1862

12506 Lake Underhill Road
Orlando, Florida 32825 USA
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http://www.mmc.com/real3D/

Carlton Caldwell
Manager, Public Affairs

REAL 3D, a Lockheed Martin Company, demonstrates the R3D-PRO1000 Professional Series of stand-alone graphics engines. R3D-PRO1000 machines apply patented algorithms and processes proven in the world's best combat simulators. Key applications include high-end graphics and engineering workstations, ship handling, flight simulation, driver training, rail training, and location-based entertainment.

REM INFOGRAFICA, S.A.
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Jorge Martinez Reverte
General Manager

REM INFOGRAFICA produces Metarreyes, the only software for building 3D organic models and a 3D Object Library with 3,000 models of unsurpassed quality, textured and lighted, at affordable prices. III Factor uses its sister-company technology for production of animated cartoons and 3D films.

The Republic Group, Inc.
Booth 2314

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Equipment leasing/financing.

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Karen Mead
Manager of Marketing

Research Triangle Institute is a full-service integrator, providing unique computer solutions. We develop and deliver virtual environments for applications such as training, marketing, architectural and interior design, and transportation. Founded in 1958, RTI is a contract R&D organization located in the center of North Carolina's Research Triangle Park.

RGB Spectrum
Booth 1617

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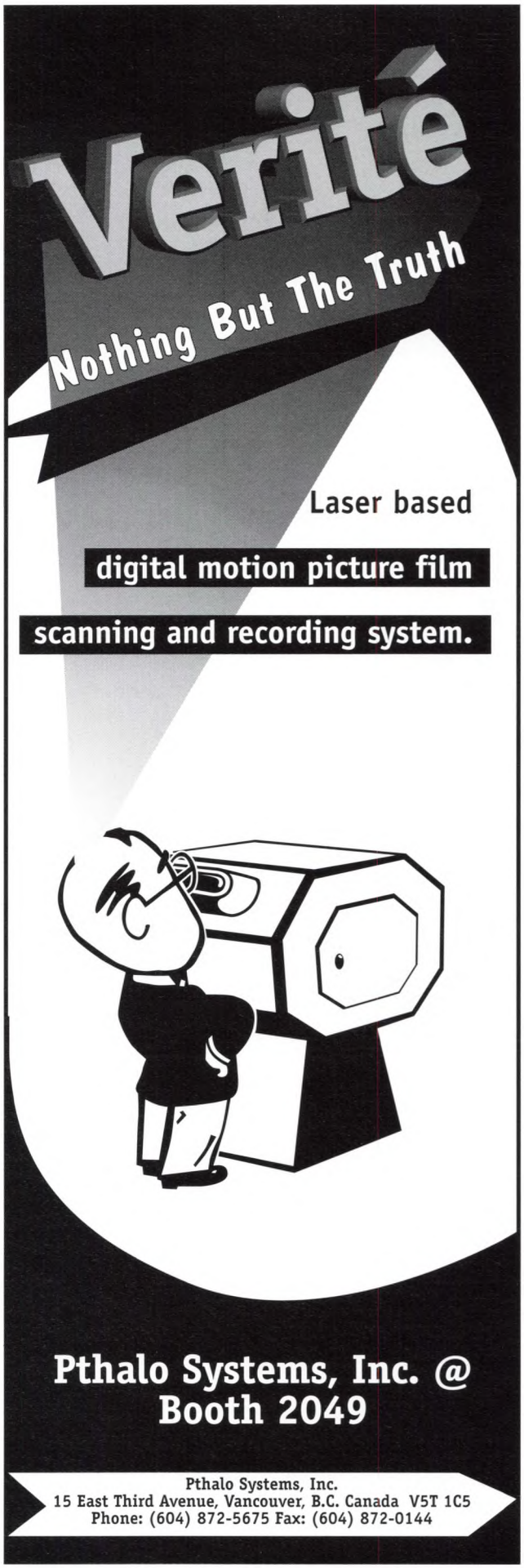
Sales Department

Products demonstrated include: The RGB/Videolink 1700-D1 scan converter, which transforms high-resolution computer signals to CCIR601 digital video, NTSC, PAL, S-Video, and more; the ComputerWall multi-screen display controller; The SuperView multi-video windowing system; and the SynchroMaster 300AV, a computer signal synchronizer, switcher, fader/dissolve unit for data display projectors.



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http://www.rhythm.com

Brad J. Reinke
Recruiting Administrator

Rhythm & Hues Studios produces world-class animation and visual effects for commercials, feature films, CD-ROM's, and music videos. We have created the most watched commercial campaign: the Coca-Cola Polar Bears, as well as numerous effects in such projects as "Batman," "Waterworld," "The Nutty Professor," "Kazaam," and the Academy Award-winning (Visual Effects) film "Babe."

Ron Scott Inc.
Booth 503

1000 Jackson Boulevard
Houston, Texas 77006 USA
+1.713.529.5868
+1.713.529.9370 fax
102255.1246@compuserve.com
http://www.qfx.com

Karla West
Director of Marketing

QFX for Windows, Windows 95, and Windows NT combines painting, drawing, digital darkroom controls, special effects, and image composing in a single 32-bit multi-threaded image-editing program available for Intel, NEC MIPS, and DEC Alpha platforms. QFX supports multi-processor systems and Windows fonts, plug-ins, and devices, and features memory-free layering, warping and shading, and programmable macro function.

S-MOS Systems, Inc.
Booth 422

2460 North First Street
San Jose, California 95131 USA
+1.408.922.0200
+1.408.922.0238 fax
3d@smos.com
http://www.smos.com/standard.html

Ed Hall
Product Marketing Engineer

S-MOS Systems, Inc. is showing the PIX 3D graphics upgrade chip for PCI Bus machines. Delivering performance of 66 million texture-mapped, z-buffered pixels per second at an unbeatable price point, PIX is the solution for realistic and compelling 3D games.

Savannah College of Art and Design
Booth 2439

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Savannah, Georgia 31401 USA
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Information@SCAD.edu
http://www.SCAD.edu

Raphael DiLuzio
Director, Center for Digital Arts Research

The college prepares students to lead the art and design fields into innovative future technologies. Resources include state-of-the-art computers and software, AVID editing stations, the Center for Digital Arts Research, and a distinguished faculty, providing an ideal environment for advanced explorations in new media.

Scala, Inc.
Booth 2024

2323 Horsepen Road
Herndon, Virginia 22071 USA
+1.703.713.0900
+1.703.713.1960 fax
http://www.scala.com

Leslie LeComte
Director of Event Marketing

Scala Multimedia MM100 authoring software is a ready-to-use multimedia package that lets users create scripts and productions with the impact of television on the PC-platform (Windows 95 compatible). Perfect for business presentations, interactive demonstrations, training, and more. Available through Merisel or local retailers.

Scientific Computing & Automation
Booth 2746

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http://www.scamag.com

Matt Lally
National Sales Manager

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Scitex Digital Video, Inc.
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info@scitexdv.com
http://www.scitexdv.com

Pete Challinger
Marketing Director

ImMIX Sphere: The ImMIX Sphere line of fully real-time nonlinear digital video finishing workstations features superior picture quality, built-in workgroup networking, a flexible QuickTime file format, and professional editing software. Abekas Diskus: Abekas Diskus, the 10-bit DDR, offers high-quality, uncompressed 10-bit, 601-quality resolution at an affordable price in compact configuration.

Screen Actors Guild
Booth 2350

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Los Angeles, California 90036 USA
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+1.213.549.6801 fax
mikepro@primenet.com

Michael A. Prohaska
Senior Administrator

The Screen Actors Guild represents more than 90,000 professional performers nationwide who are dedicated to performing in motion pictures, television, commercials, corporate, industrial, and interactive programs. They excel in on-camera performance and voice-over characters.

SensAble Technologies, Inc.
Booth 2346

University Park at MIT
26 Landsdowne Street
Cambridge, Massachusetts 02139 USA
+1.617.621.0150
+1.617.621.0135 fax
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John Ranta
Business Development Manager

SensAble Technologies is the maker of the highly acclaimed PHANToM Haptic Interface. SensAble provides high-fidelity 3D force-feedback systems that run on standard PCs or Silicon Graphics workstations. SensAble provides hardware, software, and support services to enable a new generation of applications that include the sense of touch.

Sense8 Corporation
Booth 1725

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+1.415.331.9148 fax
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Denise Beardsley
Marketing Communications

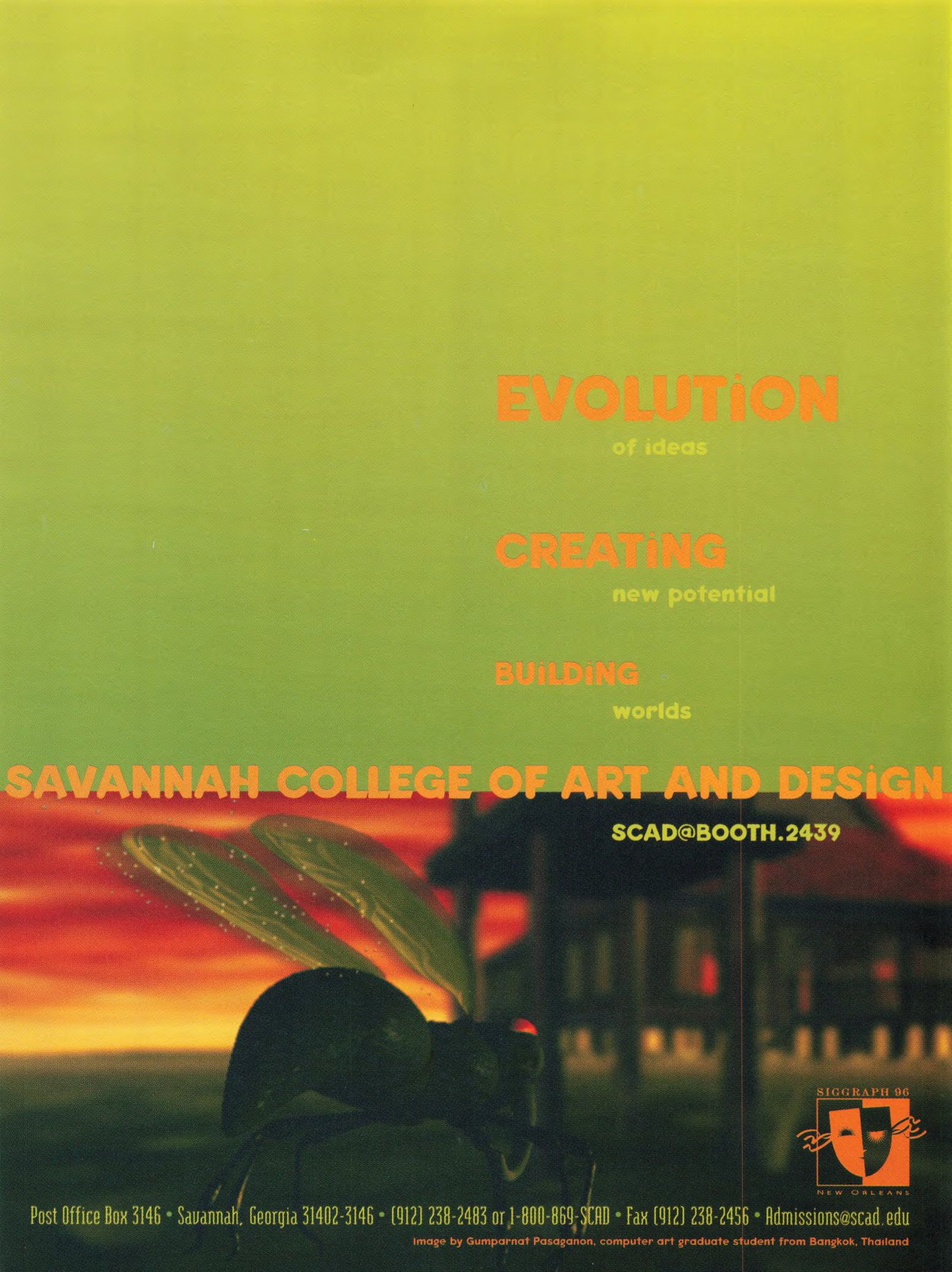
Sense8 offers interactive real-time 3D content development systems for applications that incorporate visual simulation and virtual reality. Our products are state-of-the-art and easy to use. Developers can instantly turn their prototypes into products. We offer cross-platform portability, support for all 3D devices, and VRML compatibility.

Side Effects Software
Booth 317

477 Richmond Street West, Suite 1001
Toronto, Ontario M5V 3E7 CANADA
+1.416.504.9876
+1.416.504.6648 fax
janet@sidefx.com
http://www.sidefx.com

Janet Fraser
Sales and Marketing

Side Effects Software releases Houdini, its eagerly awaited next-generation 3D animation system. This full-function animation tool set leverages the procedural approach of its predecessor, PRISMS. Houdini also offers a new level of integration across its tool set, allowing animators to drive their own workflow. The user interface, consistent across the entire tool set, has been substantially refined to enhance productivity. Innovations in modeling allow full support of mixed geometry types.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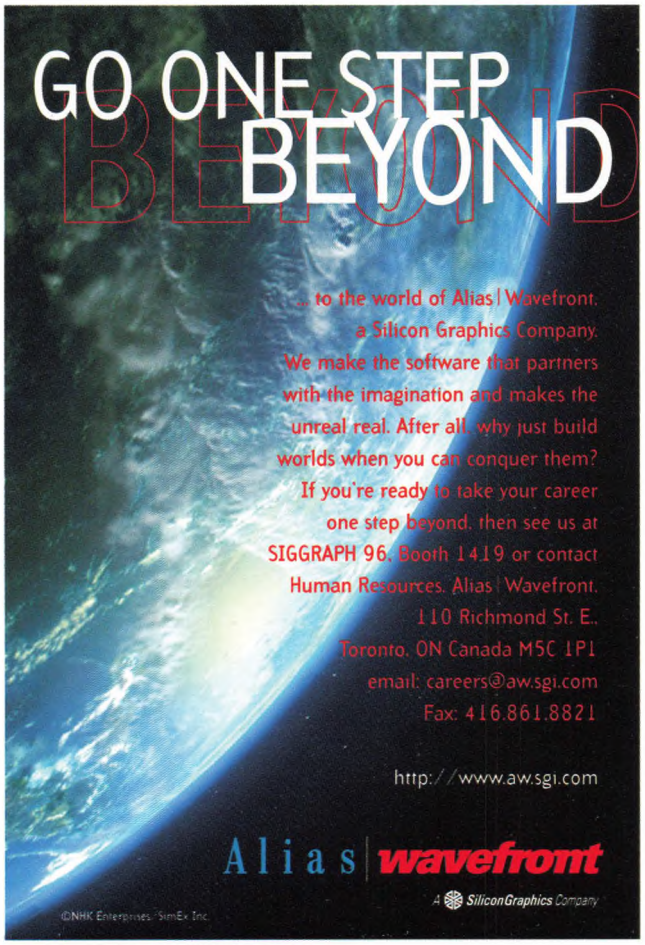

Sierra Design Labs
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Steve Roach
Product Marketing Manager

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Sigma Electronics, Inc.
Booth 2405

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Kent Porter
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Society of Motion Pictures and Television Engineers (SMPTE)
Booth 1041

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John Izzo
Director of Marketing

SMPTE is one of the world's largest professional engineering societies and is recognized around the globe as a leader in the development of standards and authoritative, consensus-based engineering guidelines. The Society serves all branches of film, video, multimedia, and computer engineering. SMPTE is a leading publisher of technical documents associated with some of the industry's leading breakthrough technologies.

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Marketing Communications Manager

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Cynthia Simmons
Marketing Assistant

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Jennifer Greig
Marketing Manager

Sprint Drums is a WAN service targeted to the advertising and entertainment industries used to create commercials, films, or other creative projects online. Drums enables creative professionals to send videos, animation, and/or graphics to one another and to their clients in real time. Drums also provides access to compelling imagery, T-1 connectivity to the Internet, and a directory of users.

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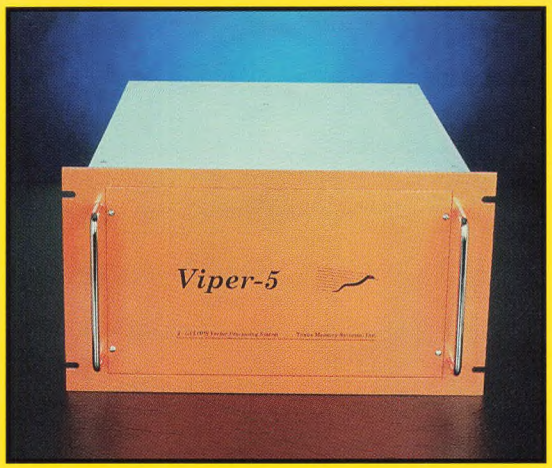

The **Viper-5** DSP system is designed to execute FFT-intensive scientific DSP routines very efficiently. It is based on the S2 super vector processor board which utilizes the **TM-66 swiFFT chip**. With four S2 vector processing boards, one scalar Alpha-based processing board, and a large, fast, shared memory, the Viper-5 can be attached as a **fast back-end scientific processor** to one or more workstations **(DEC, SGI, SUN)**. High level program development takes place on the workstation, and the compiled code executes on the Viper-5. Also, with six fast I/O ports and a low overhead software executive, the Viper-5 makes for an ideal **real-time system.** The basic Viper-5 system (w/S2, 256 MB) costs $55,000.

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Nana Ishizuka
Coordinator

Game Production.

StereoGraphics Corporation
Booth 1531

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http://www.stereographics.com

Barbara Cassidy
Marketing Communications Manager

SereoGraphics pioneered stereoscopic imaging equipment and is the world leader in electro-stereoscopic display systems. CrystalEyes, StereoGraphics' flagship product, has an installed base of over 20,000 users in scientific visualization, GIS/mapping, molecular modeling, CAD/CAM, and commercial presentation. With new SimulEyes VR, the company now offers stereo-vision eyewear for home PC game, multimedia, and edutainment markets.

Storage Concepts
Booth 2356

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+1.714.852.8930 fax
kelly@storcon.com
http://www.storageconcepts.com

Kelly Kammerer
Marketing Administrator

Storage Concepts displays products from its two separate divisions. The Real-Time Division displays fibre channel and UltraSCSI RAID devices for uncompressed digital video storage. The Video on Demand group highlights its Videoplex Video Server for hotel, inflight entertainment, corporate training and other applications.

Strata, Inc.
Booth 2530

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ginas@strata3d.com
http://www.strata3d.com

Gina Schwendiman
Public Relations Coordinator

Strata, Inc. is a leading provider of content-creation tools for the digital video, interactive media, and creative design professional. Strata's cross-platform, open architecture software includes like interfaces across multiple applications in their suite. Strata is committed to providing easy-to-use multimedia applications for both the Macintosh and Windows 95/NT platforms.

StreamLogic Corporation
Booth 1650

21329 Nordhoff Street
Chatsworth, California 91311 USA
+1.818.701.8400
+1.818.701.8410 fax
http://www.streamlogic.com

Nancy H. Coolman
Marketing Communications Specialist

StreamLogic is a leading developer of software and subsystems designed for movement, storage, and management of data and video. Current product offerings include RAIDION fault-tolerant disk arrays, MICRODISK external storage subsystems, VIDEON video-on-demand servers, and the Video Disk Recorder.

Sun Microsystems, Inc.
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Marketing Manager

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Syndesis Corporation
Booth 2334

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Laurie Peter
Press Relations

Syndesis's InterChange for Windows and SGI translates between more than 40 3D file formats, including 3D Studio, Softimage, Alias, VRML, Direct 3D, LightWave, DXF, Wavefront, and many others. Syndesis also publishes several inexpensive collections of thousands of 3D models on CD-ROM to demonstrate InterChange.

Synthetic Images, Inc.
Booth 2429

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Lee Slater
Director of Marketing

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Tech-Source Inc.
Booth 938

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Cathy@techsource.com
http://www.techsource.com

Cathy Townsend
Marketing Assistant

Tech-Source Inc. is showing PCI and SBus graphics accelerators capable of resolutions up to 2048 x 2048. Options for overlay/underlay, flat panel output, double buffering and stereoscopic viewing are also available on various Tech-Source graphics accelerators.

Tektronix, Inc.
Booth 1005

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+1.503.627.5801 fax

Cynthia Doak
MarCom Specialist

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TELOS, The Electronic Library of Science
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Walter Borden
Product Manager

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Template Graphics Software, Inc.
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http://www.tgs.com

Robert Weideman
Vice President, Marketing

Template Graphics Software is the premier vendor of 3D graphics tools for developers and end users in visualization, simulation, CAD/CAM, digital design, and VRML markets. TGS is the largest vendor of SGI Open Inventor for non-SGI UNIX systems and Microsoft Win32 platforms, providing Microsoft with VRML tools on Visual C++. The 3Space desktop 3D product family includes the new 3Space Publisher, an end-user application for creating 3D VRML, animated raster, video, Java and active VRML titles. TGS is also showing GPHIGS/OPGS, the latest release of ANSI/ISO PHIGS+.

Texas Memory Systems, Inc.
Booth 920

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Holly Frost

Viper-5 Super Processing System: a 5 GFLOPS vector processing system optimized for real-time processing in a high I/O rate environment. The Viper-5's number-crunching power is provided by the TM-66 swiFFT chip. With a balanced architecture of 1-4 vector processing nodes (1.25 GFLOPS each), large system memory (2048 MB), and six fast (200 MB/sec) I/O ports, the Viper-5 is used for both real-time and high-end vector processing applications. A four node Viper-5 performs a one-million-point CFFT in 21 msec.

Thomson Broadcast, Inc.
Booth 2545

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Patricia M. Skea
Communication Coordinator

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Elisabeth Laett
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TicTacToon is revolutionary software for the 2D animation industry. The software is vector based, which allows for resolution independence, for output in any video or film format. It is modular and covers the entire chain of the animation process: lip assignment, animation and clean-up, scan, backgrounds, scene planning, ink & paint, virtual effects, and shoot module.

Transoft Technology Corporation
Booth 2712

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Aileen Wrench
Assistant, Sales & Marketing

Transoft Technology Corporation provides high-speed networks for nonlinear video and graphics applications. Transoft displays StudioBOSS FC, a fibre channel network for Macintosh and SGI platforms. StudioBOSS FC is a 100 MB/second network capable of transferring uncompressed video data streams in real time.

Van Nostrand Reinhold
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Cynthia Biron
Marketing Manager - Architecture

Van Nostrand Reinhold publishes high-quality, innovative books on graphic design, both commercial and academic. Some of the most recent releases include *The Art of 3-D Computer Animation & Imaging and Computer Graphics for Designers and Artists* by Issac Kerlow, *Creating Digital Illusions by Barry Blackman*, and *Digital Photo Illustration* by Jeremy Gardiner. These wonderfully illustrated books include coverage of the latest graphic design techniques.

Vangard Technology
Booth 843

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Theresa De Paul
Marketing Communications Manager

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Variety's ON Production
Booth 2018

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Jerry Brandt
Publisher

Variety's ON Production is the industry-leading publication that addresses all branches of the film, television, and television commercial production business, and provides the best reach to production and post-production segments of these industries, as well as the best coverage of the most important production centers.

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Brian Wolf
National Trade Show Manager

ViaGrafix is made up of two divisions: Training and Software. The Training Division has produced over 450 training programs on video and interactive CD-ROM. These tutorials cover the most commonly used features of many popular software packages. Call 800.842.4723 or fax 800.842.3294. The Software Division makes DesignCAD 2D and 3D as well as several other accessory packages for architects and engineers. Call 800.233.3223 or fax +1.918.825.6359.

Vicon Motion Systems
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+1.408.227.6707 fax
mlevin@videomedia.com
http://www.videomedia.com

Ian Weingold
Sales Manager

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Viewpoint DataLabs International, Inc.
Booth 638

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Orem, Utah 84058 USA
800.DATASET
+1.801.229.3300 fax
bobm@viewpoint.com
http://www.viewpoint.com

Founded in 1988, Viewpoint is the pioneer and worldwide leader in 3D core content publishing and creation. The company's unparalleled library and custom services - widely recognized as the industry standard for 3D models - are used by award-winning creators to develop 3D animations, designs, and graphics for the film and video, games and interactive media, and desktop graphics markets. Customers rely on Viewpoint's 3D products as core content to help speed and innovate the creative production cycle, and, in turn, gain a competitive edge.

Viewsonic Corporation
Booth 2320

20480 Business Parkway
Walnut, California 91789 USA
+1.909.869.7976
+1.909.468.3756 fax
bakerk@viewsonic.com
http://www.viewsonic.com

Kelli Baker
PR Manager

ViewSonic is showing ultra-high-resolution monitors including three new 21-inch (various viewables) monitors. The new Professional Series P815 monitor boasts resolutions up to 1800x1440 at 76Hz. ViewSonic's award-winning aperture grille based 17-inch and 21-inch (various viewables) SonicTron monitors are also on display.

VIRTUAL Ed. Wilson
Booth 2363

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info@virtual.it

Stefania Garassini
Editor-in-Chief

Virtual, the first Italian monthly magazine about virtual reality and synthetic images, is an indispensable guide for exploring the limitless territory onto which this technology has opened unbelievable horizons. Every month, the magazine includes a section entitled "InternetCafe" entirely devoted to the Internet.

Virtuality, Inc.
Booth 2143

4005 Miranda Avenue, Suite 150
Palo Alto, California 94304 USA
+1.415.843.3700
+1.415.843.0711 fax
enquiries@virtuality.com
http://www.virtuality.com

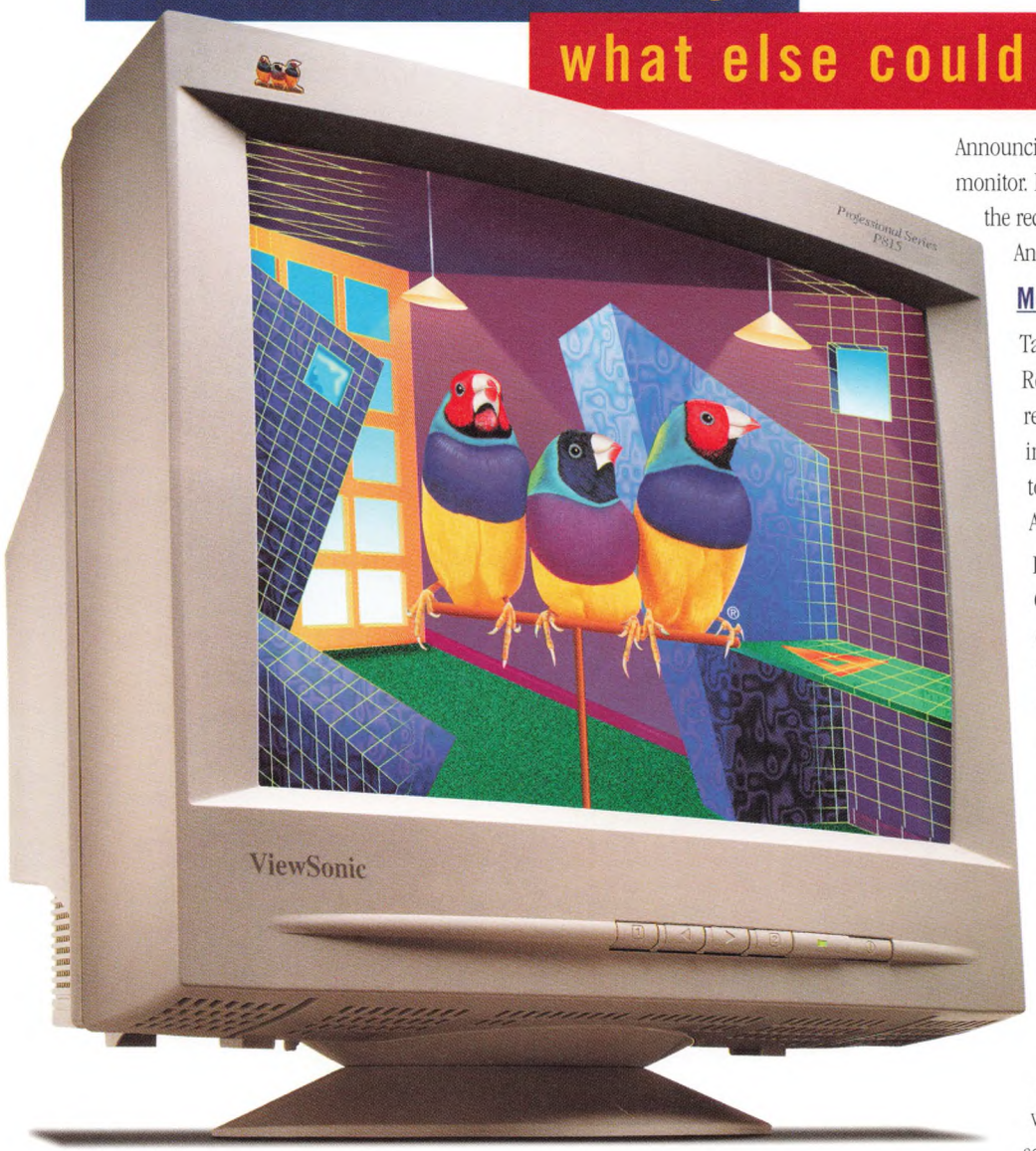
Daniel W. Berger
Business Development Manager

Virtuality is a world leader in immersive virtual reality for entertainment, advertising, promotion, training, and simulation. See us at the Digital Bayou for a glimpse into the future of networked, VR-based entertainment. Then stop by our booth and learn how you can participate in the Virtuality Solutions Partner Program.

Introducing Mega Monitor™:

with 250 MHz video input bandwidth, 1800 x 1440 @ 76Hz and a 30–115 KHz horizontal scan range,

what else could you call it?



Announcing the ViewSonic P815 21" (20" viewable) monitor. It's the latest innovation from ViewSonic®, the recognized leader in color monitor technology. And it's a mega hit.

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Talk about unbelievable numbers: Resolutions up to 1800 x 1440 at a 76Hz refresh rate. A whopping 250MHz video input bandwidth. A horizontal scan rate up to 115KHz. And a 0.25mm dot pitch. All high water marks in the industry.

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	ViewSonic Professional Series				
Model	**P815**	**P810**	**PT810**	**PT770**	**17PS**
Dot/Aperture Grille Pitch	0.25mm	0.25mm	0.30mm*	0.25mm*	0.25mm
CRT Size/Viewable	21"/20.0"	21"/20.0"	21"/20.0"	17"/16.0"	17"/16.0"
Horizontal Scan Rate	30-115 KHz	30-95 KHz	30-96 KHz	24-82 KHz	30-86 KHz
Video Input Bandwidth	250 MHz	200 MHz	200 MHz	135 MHz	135 MHz
Recommended Resolution	1800 x 1440 @ 75Hz	1600 x 1200 @ 76Hz	1600 x 1200 @ 77Hz	1280 x 1024 @ 77Hz	1280 x 1024 @ 80Hz
MSRP**	$2,195	$1,845	$1,995	$945	$899

* Aperture Grille

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(909) 869-7976 Fax: (909) 869-7958 • Call FaxSonic™ at (909) 869-7318 (24-hour fax-on-demand) Request Docs. P815–161; P810–160; PT810–163; PT770–152; 17PS–153
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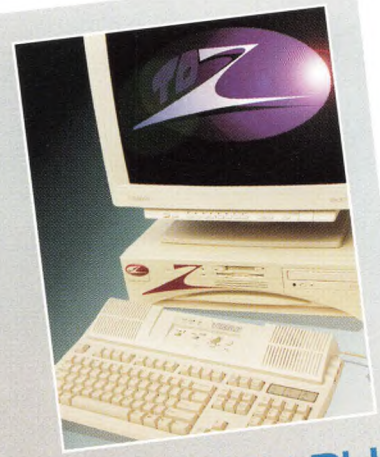

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Booth 1840

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Chris Dolan
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Ellen Williams
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Gary McKenzie
Marketing Communications Manager

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Elsbeth Wetherill
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Booth 1538

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Randy R. Smith
Marketing Manager

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starks@3dmagic.com
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Dimension X
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Graphic Detail Inc.
Booth SP 1

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JackRabbit Productions
Booth SP 15

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Robert McNeel & Associates
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Animation

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2544	4DVISION
537	5D Ltd.
2306	5DT (Fifth Dimension Technologies)
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1043	Acuris Inc.
2551	Adaptive Optics Associates, Inc., a United Technologies company
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133	Analogus Inc.
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2409	Animation Magazine
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511	Ascension Technology Corporation
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2730	AXA Corporation
2060	Axial Systems, Inc.
2111	BioVision
2728	CAD Institute
1905	Caligari Corporation
427	Cambridge Animation Systems
337	Camera Di Commercio di Milano - D.I.M.M.I.
2020	Charles River Media, Inc.
2333	Chromatek Inc.
2109	Cogswell Polytechnical College
1009	Computer Graphics World
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2644	Creative Equipment International
2419	CST Entertainment, Inc.
1730	Cyberware
2521	DeskStation Technology, Inc.
1631	Desktop Images
1037	Diaquest
2029	Digimation, Inc.
117	Digital Compositing Systems, Inc.
929	Digital Processing Systems
2423	DIGITAL SIGHT + SOUND INC.
2750	Digital Wisdom Inc.
2529	Digits 'n Art Software, Inc.
105	DreamWorks Animation
1715	ElectricImage, Inc.
221	ELSA Inc.
627	Engineering Animation, Inc.
312	Equilibrium
905	Evans & Sutherland Computer Corporation
2550	Falcon Systems
2738	FARO Technologies Inc.
327	Fractal Design Corporation
2455	General Reality Company
404	Hash Inc.
1105	Hewlett-Packard
1237	IBM Corporation
338	Image Technology
2023	Immersion Corporation
1437	Integrated Computing Engines, Inc.
1837	Interactive Effects
603	Intergraph Computer Systems
1743	International Memory Products of Illinois, Inc.
2017	Intoons Entertainment Group
346	IRIS Graphics, Inc.
819	Kinetix
2415	Laser InSpeck inc.
212	Lightscape Technologies, Inc.
127	Linker Systems
1546	Logitech
403	Lucent Technologies - Software Solutions Group
2506	Macromedia
743	Matrox Video Products Group
2037	MetaTools, Inc.
2650	mFactory
1856	Motion Analysis Corporation
1843	NeTpower
1656	NewTek, Incorporated
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2139	Northern Digital Inc.
2324	NVision, Inc.
107	Odyssey Productions
2361	Omnicomp Graphics Corporation
1532	Onyx Computing, Inc.
2344	Orphan Technologies
1528	P.E. Photron
103	Pacific Data Images
2630	Panasonic Broadcast & Television Systems Company
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2538	PIXIBOX-PEGS
2315	Play Incorporated
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2332	Positron
2744	Professional Marketing Services, Inc.
2042	Questar Productions
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1862	Real 3D
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2050	Rhythm & Hues Studios
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719	Softimage
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2706	Spaceward Graphics Limited
1510	Springer-Verlag
1531	StereoGraphics Corporation
2530	Strata, Inc.
1121	Sun Microsystems, Inc.
2334	Syndesis Corporation
2545	Thomson Broadcast, Inc.
2516	Toon Boom Technologies Inc.
2044	Vicon Motion Systems
1621	Videomedia, Inc.
2363	Virtual
2748	Visible Productions
2028	Westwood Studios
1345	Xaos Tools, Inc.

Architecture/engineering/construction

Booth	
946	(Art)^n Laboratory
129	3D Construction Company
2255	3D/EYE
1750	3Dlabs, Inc.
527	AccelGraphics, Inc.
1647	Advanced Media Production Center
1438	Advanced Visual Systems Inc.
2012	AtLightSpeed
1923	auto.des.sys, Inc.
1762	Autometric, Inc.
243	Coryphaeus Software, Inc.
1730	Cyberware
2423	DIGITAL SIGHT + SOUND INC.
221	ELSA Inc.
627	Engineering Animation, Inc.
1105	Hewlett-Packard
1237	IBM Corporation
338	Image Technology
2023	Immersion Corporation
346	IRIS Graphics, Inc.
819	Kinetix
212	Lightscape Technologies, Inc.
1929	MultiGen Inc.
2557	MuSe Technologies
1656	NewTek, Incorporated
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412	Numerical Algorithms Group, Inc.
2324	NVision, Inc.
2754	Omniview, Inc.
1532	Onyx Computing, Inc.
2344	Orphan Technologies
1949	Paradigm Simulation, Inc.
737	Parallax Graphics, Inc.
1829	Portable Graphics, Inc.
2042	Questar Productions
121	Radiance Software
1862	Real 3D
421	Research Triangle Institute
1531	StereoGraphics Corporation
2334	Syndesis Corporation
1029	Template Graphics Software, Inc.
1840	Virtus Corporation
2505	VRex, Inc.

Business & financial graphics

Booth	
946	(Art)^n Laboratory
2255	3D/EYE
2511	3Dfx Interactive, Inc.
1750	3Dlabs, Inc.
1647	Advanced Media Production Center
1438	Advanced Visual Systems Inc.
1762	Autometric, Inc.
1805	Avid Technology, Inc.
337	Camera Di Commercio di Milano - D.I.M.M.I.
2333	Chromatek Inc.
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1631	Desktop Images
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2750	Digital Wisdom Inc.
221	ELSA Inc.
627	Engineering Animation, Inc.
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1237	IBM Corporation
338	Image Technology
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2728	CAD Institute
2333	Chromatek Inc.
1009	Computer Graphics World
243	Coryphaeus Software, Inc.
2521	DeskStation Technology, Inc.
417	Diamond Multimedia
805	Digital Equipment Corporation
221	ELSA Inc.
627	Engineering Animation, Inc.
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2023	Immersion Corporation
603	Intergraph Computer Systems
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819	Kinetix
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Computer-video interfacing

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1647	Advanced Media Production Center
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603	Intergraph Computer Systems
1743	International Memory Products of Illinois, Inc.
2017	Intoons Entertainment Group
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743	Matrox Video Products Group
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1505	Scitex Digital Video, Inc.
2405	Sigma Electronics, Inc.
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1531	StereoGraphics Corporation
2530	Strata, Inc.
1650	StreamLogic Corporation
2712	Transoft Technology Corporation
1621	Videomedia, Inc.
2748	Visible Productions

Conferences/exhibitions

Booth	
2306	5DT (Fifth Dimension Technologies)
505	ACM/IEEE SUPERCOMPUTING '96
337	Camera Di Commercio di Milano - D.I.M.M.I.
2333	Chromatek Inc.
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2529	Digits 'n Art Software, Inc.
1506	IEEE Computer Society
338	Image Technology
2017	Intoons Entertainment Group
1545	Montpellier Technopole
2754	Omniview, Inc.
2630	Panasonic Broadcast & Television Systems Company
421	Research Triangle Institute
2050	Rhythm & Hues Studios
2024	Scala, Inc.
1840	Virtus Corporation

Consulting

Booth	
2306	5DT (Fifth Dimension Technologies)
1647	Advanced Media Production Center
1438	Advanced Visual Systems Inc.
337	Camera Di Commercio di Milano - D.I.M.M.I.
119	CGSD Corporation
1105	Hewlett-Packard
1237	IBM Corporation
1743	International Memory Products of Illinois, Inc.
2017	Intoons Entertainment Group
2744	Professional Marketing Services, Inc.
421	Research Triangle Institute
2024	Scala, Inc.
843	Vangard Technology

Data analysis software

Booth	
1647	Advanced Media Production Center
1438	Advanced Visual Systems Inc.
2333	Chromatek Inc.
1105	Hewlett-Packard
1237	IBM Corporation
2557	MuSe Technologies
412	Numerical Algorithms Group, Inc.
2344	Orphan Technologies
2011	Parity Systems Inc.
421	Research Triangle Institute

Desktop publishing

Booth	
1819	Adobe Systems Inc.
2720	Alien Skin Software, LLC
2127	AniCom
1917	Apunix Computer Services
2722	Artbeats Software, Inc.
2012	AtLightSpeed
2030	Balboa Capital
1337	BARCO, Inc.
2020	Charles River Media, Inc.
2328	Creative Digital Research Network
2521	DeskStation Technology, Inc.
730	Digital Semiconductor
2423	DIGITAL SIGHT + SOUND INC.
2750	Digital Wisdom Inc.
312	Equilibrium
327	Fractal Design Corporation
1641	FWB, Inc.
1105	Hewlett-Packard
1237	IBM Corporation
338	Image Technology
2023	Immersion Corporation
1437	Integrated Computing Engines, Inc.
603	Intergraph Computer Systems
1743	International Memory Products of Illinois, Inc.
346	IRIS Graphics, Inc.
2616	LaserMaster Corporation
2010	Mediascape Corporation
2443	Minolta Corporation
1532	Onyx Computing, Inc.
2630	Panasonic Broadcast & Television Systems Company
2744	Professional Marketing Services, Inc.
2117	ProMax Technology
121	Radiance Software
637	Radius Inc.
503	Ron Scott Inc.
2024	Scala, Inc.
2706	Spaceward Graphics Limited
1510	Springer-Verlag
1029	Template Graphics Software, Inc.
2340	Western Scientific, Inc.
1345	Xaos Tools, Inc.

Desktop video production

Booth	
129	3D Construction Company
2511	3Dfx Interactive, Inc.
211	Accom, Inc.
1819	Adobe Systems Inc.
2720	Alien Skin Software, LLC
2127	AniCom
1219	Apple Computer, Inc.
2722	Artbeats Software, Inc.
2012	AtLightSpeed
1805	Avid Technology, Inc.
2030	Balboa Capital
943	Comunicacion Integral, S.L.
2644	Creative Equipment International
1519	Media 100/Data Translation
2261	Denim Software
2521	DeskStation Technology, Inc.
1631	Desktop Images
1037	Diaquest
929	Digital Processing Systems
730	Digital Semiconductor
2423	DIGITAL SIGHT + SOUND INC.
2750	Digital Wisdom Inc.
312	Equilibrium
1445	Fast Electronic U.S., Inc.
1641	FWB, Inc.
1105	Hewlett-Packard
1237	IBM Corporation
2023	Immersion Corporation
2337	in:sync corporation
1437	Integrated Computing Engines, Inc.
1837	Interactive Effects
1743	International Memory Products of Illinois, Inc.
127	Linker Systems
743	Matrox Video Products Group
2037	MetaTools, Inc.
2443	Minolta Corporation
912	MMS Multi Media Systems GmbH
1843	NeTpower
1656	NewTek, Incorporated
2324	NVision, Inc.
1532	Onyx Computing, Inc.
2630	Panasonic Broadcast & Television Systems Company
737	Parallax Graphics, Inc.
2330	PC Video Conversion
2315	Play Incorporated
2117	ProMax Technology
2042	Questar Productions
2061	QuVIS Inc.
121	Radiance Software
637	Radius Inc.
503	Ron Scott Inc.
2024	Scala, Inc.
1505	Scitex Digital Video, Inc.
2732	Sierra Design Labs
2405	Sigma Electronics, Inc.
719	Softimage
2706	Spaceward Graphics Limited
541	Sprint
2334	Syndesis Corporation
1621	Videomedia, Inc.
2340	Western Scientific, Inc.
1345	Xaos Tools, Inc.

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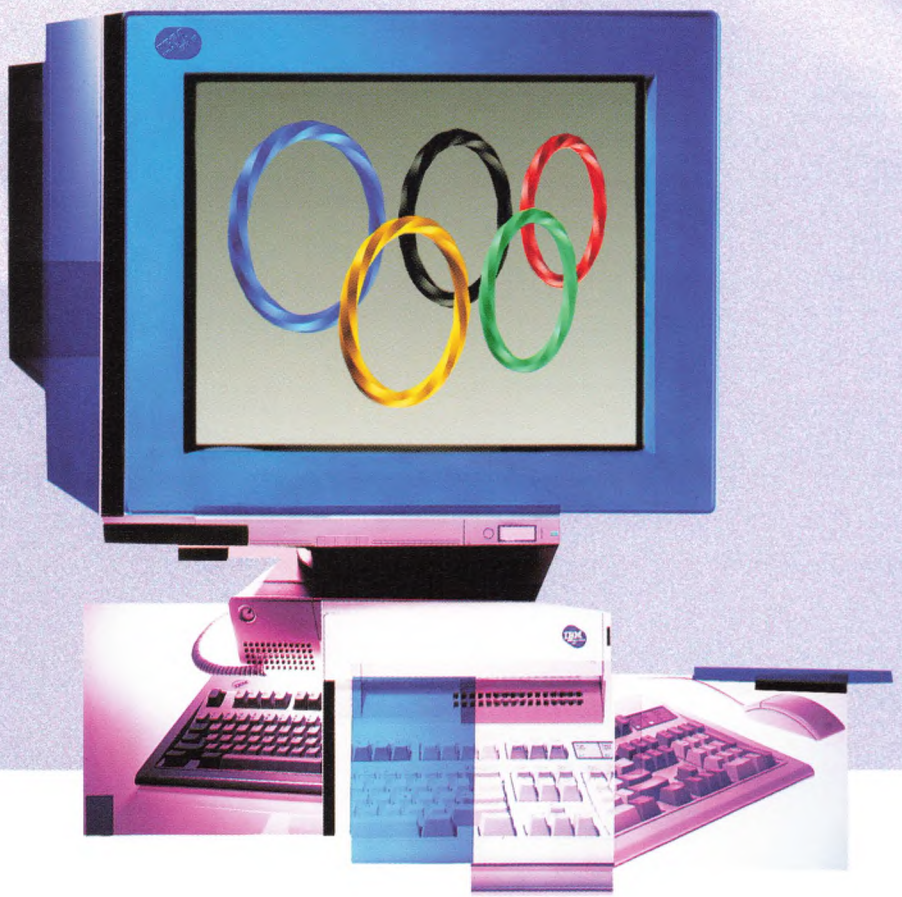

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Electronic publishing

Booth	
129	3D Construction Company
1647	Advanced Media Production Center
2127	AniCom
1518	AP PROFESSIONAL
1219	Apple Computer, Inc.
1917	Apunix Computer Services
2060	Axial Systems, Inc.
337	Camera Di Commercio di Milano - D.I.M.M.I.
2333	Chromatek Inc.
1009	Computer Graphics World
2328	Creative Digital Research
2423	DIGITAL SIGHT + SOUND INC.
2750	Digital Wisdom Inc.
312	Equilibrium
1105	Hewlett-Packard
2316	HPCwire
1237	IBM Corporation
1506	IEEE Computer Society
1743	International Memory Products of Illinois, Inc.
2010	Mediascape Corporation
1843	NeTpower
107	Odyssey Productions
2344	Orphan Technologies
2744	Professional Marketing Services, Inc.
2117	ProMax Technology
121	Radiance Software
2024	Scala, Inc.
2706	Spaceward Graphics Limited
1510	Springer-Verlag
1840	Virtus Corporation
2748	Visible Productions
109	Wired

Encoders/decoders

Booth	
2006	Ensemble Designs Inc.
1737	Extron Electronics, Inc.
2017	Intoons Entertainment Group
444	Leitch
743	Matrox Video Products Group
1756	Miranda Technologies Inc.
2305	Mitsubishi Electronics America, Inc.
1528	P.E. Photron
737	Parallax Graphics, Inc.
2330	PC Video Conversion
1505	Scitex Digital Video, Inc.
2405	Sigma Electronics, Inc.
2356	Storage Concepts
2545	Thomson Broadcast, Inc.

Engineering/scientific applications

Booth	
946	(Art)^n Laboratory
129	3D Construction Company
1647	Advanced Media Production Center
1438	Advanced Visual Systems Inc.
2012	AtLightSpeed
2040	AutoMedia Ltd.
1762	Autometric, Inc.
119	CGSD Corporation
2020	Charles River Media, Inc.
2333	Chromatek Inc.
243	Coryphaeus Software, Inc.
2521	DeskStation Technology, Inc.
805	Digital Equipment Corporation
627	Engineering Animation, Inc.
905	Evans & Sutherland Computer Corporation
1105	Hewlett-Packard
1237	IBM Corporation
338	Image Technology
2023	Immersion Corporation
603	Intergraph Computer Systems
1743	International Memory Products of Illinois, Inc.
2032	InTrek Systems
1546	Logitech
2443	Minolta Corporation
2557	MuSe Technologies
1843	NeTpower
2139	Northern Digital Inc.
412	Numerical Algorithms Group, Inc.
2324	NVision, Inc.
1532	Onyx Computing, Inc.
2344	Orphan Technologies
1949	Paradigm Simulation, Inc.
737	Parallax Graphics, Inc.
1829	Portable Graphics, Inc.
2042	Questar Productions
1862	Real 3D
421	Research Triangle Institute
1725	Sense8 Corporation
2129	Sony Pictures High Definition Center
1531	StereoGraphics Corporation
1029	Template Graphics Software, Inc.
920	Texas Memory Systems, Inc.
2748	Visible Productions
2505	VRex, Inc.
2340	Western Scientific, Inc.

GIS/mapping

Booth	
2306	5DT (Fifth Dimension Technologies)
1438	Advanced Visual Systems Inc.
2012	AtLightSpeed
1762	Autometric, Inc.
2333	Chromatek Inc.
243	Coryphaeus Software, Inc.
805	Digital Equipment Corporation
2750	Digital Wisdom Inc.
1105	Hewlett-Packard
1237	IBM Corporation
1743	International Memory Products of Illinois, Inc.
346	IRIS Graphics, Inc.
412	Numerical Algorithms Group, Inc.
1949	Paradigm Simulation, Inc.
2042	Questar Productions
421	Research Triangle Institute
1725	Sense8 Corporation
1531	StereoGraphics Corporation

Graphic art/design systems

Booth	
129	3D Construction Company
2255	3D/EYE
1750	3Dlabs, Inc.
537	5D Ltd.
1819	Adobe Systems Inc.
1419	Alias | Wavefront
2720	Alien Skin Software, LLC
1219	Apple Computer, Inc.
1917	Apunix Computer Services
2012	AtLightSpeed
1923	auto.des.sys, Inc.
1805	Avid Technology, Inc.
2060	Axial Systems, Inc.
2030	Balboa Capital
2111	BioVision
1905	Caligari Corporation
337	Camera Di Commercio di Milano - D.I.M.M.I.
2333	Chromatek Inc.
844	Chyron Corporation
243	Coryphaeus Software, Inc.
117	Digital Compositing Systems, Inc.
730	Digital Semiconductor
2423	DIGITAL SIGHT + SOUND INC.
2750	Digital Wisdom Inc.
2529	Digits 'n Art Software, Inc.
1715	ElectricImage, Inc.
221	ELSA Inc.
2550	Falcon Systems
2738	FARO Technologies Inc.
1105	Hewlett-Packard
338	Image Technology
2023	Immersion Corporation
1437	Integrated Computing Engines, Inc.
1837	Interactive Effects
603	Intergraph Computer Systems
1743	International Memory Products of Illinois, Inc.
346	IRIS Graphics, Inc.
212	Lightscape Technologies, Inc.
127	Linker Systems
2506	Macromedia
2010	Mediascape Corporation
2037	MetaTools, Inc.
1843	NeTpower
1656	NewTek, Incorporated
1130	Nichimen Graphics, Inc.
1532	Onyx Computing, Inc.
2344	Orphan Technologies
2744	Professional Marketing Services, Inc.
2117	ProMax Technology
2325	Quantel Inc.
121	Radiance Software
503	Ron Scott Inc.
2024	Scala, Inc.
719	Softimage
2706	Spaceward Graphics Limited
1510	Springer-Verlag
1531	StereoGraphics Corporation
2545	Thomson Broadcast, Inc.
2028	Westwood Studios

Graphics accelerator boards

Booth	
2511	3Dfx Interactive, Inc.
1750	3Dlabs, Inc.
527	AccelGraphics, Inc.
2012	AtLightSpeed
2521	DeskStation Technology, Inc.
417	Diamond Multimedia
805	Digital Equipment Corporation
730	Digital Semiconductor
221	ELSA Inc.
905	Evans & Sutherland Computer Corporation
203	Fujitsu Microelectronics, Inc.
2455	General Reality Company
1105	Hewlett-Packard
1237	IBM Corporation
1437	Integrated Computing Engines, Inc.
603	Intergraph Computer Systems
743	Matrox Video Products Group
2305	Mitsubishi Electronics America, Inc.
1843	NeTpower
2361	Omnicomp Graphics Corporation
2744	Professional Marketing Services, Inc.
2117	ProMax Technology
637	Radius Inc.
1862	Real 3D
1725	Sense8 Corporation
2706	Spaceward Graphics Limited
1121	Sun Microsystems, Inc.
2429	Synthetic Images, Inc.
938	Tech-Source Inc.
2340	Western Scientific, Inc.

Graphics standards software

Booth	
2255	3D/EYE
2362	3rd Dimension Technologies, Inc.
1819	Adobe Systems Inc.
1438	Advanced Visual Systems Inc.
1219	Apple Computer, Inc.
312	Equilibrium
1105	Hewlett-Packard
1237	IBM Corporation
1843	NeTpower
2308	Pixar Animation Studios
1829	Portable Graphics, Inc.
2332	Positron
1725	Sense8 Corporation
2706	Spaceward Graphics Limited
1121	Sun Microsystems, Inc.
1029	Template Graphics Software, Inc.
1345	Xaos Tools, Inc.

Hardcopy devices; photographs/slides

Booth	
946	(Art)^n Laboratory
1917	Apunix Computer Services
338	Image Technology
838	Management Graphics, Inc.
2443	Minolta Corporation
2744	Professional Marketing Services, Inc.
2049	Pthalo Systems, Inc.

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Early proposals for Panels, Courses, Sketches, the Electric Garden, and Computer Animation Festival

13 NOVEMBER 1996
Final Online Panel submissions

11 DECEMBER 1996
Final Course submissions

8 JANUARY 1997
Final Educators Program submissions

15 JANUARY 1997
Papers from North America
Final Panel submissions

17 JANUARY 1997
Papers from outside North America

29 JANUARY 1997
Final Electric Garden submissions

12 FEBRUARY 1997
Ongoings: The Fine Arts Gallery final submissions

12 MARCH 1997
Student Volunteer applications, Pioneer Grant applications

19 MARCH 1997
Technical Slide Set submissions

16 APRIL 1997
Final Sketches submissions for publications

23 APRIL 1997
Final Computer Animation Festival submissions

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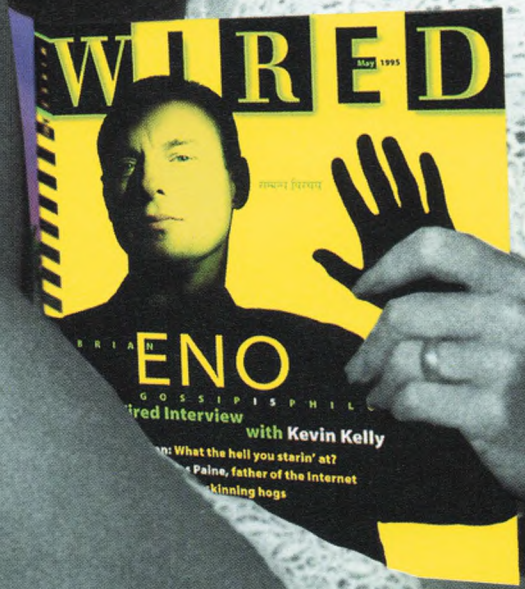
rolls over you,
you're either
part of the steamroller
or part of
the road.



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338	Image Technology
346	IRIS Graphics, Inc.
2616	LaserMaster Corporation
838	Management Graphics, Inc.
2443	Minolta Corporation
2225	Mutoh America Inc.
2744	Professional Marketing Services, Inc.
2340	Western Scientific, Inc.

HDTV

Booth	
1737	Extron Electronics, Inc.
127	Linker Systems
912	MMS Multi Media Systems GmbH
303	NEC Electronics Inc.
2355	NHK HDTV GROUP
2061	QuVIS Inc.
1041	Society of Motion Pictures and Television Engineers (SMPTE)
2129	Sony Pictures High Definition Center
2545	Thomson Broadcast, Inc.

High performance graphics processors

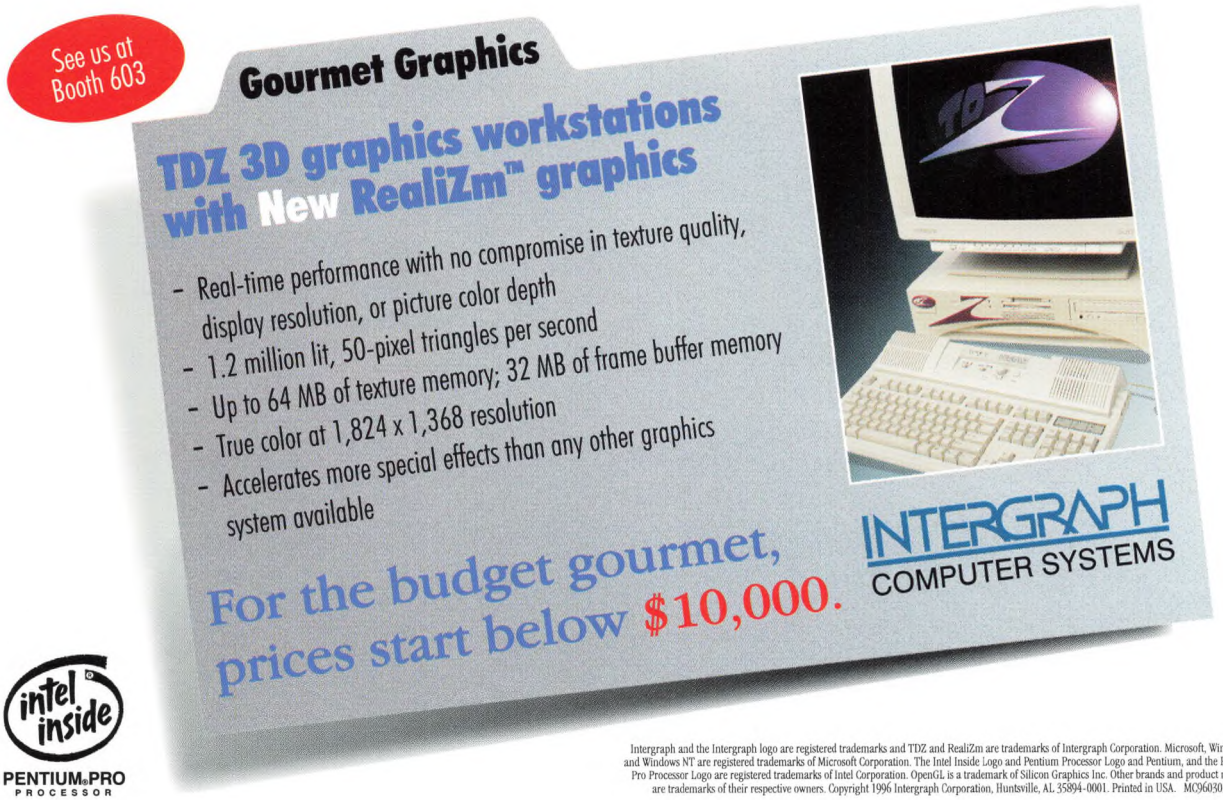
Booth	
2511	3Dfx Interactive, Inc.
1750	3Dlabs, Inc.
2012	AtLightSpeed
2724	Autologic Information International
1229	Canon U.S.A., Inc.
2521	DeskStation Technology, Inc.
805	Digital Equipment Corporation
730	Digital Semiconductor
2423	DIGITAL SIGHT + SOUND INC.
221	ELSA Inc.
2006	Ensemble Designs Inc.
312	Equilibrium
905	Evans & Sutherland Computer Corporation
2550	Falcon Systems
1105	Hewlett-Packard
2316	HPCwire
1237	IBM Corporation
1437	Integrated Computing Engines, Inc.
603	Intergraph Computer Systems
1743	International Memory Products of Illinois, Inc.
743	Matrox Video Products Group
1756	Miranda Technologies Inc.
2305	Mitsubishi Electronics America, Inc.
303	NEC Electronics Inc.
1843	NeTpower
2011	Parity Systems Inc.
2325	Quantel Inc.
1862	Real 3D
422	S-MOS Systems, Inc.
2129	Sony Pictures High Definition Center
2706	Spaceward Graphics Limited
1121	Sun Microsystems, Inc.
2429	Synthetic Images, Inc.
2545	Thomson Broadcast, Inc.

High resolution graphic display systems

Booth	
1337	BARCO, Inc.
243	Coryphaeus Software, Inc.
2521	DeskStation Technology, Inc.
730	Digital Semiconductor
2423	DIGITAL SIGHT + SOUND INC.
905	Evans & Sutherland Computer Corporation
2550	Falcon Systems
1105	Hewlett-Packard
1237	IBM Corporation
919	Intel Corporation
603	Intergraph Computer Systems
1743	International Memory Products of Illinois, Inc.
2017	Intoons Entertainment Group
1627	Lightwave Communications
1756	Miranda Technologies Inc.
2305	Mitsubishi Electronics America, Inc.
912	MMS Multi Media Systems GmbH
303	NEC Electronics Inc.
1843	NeTpower
2355	NHK HDTV GROUP
2744	Professional Marketing Services, Inc.
1924	Proxima
2325	Quantel Inc.
2061	QuVIS Inc.
2706	Spaceward Graphics Limited
1121	Sun Microsystems, Inc.
938	Tech-Source Inc.

Image processing

Booth	
129	3D Construction Company
537	5D Ltd.
1438	Advanced Visual Systems Inc.
2720	Alien Skin Software, LLC
133	Analogus Inc.
2012	AtLightSpeed
2040	AutoMedia Ltd.
1762	Autometric, Inc.
1805	Avid Technology, Inc.
2020	Charles River Media, Inc.
2333	Chromatek Inc.
2261	Denim Software
2521	DeskStation Technology, Inc.
117	Digital Compositing Systems, Inc.
2423	DIGITAL SIGHT + SOUND INC.
1137	Eastman Kodak Company
312	Equilibrium
905	Evans & Sutherland Computer Corporation
1737	Extron Electronics, Inc.
327	Fractal Design Corporation
203	Fujitsu Microelectronics, Inc.
1105	Hewlett-Packard
1644	IMAGICA Corporation of America
1437	Integrated Computing Engines, Inc.
1837	Interactive Effects
603	Intergraph Computer Systems



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1856 Motion Analysis Corporation
1843 NeTpower
1656 NewTek, Incorporated
1130 Nichimen Graphics, Inc.
412 Numerical Algorithms Group, Inc.
2344 Orphan Technologies
1528 P.E. Photron
1949 Paradigm Simulation, Inc.
1645 ParaGraph International
737 Parallax Graphics, Inc.
2538 PIXIBOX-PEGS
2744 Professional Marketing Services, Inc.
2325 Quantel Inc.
2061 QuVIS Inc.
1862 Real 3D
2558 REM INFOGRAFICA, S.A.
503 Ron Scott Inc.
2024 Scala, Inc.
1041 Society of Motion Pictures and Television Engineers (SMPTE)
2129 Sony Pictures High Definition Center
1121 Sun Microsystems, Inc.
1029 Template Graphics Software, Inc.
920 Texas Memory Systems, Inc.
2748 Visible Productions
2340 Western Scientific, Inc.
1345 Xaos Tools, Inc.

Industrial design

Booth

946 (Art)^n Laboratory
129 3D Construction Company
2255 3D/EYE
1419 Alias | Wavefront
1923 auto.des.sys, Inc.
1730 Cyberware
2423 DIGITAL SIGHT + SOUND INC.
2529 Digits 'n Art Software, Inc.
627 Engineering Animation, Inc.
1105 Hewlett-Packard
338 Image Technology
1837 Interactive Effects
346 IRIS Graphics, Inc.
2415 Laser InSpeck inc.
212 Lightscape Technologies, Inc.
1546 Logitech
1929 MultiGen Inc.
2139 Northern Digital Inc.
1949 Paradigm Simulation, Inc.
1829 Portable Graphics, Inc.
121 Radiance Software
1531 StereoGraphics Corporation
2340 Western Scientific, Inc.

Input devices

Booth

2306 5DT (Fifth Dimension Technologies)
511 Ascension Technology Corporation
2233 CalComp
1730 Cyberware
1037 Diaquest
2423 DIGITAL SIGHT + SOUND INC.
2738 FARO Technologies Inc.
2455 General Reality Company
2023 Immersion Corporation
1743 International Memory Products of Illinois, Inc.
2415 Laser InSpeck inc.
1546 Logitech
2443 Minolta Corporation
2139 Northern Digital Inc.
2324 NVision, Inc.
744 Oxberry LLC
1705 Polhemus
2744 Professional Marketing Services, Inc.
837 Wacom Technology Corporation

Medical imaging software

Booth

946 (Art)^n Laboratory
129 3D Construction Company
1647 Advanced Media Production Center
1438 Advanced Visual Systems Inc.
2012 AtLightSpeed
2333 Chromatek Inc.
1715 ElectricImage, Inc.
1105 Hewlett-Packard
2032 InTrek Systems
2557 MuSe Technologies
412 Numerical Algorithms Group, Inc.
2344 Orphan Technologies
1949 Paradigm Simulation, Inc.
737 Parallax Graphics, Inc.
2744 Professional Marketing Services, Inc.
1862 Real 3D
2129 Sony Pictures High Definition Center
2748 Visible Productions

Monitors and displays

Booth

1219 Apple Computer, Inc.
1337 BARCO, Inc.
2161 CTX Opto, Inc.
905 Evans & Sutherland Computer Corporation
2455 General Reality Company
1237 IBM Corporation
603 Intergraph Computer Systems
2017 Intoons Entertainment Group
1627 Lightwave Communications
2443 Minolta Corporation
2305 Mitsubishi Electronics America, Inc.
303 NEC Electronics Inc.
2117 ProMax Technology
1924 Proxima
637 Radius Inc.
2024 Scala, Inc.
2129 Sony Pictures High Definition Center
1121 Sun Microsystems, Inc.
2320 Viewsonic Corporation
2505 VRex, Inc.
2340 Western Scientific, Inc.

Multimedia/hypermedia

Booth

129 3D Construction Company
2255 3D/EYE
2511 3Dfx Interactive, Inc.
2306 5DT (Fifth Dimension Technologies)
1043 Acuris Inc.
1819 Adobe Systems Inc.
1647 Advanced Media Production Center
1419 Alias | Wavefront
2127 AniCom
1219 Apple Computer, Inc.
2722 Artbeats Software, Inc.
2040 AutoMedia Ltd.
1762 Autometric, Inc.
2730 AXA Corporation
2060 Axial Systems, Inc.
2155 Black Sun Interactive, Inc.
2728 CAD Institute
427 Cambridge Animation Systems
337 Camera Di Commercio di Milano - D.I.M.M.I.
2020 Charles River Media, Inc.
2333 Chromatek Inc.
2005 Cinebase Software
2109 Cogswell Polytechnical College
2644 Creative Equipment International
2161 CTX Opto, Inc.
1519 Media 100/Data Translation
2261 Denim Software
2521 DeskStation Technology, Inc.
417 Diamond Multimedia
1037 Diaquest
2029 Digimation, Inc.
805 Digital Equipment Corporation
2423 DIGITAL SIGHT + SOUND INC.
2750 Digital Wisdom Inc.
2529 Digits 'n Art Software, Inc.
1715 ElectricImage, Inc.
627 Engineering Animation, Inc.
312 Equilibrium
2550 Falcon Systems
2738 FARO Technologies Inc.
914 Folsom Research Inc.
203 Fujitsu Interactive
1105 Hewlett-Packard
1237 IBM Corporation
338 Image Technology
2337 in:sync corporation
1437 Integrated Computing Engines, Inc.
919 Intel Corporation
1743 International Memory Products of Illinois, Inc.
819 Kinetix
1637 LEGASYS International
127 Linker Systems
403 Lucent Technologies - Software Solutions Group
2506 Macromedia
743 Matrox Video Products Group
2010 Mediascape Corporation
2650 mFactory
1545 Montpellier Technopole
303 NEC Electronics Inc.
1843 NeTpower
1656 NewTek, Incorporated
2355 NHK HDTV GROUP
1130 Nichimen Graphics, Inc.
2324 NVision, Inc.
107 Odyssey Productions
2754 Omniview, Inc.
1532 Onyx Computing, Inc.
1528 P.E. Photron
2630 Panasonic Broadcast & Television Systems Company
1645 ParaGraph International
737 Parallax Graphics, Inc.
2011 Parity Systems Inc.
2330 PC Video Conversion
2538 PIXIBOX-PEGS
2042 Questar Productions
121 Radiance Software
1862 Real 3D
2050 Rhythm & Hues Studios
2024 Scala, Inc.
1505 Scitex Digital Video, Inc.
1725 Sense8 Corporation
719 Softimage
2129 Sony Pictures High Definition Center
1510 Springer-Verlag
2530 Strata, Inc.
1121 Sun Microsystems, Inc.
2334 Syndesis Corporation
1029 Template Graphics Software, Inc.
2712 Transoft Technology Corporation
2363 Virtual
2143 Virtuality, Inc.
1840 Virtus Corporation
2748 Visible Productions
2505 VRex, Inc.
2340 Western Scientific, Inc.
2028 Westwood Studios

Networking; hardware/software/services

Booth

1819 Adobe Systems Inc.
2724 Autologic Information International
1762 Autometric, Inc.
2030 Balboa Capital
2155 Black Sun Interactive, Inc.
2020 Charles River Media, Inc.
2005 Cinebase Software
442 Consan Storage Solutions
2521 DeskStation Technology, Inc.
805 Digital Equipment Corporation
2423 DIGITAL SIGHT + SOUND INC.
2006 Ensemble Designs Inc.
905 Evans & Sutherland Computer Corporation
2550 Falcon Systems
203 Fujitsu Microelectronics, Inc.
1237 IBM Corporation
1743 International Memory Products of Illinois, Inc.
1738 Kingston Technology Corporation
1627 Lightwave Communications
2650 mFactory
1943 MicroNet Technology Inc.
1843 NeTpower
1949 Paradigm Simulation, Inc.
1645 ParaGraph International
737 Parallax Graphics, Inc.
2011 Parity Systems Inc.
2744 Professional Marketing Services, Inc.
2024 Scala, Inc.
1505 Scitex Digital Video, Inc.
2706 Spaceward Graphics Limited
541 Sprint
1650 StreamLogic Corporation
1121 Sun Microsystems, Inc.
2712 Transoft Technology Corporation
843 Vangard Technology
2340 Western Scientific, Inc.

OEM components

Booth	
2511	3Dfx Interactive, Inc.
537	5D Ltd.
1043	Acuris Inc.
511	Ascension Technology Corporation
930	Bit 3 Computer Corporation
730	Digital Semiconductor
221	ELSA Inc.
905	Evans & Sutherland Computer Corporation
1738	Kingston Technology Corporation
2415	Laser InSpeck inc.
1546	Logitech
743	Matrox Video Products Group
2443	Minolta Corporation
1756	Miranda Technologies Inc.
2305	Mitsubishi Electronics America, Inc.
912	MMS Multi Media Systems GmbH
1929	MultiGen Inc.
2330	PC Video Conversion
2744	Professional Marketing Services, Inc.
1862	Real 3D
422	S-MOS Systems, Inc.
1531	StereoGraphics Corporation
2429	Synthetic Images, Inc.
938	Tech-Source Inc.
2340	Western Scientific, Inc.

Paint systems

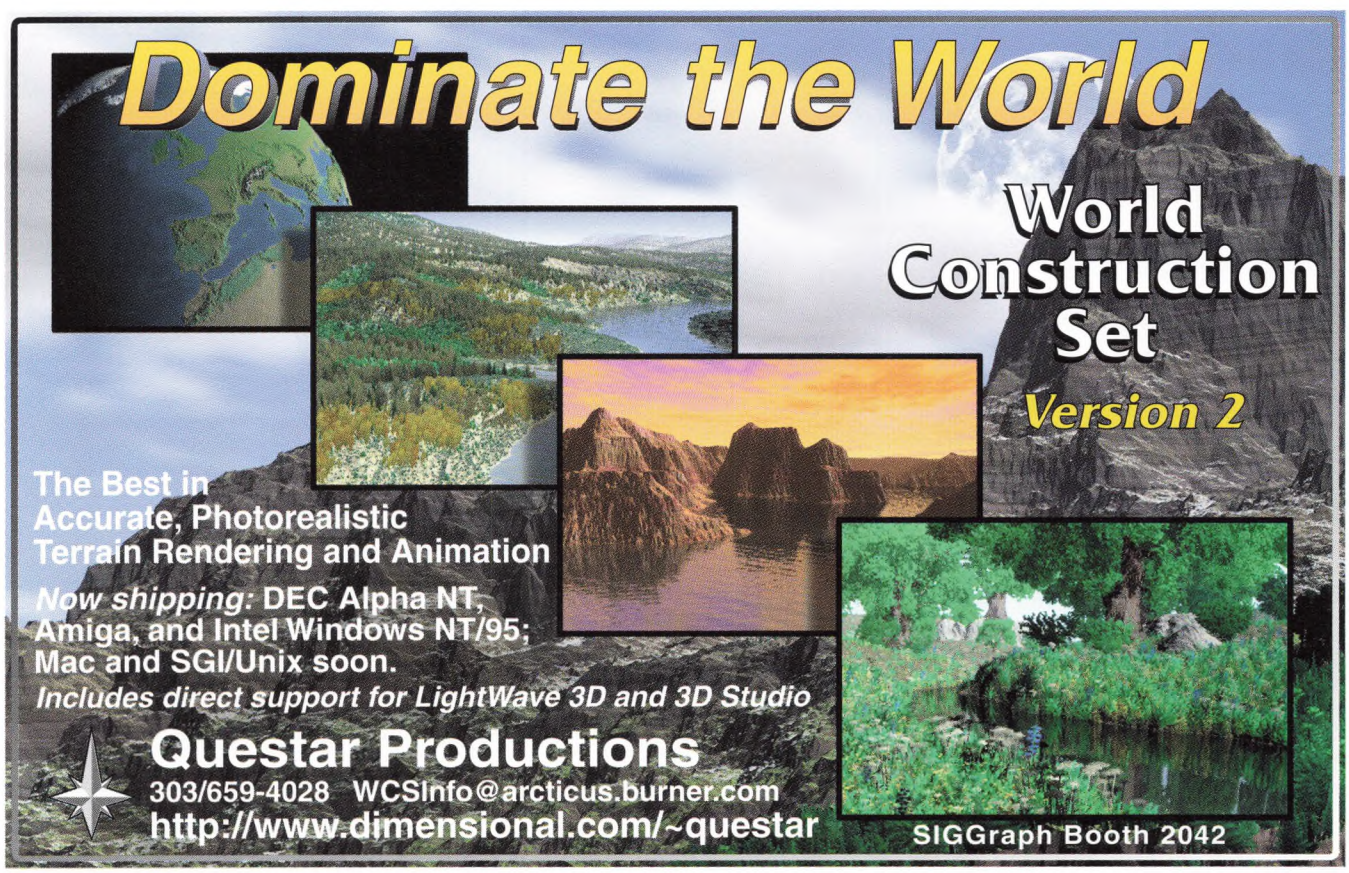
Booth	
2544	4DVISION
1419	Alias | Wavefront
2012	AtLightSpeed
2730	AXA Corporation
844	Chyron Corporation
2261	Denim Software
2423	DIGITAL SIGHT + SOUND INC.
2529	Digits 'n Art Software, Inc.
1837	Interactive Effects
127	Linker Systems
743	Matrox Video Products Group
1843	NeTpower
1656	NewTek, Incorporated
1130	Nichimen Graphics, Inc.
1532	Onyx Computing, Inc.
2538	PIXIBOX-PEGS
2315	Play Incorporated
2332	Positron
503	Ron Scott Inc.
719	Softimage
2129	Sony Pictures High Definition Center
2706	Spaceward Graphics Limited
1345	Xaos Tools, Inc.

PC add-on products

Booth	
2511	3Dfx Interactive, Inc.
2306	5DT (Fifth Dimension Technologies)
527	AccelGraphics, Inc.
2431	Anacapa Micro Products
133	Analogus Inc.
1219	Apple Computer, Inc.
1229	Canon U.S.A., Inc.
442	Consan Storage Solutions
2521	DeskStation Technology, Inc.
1037	Diaquest
929	Digital Processing Systems
221	ELSA Inc.
2738	FARO Technologies Inc.
1641	FWB, Inc.
1738	Kingston Technology Corporation
743	Matrox Video Products Group
1943	MicroNet Technology Inc.
2443	Minolta Corporation
2361	Omnicomp Graphics Corporation
2330	PC Video Conversion
2744	Professional Marketing Services, Inc.
1862	Real 3D
422	S-MOS Systems, Inc.
2706	Spaceward Graphics Limited
1531	StereoGraphics Corporation
2429	Synthetic Images, Inc.
1029	Template Graphics Software, Inc.
2143	Virtuality, Inc.
2340	Western Scientific, Inc.
1345	Xaos Tools, Inc.

PC-based systems

Booth	
946	(Art)^n Laboratory
2511	3Dfx Interactive, Inc.
2306	5DT (Fifth Dimension Technologies)
1438	Advanced Visual Systems Inc.
133	Analogus Inc.
1219	Apple Computer, Inc.
442	Consan Storage Solutions
2644	Creative Equipment International
805	Digital Equipment Corporation
730	Digital Semiconductor
2423	DIGITAL SIGHT + SOUND INC.
905	Evans & Sutherland Computer Corporation
1445	Fast Electronic U.S., Inc.
2455	General Reality Company
1105	Hewlett-Packard
1237	IBM Corporation
1437	Integrated Computing Engines, Inc.
919	Intel Corporation
603	Intergraph Computer Systems
2032	InTrek Systems
819	Kinetix
2415	Laser InSpeck inc.
127	Linker Systems
743	Matrox Video Products Group
2650	mFactory
1929	MultiGen Inc.
1843	NeTpower
2630	Panasonic Broadcast & Television Systems Company
2744	Professional Marketing Services, Inc.
1862	Real 3D
421	Research Triangle Institute
2024	Scala, Inc.
1725	Sense8 Corporation
2706	Spaceward Graphics Limited
2356	Storage Concepts
2429	Synthetic Images, Inc.
1621	Videomedia, Inc.
2143	Virtuality, Inc.



Personal digital applications (PDAs)

Booth

337 Camera Di Commercio di Milano - D.I.M.M.I.
203 Fujitsu Microelectronics, Inc.

Portable products

Booth

133 Analogus Inc.
2644 Creative Equipment International
2161 CTX Opto, Inc.
730 Digital Semiconductor
2738 FARO Technologies Inc.
1105 Hewlett-Packard
1738 Kingston Technology Corporation
1637 LEGASYS International
2443 Minolta Corporation
1656 NewTek, Incorporated
2139 Northern Digital Inc.
2744 Professional Marketing Services, Inc.
1029 Template Graphics Software, Inc.

Projectors; video & HDTV

Booth

2030 Balboa Capital
1337 BARCO, Inc.
337 Camera Di Commercio di Milano - D.I.M.M.I.
2161 CTX Opto, Inc.
2017 Intoons Entertainment Group
1627 Lightwave Communications
303 NEC Electronics Inc.
1924 Proxima
2129 Sony Pictures High Definition Center
2505 VRex, Inc.

Publications

Booth

523 A K Peters, Ltd.
1522 Academic Press, Inc.
1605 Addison-Wesley Publishing Company
942 Advanced Imaging
2409 Animation Magazine
1518 AP PROFESSIONAL
337 Camera Di Commercio di Milano - D.I.M.M.I.
119 CGSD Corporation
2020 Charles River Media, Inc.
1009 Computer Graphics World
2718 Desktop Engineering Magazine
2738 FARO Technologies Inc.
2316 HPCwire
2752 I. D. Magazine
1506 IEEE Computer Society
445 IMAS Publishing Group
1743 International Memory Products of Illinois, Inc.
545 Intertec Publishing
1021 Knowledge Industry Publications, Inc.
2457 Macmillan Computer Publishing,
1444 Markee Magazine
311 Miller Freeman Inc.
1611 Morgan Kaufmann Publishers
438 O'Reilly and Associates, Inc.
107 Odyssey Productions
1810 PC Graphics & Video
2437 PCI-Silicon Graphics World
2262 POST Magazine
2338 Pre/Folio/Digital Creativity
2312 PWS Publishing Company
2746 Scientific Computing & Automation
1510 Springer-Verlag
2427 Van Nostrand Reinhold
2758 Variety's ON Production
2363 Virtual
1840 Virtus Corporation
1937 Wiley Computer Publishing
109 Wired

Rendering & image synthesis software

Booth

129 3D Construction Company
1750 3Dlabs, Inc.
537 5D Ltd.
1438 Advanced Visual Systems Inc.
1419 Alias | Wavefront
2127 AniCom
1219 Apple Computer, Inc.
2722 Artbeats Software, Inc.
2012 AtLightSpeed
1923 auto.des.sys, Inc.
1762 Autometric, Inc.
1805 Avid Technology, Inc.
1905 Caligari Corporation
337 Camera Di Commercio di Milano - D.I.M.M.I.
2333 Chromatek Inc.
243 Coryphaeus Software, Inc.
2521 DeskStation Technology, Inc.
2029 Digimation, Inc.
1137 Eastman Kodak Company
1715 ElectricImage, Inc.
627 Engineering Animation, Inc.
2006 Ensemble Designs Inc.
2738 FARO Technologies Inc.
203 Fujitsu Microelectronics, Inc.
2455 General Reality Company
404 Hash Inc.
1105 Hewlett-Packard
1437 Integrated Computing Engines, Inc.
1837 Interactive Effects
819 Kinetix
212 Lightscape Technologies, Inc.
2105 LightWork Design Ltd.
2037 MetaTools, Inc.
1843 NeTpower
1656 NewTek, Incorporated
1130 Nichimen Graphics, Inc.
412 Numerical Algorithms Group, Inc.
2754 Omniview, Inc.
1532 Onyx Computing, Inc.
2344 Orphan Technologies
2308 Pixar Animation Studios
2042 Questar Productions
121 Radiance Software
2558 REM INFOGRAFICA, S.A.
1725 Sense8 Corporation
317 Side Effects Software
719 Softimage
2129 Sony Pictures High Definition Center
1510 Springer-Verlag
2530 Strata, Inc.
1029 Template Graphics Software, Inc.
2545 Thomson Broadcast, Inc.
1840 Virtus Corporation
1345 Xaos Tools, Inc.

Scanners/digitizing cameras; scan converters

Booth

129 3D Construction Company
1917 Apunix Computer Services
2030 Balboa Capital
2233 CalComp
1730 Cyberware
1137 Eastman Kodak Company
1737 Extron Electronics, Inc.
914 Folsom Research Inc.
203 Fujitsu Microelectronics, Inc.
1644 IMAGICA Corporation of America
2023 Immersion Corporation
1743 International Memory Products of Illinois, Inc.
2415 Laser InSpeck inc.
2139 Northern Digital Inc.
2324 NVision, Inc.
744 Oxberry LLC
1528 P.E. Photron
737 Parallax Graphics, Inc.
2330 PC Video Conversion
2744 Professional Marketing Services, Inc.
2049 Pthalo Systems, Inc.
1617 RGB Spectrum
2129 Sony Pictures High Definition Center

Simulation

Booth

129 3D Construction Company
2511 3Dfx Interactive, Inc.
2306 5DT (Fifth Dimension Technologies)
1647 Advanced Media Production Center
1762 Autometric, Inc.
2060 Axial Systems, Inc.
1337 BARCO, Inc.
2728 CAD Institute
337 Camera Di Commercio di Milano - D.I.M.M.I.
119 CGSD Corporation
2333 Chromatek Inc.
243 Coryphaeus Software, Inc.
418 Crystal River Engineering
1730 Cyberware
2423 DIGITAL SIGHT + SOUND INC.
627 Engineering Animation, Inc.
905 Evans & Sutherland Computer Corporation
2455 General Reality Company
1105 Hewlett-Packard
2023 Immersion Corporation
603 Intergraph Computer Systems
2032 InTrek Systems
212 Lightscape Technologies, Inc.
1929 MultiGen Inc.
2557 MuSe Technologies
1656 NewTek, Incorporated
412 Numerical Algorithms Group, Inc.
1532 Onyx Computing, Inc.
1949 Paradigm Simulation, Inc.
2042 Questar Productions
121 Radiance Software
1862 Real 3D
421 Research Triangle Institute
1725 Sense8 Corporation
2129 Sony Pictures High Definition Center
1531 StereoGraphics Corporation
2429 Synthetic Images, Inc.
1029 Template Graphics Software, Inc.
2363 Virtual
2748 Visible Productions
2340 Western Scientific, Inc.

Software (other)

Booth

946 (Art)^n Laboratory
2362 3rd Dimension Technologies, Inc.
2544 4DVISION
523 A K Peters, Ltd.
1043 Acuris Inc.
1819 Adobe Systems Inc.
2522 AirWorks
2127 AniCom
2012 AtLightSpeed
1923 auto.des.sys, Inc.
2040 AutoMedia Ltd.
1762 Autometric, Inc.
1805 Avid Technology, Inc.
2155 Black Sun Interactive, Inc.
2020 Charles River Media, Inc.
2005 Cinebase Software
943 Comunicacion Integral, S.L.
2328 Creative Digital Research
417 Diamond Multimedia
117 Digital Compositing Systems, Inc.
2750 Digital Wisdom Inc.
1715 ElectricImage, Inc.
627 Engineering Animation, Inc.
203 Fujitsu Interactive
1237 IBM Corporation
2337 in:sync corporation
819 Kinetix
212 Lightscape Technologies, Inc.
403 Lucent Technologies - Software Solutions Group
2037 MetaTools, Inc.
2650 mFactory
2443 Minolta Corporation
1929 MultiGen Inc.
1656 NewTek, Incorporated
412 Numerical Algorithms Group, Inc.
438 O'Reilly and Associates, Inc.
2754 Omniview, Inc.
1532 Onyx Computing, Inc.
744 Oxberry LLC
1528 P.E. Photron
1645 ParaGraph International
2011 Parity Systems Inc.
2308 Pixar Animation Studios
1829 Portable Graphics, Inc.
2024 Scala, Inc.
1505 Scitex Digital Video, Inc.
1725 Sense8 Corporation
1510 Springer-Verlag
2147 Square L.A. Inc.
2530 Strata, Inc.
1121 Sun Microsystems, Inc.
1029 Template Graphics Software, Inc.
2516 Toon Boom Technologies Inc.
2712 Transoft Technology Corporation
1840 Virtus Corporation
2505 VRex, Inc.
2028 Westwood Studios
1345 Xaos Tools, Inc.

Storage devices; tape/disk/CD-ROM

Booth

2431 Anacapa Micro Products
1917 Apunix Computer Services
517 Ciprico Inc.
442 Consan Storage Solutions
2328 Creative Digital Research
805 Digital Equipment Corporation
2550 Falcon Systems
1641 FWB, Inc.
928 Herstal Automation
1105 Hewlett-Packard
1237 IBM Corporation
603 Intergraph Computer Systems
1743 International Memory Products of Illinois, Inc.
2032 InTrek Systems
1738 Kingston Technology Corporation
1637 LEGASYS International
411 Maximum Strategy, Inc.
2055 MegaDrive Systems, Inc.
1943 MicroNet Technology Inc.
1756 Miranda Technologies Inc.
912 MMS Multi Media Systems GmbH
2355 NHK HDTV GROUP
2011 Parity Systems Inc.
2117 ProMax Technology
2325 Quantel Inc.
2061 QuVIS Inc.
1505 Scitex Digital Video, Inc.
2732 Sierra Design Labs
2356 Storage Concepts
1650 StreamLogic Corporation
1005 Tektronix Inc.
920 Texas Memory Systems, Inc.
2545 Thomson Broadcast, Inc.
843 Vangard Technology
2340 Western Scientific, Inc.
1538 Winsted Corporation

Systems integrators

Booth

2306 5DT (Fifth Dimension Technologies)
1762 Autometric, Inc.
442 Consan Storage Solutions
243 Coryphaeus Software, Inc.
805 Digital Equipment Corporation
2423 DIGITAL SIGHT + SOUND INC.
905 Evans & Sutherland Computer Corporation
2550 Falcon Systems
928 Herstal Automation
1105 Hewlett-Packard
1237 IBM Corporation
1743 International Memory Products of Illinois, Inc.
2032 InTrek Systems
2557 MuSe Technologies
1949 Paradigm Simulation, Inc.
2011 Parity Systems Inc.
2744 Professional Marketing Services, Inc.
2117 ProMax Technology
421 Research Triangle Institute
1725 Sense8 Corporation
843 Vangard Technology
2340 Western Scientific, Inc.

Teleconferencing/collaborative products

Booth

2306 5DT (Fifth Dimension Technologies)
1647 Advanced Media Production Center
1917 Apunix Computer Services
805 Digital Equipment Corporation
221 ELSA Inc.
914 Folsom Research Inc.
2455 General Reality Company
1105 Hewlett-Packard
1237 IBM Corporation
2557 MuSe Technologies
737 Parallax Graphics, Inc.
2061 QuVIS Inc.
2129 Sony Pictures High Definition Center
541 Sprint
1029 Template Graphics Software, Inc.

Terminals

Booth

1237 IBM Corporation
1627 Lightwave Communications
938 Tech-Source Inc.
2340 Western Scientific, Inc.

Turnkey systems

Booth

946 (Art)^n Laboratory
2306 5DT (Fifth Dimension Technologies)
1438 Advanced Visual Systems Inc.
1762 Autometric, Inc.
1805 Avid Technology, Inc.
243 Coryphaeus Software, Inc.
2644 Creative Equipment International
418 Crystal River Engineering
2423 DIGITAL SIGHT + SOUND INC.
1445 Fast Electronic U.S., Inc.
1237 IBM Corporation
338 Image Technology
1743 International Memory Products of Illinois, Inc.
2557 MuSe Technologies
2630 Panasonic Broadcast & Television Systems Company
1949 Paradigm Simulation, Inc.
2744 Professional Marketing Services, Inc.
1505 Scitex Digital Video, Inc.
2706 Spaceward Graphics Limited
541 Sprint
2356 Storage Concepts
2545 Thomson Broadcast, Inc.
843 Vangard Technology
2044 Vicon Motion Systems
2143 Virtuality, Inc.
2340 Western Scientific, Inc.

User interface

Booth

946 (Art)^n Laboratory
1438 Advanced Visual Systems Inc.
511 Ascension Technology Corporation
2333 Chromatek Inc.
2455 General Reality Company
1105 Hewlett-Packard
1237 IBM Corporation
2023 Immersion Corporation
2037 MetaTools, Inc.
1545 Montpellier Technopole
2557 MuSe Technologies
2355 NHK HDTV GROUP
2754 Omniview, Inc.
2630 Panasonic Broadcast & Television Systems Company
1949 Paradigm Simulation, Inc.
1505 Scitex Digital Video, Inc.
1029 Template Graphics Software, Inc.
2748 Visible Productions

Video technology

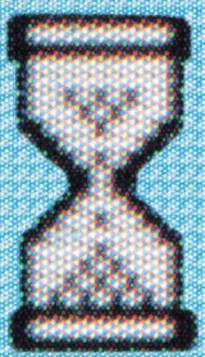
Booth

2511 3Dfx Interactive, Inc.
1043 Acuris Inc.
1647 Advanced Media Production Center
2127 AniCom
1219 Apple Computer, Inc.
2012 AtLightSpeed
2040 AutoMedia Ltd.
1805 Avid Technology, Inc.
2030 Balboa Capital
337 Camera Di Commercio di Milano - D.I.M.M.I.
2644 Creative Equipment International
1519 Media 100/Data Translation
2261 Denim Software
2521 DeskStation Technology, Inc.
1037 Diaquest
929 Digital Processing Systems
2423 DIGITAL SIGHT + SOUND INC.
2006 Ensemble Designs Inc.
1737 Extron Electronics, Inc.
1445 Fast Electronic U.S., Inc.
914 Folsom Research Inc.
1237 IBM Corporation
1837 Interactive Effects
603 Intergraph Computer Systems
1743 International Memory Products of Illinois, Inc.
2017 Intoons Entertainment Group
2032 InTrek Systems
444 Leitch
1627 Lightwave Communications
743 Matrox Video Products Group
2037 MetaTools, Inc.
2443 Minolta Corporation
1756 Miranda Technologies Inc.
1843 NeTpower
1656 NewTek, Incorporated
2355 NHK HDTV GROUP
107 Odyssey Productions
2754 Omniview, Inc.
2630 Panasonic Broadcast & Television Systems Company
737 Parallax Graphics, Inc.
2330 PC Video Conversion
2117 ProMax Technology
2325 Quantel Inc.
2061 QuVIS Inc.
637 Radius Inc.
2024 Scala, Inc.
1505 Scitex Digital Video, Inc.
2732 Sierra Design Labs
2129 Sony Pictures High Definition Center
541 Sprint
2530 Strata, Inc.
1005 Tektronix Inc.
2044 Vicon Motion Systems
1621 Videomedia, Inc.
1345 Xaos Tools, Inc.

Virtual reality

Booth

946 (Art)^n Laboratory
129 3D Construction Company
2255 3D/EYE
1750 3Dlabs, Inc.
1442 3NAME3D
2362 3rd Dimension Technologies, Inc.
2306 5DT (Fifth Dimension Technologies)
527 AccelGraphics, Inc.
211 Accom, Inc.
1043 Acuris Inc.
2551 Adaptive Optics Associates, Inc., a United Technologies company
1647 Advanced Media Production Center
133 Analogus Inc.
2127 AniCom
2722 Artbeats Software, Inc.
511 Ascension Technology Corporation
2060 Axial Systems, Inc.
2155 Black Sun Interactive, Inc.
2728 CAD Institute
1905 Caligari Corporation
337 Camera Di Commercio di Milano - D.I.M.M.I.
119 CGSD Corporation
2333 Chromatek Inc.
243 Coryphaeus Software, Inc.
1730 Cyberware
2521 DeskStation Technology, Inc.
2423 DIGITAL SIGHT + SOUND INC.
2529 Digits 'n Art Software, Inc.
627 Engineering Animation, Inc.
905 Evans & Sutherland Computer Corporation
2455 General Reality Company
404 Hash Inc.
1105 Hewlett-Packard
1237 IBM Corporation
2023 Immersion Corporation
603 Intergraph Computer Systems
2032 InTrek Systems
212 Lightscape Technologies, Inc.
1545 Montpellier Languedoc-Roussillon Technopole
1929 MultiGen Inc.
2557 MuSe Technologies
1656 NewTek, Incorporated
2355 NHK HDTV GROUP
1130 Nichimen Graphics, Inc.
2139 Northern Digital Inc.
2361 Omnicomp Graphics Corporation
2754 Omniview, Inc.
1532 Onyx Computing, Inc.
2344 Orphan Technologies
1949 Paradigm Simulation, Inc.
1645 ParaGraph International
1705 Polhemus
2042 Questar Productions
121 Radiance Software
1862 Real 3D
2558 REM INFOGRAFICA, S.A.
421 Research Triangle Institute
422 S-MOS Systems, Inc.
2346 SensAble Technologies, Inc.
1725 Sense8 Corporation
1531 StereoGraphics Corporation
2530 Strata, Inc.
738 Superscape
2334 Syndesis Corporation
2429 Synthetic Images, Inc.
1029 Template Graphics Software, Inc.
2363 Virtual
2143 Virtuality, Inc.
1840 Virtus Corporation
2748 Visible Productions
2505 VRex, Inc.



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The longer you have to wait for your workstation, the longer it takes to get your product to market. But with our new line of HP VISUALIZE *workstations, you can have blindingly fast access to information as you visually navigate through data, no matter where it resides in your organization. These workstations let you and your colleagues work simultaneously in real time from different locations. In fact, seamlessly and quickly connecting people, processes and information across your virtual enterprise is the hallmark of our* HP VISUALIZE *workstation line. So why wait? Visit us at www.hp.com/go/workstations.*

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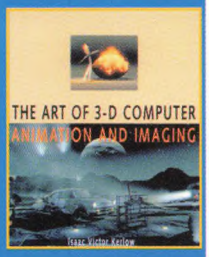
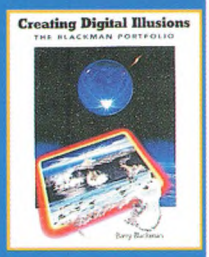
HEWLETT® PACKARD

Keep Up with The Latest In Digital Design From VNR

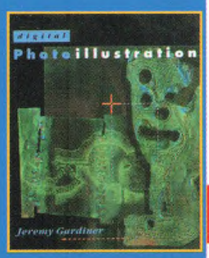
DIGITAL IMAGING



The Art of 3-D Computer Animation and Imaging
Isaac Victor Kerlow, Vice President, Creative Resources, Disney Interactive
This book presents a non-platform approach to 3-D computer graphics and animation. With helpful chapter summaries, trouble shooting tips, and step-by-step examples you can easily learn this process. **Author book signing—Wednesday, August 7th from 2-3 P.M. at the VNR Booth.**
0-442-01896-7 *Paperback* *$49.95*



Creating Digital Illusions: The Blackman Portfolio
Barry Blackman
Using his own prestigious clients as case studies, Blackman gives step-by-step instructions for the creation and manipulation of digital images. Written in a non-technical writing style, this easy to follow book is a must have for computer graphic specialists, graphic designers, art directors, and photographers.
0-442-02141-0 *Hardcover* *$49.95*



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Jeremy Gardiner
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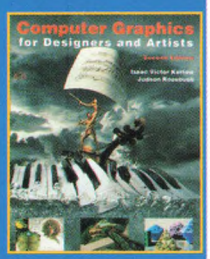

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3D Graphics Toolkits & APIS
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338 Image Technology

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912 MMS Multi Media Systems GmbH

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1043 Acuris Inc.

3D Rendering Chip
422 S-MOS Systems, Inc.

3D Software
327 Fractal Design Corporation

Asset Management
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Audio Visual & Live Performance
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Authoring Tools
2650 mFactory

Automated Graphics Processing for Multimedia & Web Delivery
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Automated Object Isolation
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844 Chyron Corporation

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Digital Color Film Recorders
906 CELCO

Digital Film Systems
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Education
2728 CAD Institute
2109 Cogswell Polytechnical College
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Enterprise Management
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Equipment Leasing & Financing
2314 The Republic Group, Inc.

Exhibition/Forum
1542 Imagina - INA

Film Recorder
2724 Autologic Information International

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2023 Immersion Corporation

Home Videos
107 Odyssey Productions

Immersive Conferencing
2306 5DT (Fifth Dimension Technologies)

Interactive TV Authoring
1345 Xaos Tools, Inc.

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ISDN Adapters
221 ELSA Inc.

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Lighting Analysis
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Motion Capture
2551 Adaptive Optics Associates, Inc., a United Technologies company
133 Analogus Inc.
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What is ACM SIGGRAPH?

ACM SIGGRAPH is the world's largest professional society for persons working in computer graphics and interactive techniques. It has members all over the world and in every facet of the computer graphics field. SIGGRAPH is one of over 35 Special Interest Groups of ACM, the Association for Computing Machinery.

SIGGRAPH is dedicated to the advancement of computer graphics and interactive techniques through activities that foster the exchange of information among graphics professionals of all kinds. The organization has a long tradition of bringing together a wide variety of people – users, researchers, teachers, product developers, artists, designers, and media developers – in an exciting exchange of ideas that benefit our entire community. We are proud of SIGGRAPH's rich, interdisciplinary nature and we invite you to become an active part of it.

How can I get involved?

The heart of SIGGRAPH is its active, talented core of volunteers, and we are always looking for new people with new ideas to keep SIGGRAPH vibrant. Your opportunities for involvement are as varied as our activities, some of which we describe below.

It's easy to find SIGGRAPH volunteers at SIGGRAPH 96. Many very involved volunteers will be in the SIGGRAPH organization's booth in the Hall E Lobby. To make it easy for you to find out how you can become involved in SIGGRAPH, we've organized a joint open house with the SIGGRAPH 97 conference called "Get Involved with SIGGRAPH." Come by and learn about both organization and conference opportunities from senior volunteers. If you can't make it to this get-together, drop by the SIGGRAPH booth and leave your name and areas of interest, or go by the meetings in your interest area that are listed on the next page and ask there.

How to be a SIGGRAPH volunteer

Opportunities to volunteer for the SIGGRAPH organization and the SIGGRAPH 97 conference, and a chance to meet highly involved SIGGRAPH volunteers, will be at the "Get Involved with SIGGRAPH" open house:
Wednesday, 7 August
5:30 pm to 7 pm
Room 95, Ernest N. Morial Convention Center

Why should I join SIGGRAPH?

Being a member of SIGGRAPH demonstrates your involvement in the computer graphics community and your support for SIGGRAPH's goals and activities – activities that support this entire community. The strength of SIGGRAPH's voice on issues important to our field depends on its activities and on the number and quality of our membership.

As a SIGGRAPH member, you receive the *Computer Graphics* newsletter, the *Conference Proceedings* and Proceedings CD-ROM, and the *Visual Proceedings* and Visual Proceedings CD-ROM. You may also choose a less expensive "Lite" membership that includes only the newsletter. All members enjoy discounts on SIGGRAPH conferences and publications, and have the opportunity to subscribe to the proceedings of other computer graphics-related conferences through the Member Plus program.

How do I join SIGGRAPH?

You can join SIGGRAPH at the conference at the ACM booth in the main lobby of the Ernest N. Morial Convention Center, or look for membership information at SIGGRAPH's online site, http://www.siggraph.org/

What does SIGGRAPH do?

Besides sponsoring the annual conference, SIGGRAPH has many activities that go on throughout the year and around the world. Many of the activity areas mentioned below have open meetings during SIGGRAPH 96; many of these are listed on the next page. Find an area that fits your interest, check out the schedule, and join us.

Education

SIGGRAPH has a very active Education Committee that supports computer graphics education in many fields as well as the use of computer graphics in education. The Education Committee has ongoing activities at many levels and in many disciplines involving educators from around the world. Among these activities are curriculum studies, a quarterly newsletter for educators, educational projects, and many annual conference activities for educators.

Education is the word most often used to describe SIGGRAPH's overall mission. The Education Committee welcomes new ideas and new volunteers to help us fulfill our educational mission. For information, contact Marc Barr, SIGGRAPH Director for Education, at the Education booth in the main lobby of the Ernest N. Morial Convention Center, or at barr@siggraph.org.

Publications

SIGGRAPH's Publications Committee is responsible for all of SIGGRAPH's publications in print, on CD-ROM, on video, and online. The committee is made up of people with skills in editing, writing, and producing different media, and is a great place for someone skilled in these areas to help others learn about computer graphics and interactive techniques. For information, contact Stephen Spencer, SIGGRAPH Director for Publications, at spencer@siggraph.org.

Other Conferences

SIGGRAPH sponsors or has formal cooperation with about a dozen other conferences each year. These include such events as the Interactive 3D Graphics Workshop, the Computational Geometry conference, the ACM Multimedia conference, the Volume Visualization symposium, UIST: User Interface Software and Technology conference, and the Solid Modeling conference. SIGGRAPH works with the organizers of SIGGRAPH-sponsored conferences and coordinates relationships with other conferences. For information, contact Chuck Hansen, SIGGRAPH Director at Large, at hansen@siggraph.org.

Professional Chapters

The SIGGRAPH Professional Chapters span the globe and form an international network of like-minded people who work throughout the year to develop, continue, and extend the work and achievements presented at the annual conference in ways that meet the needs of their local communities. Chapters meet regularly to explore a wide variety of program topics.

Each Professional Chapter draws its membership from a particular area or region where there are professionals in education, research, development, industry, art, design, or entertainment who are interested in the advancement of computer graphics, its related technologies, and its applications. Active Chapters are listed in the back of the *Conference Proceedings* and the newsletter. For information, contact Scott Lang, SIGGRAPH Director for Professional Chapters, at lang@siggraph.org.

Public Policy

SIGGRAPH's Public Policy Committee provides information on relevant external activities, such as proposed legislation, to SIGGRAPH members and others of the technical community and to provide education on the implications of technology to the non-technical community. For information, contact Bob Ellis, Chair of the Public Policy Committee, at ellis@siggraph.org.

SIGGRAPH meetings at the conference

Take a look at SIGGRAPH in action at committee and task force meetings during the conference. Find a group that fits your interest and join us. If you want more information, if you can't find a group that covers your interest, or if you aren't able to attend the meetings of a group that does, come by the SIGGRAPH booth in the lobby of the Ernest N. Morial Convention Center and leave a message for the appropriate group.

Business meetings

Contact:
STEVE CUNNINGHAM
SIGGRAPH Chair

Annual SIGGRAPH Business Meeting
Thursday, 8 August
5:30 pm to 7 pm
Room E1

SIGGRAPH Executive Committee Meeting
Saturday, 10 August
10 am to 3 pm
Marriott Hotel, Bacchus Room

Other committee meetings at the conference

Get Involved with SIGGRAPH – Meet the SIGGRAPH 97 Committee and Executive Committee
Wednesday, 7 August
5:30 pm to 7 pm
Room 95, Ernest N. Morial Convention Center

Computer Graphics Education – Open Meeting
Thursday, 8 August
3 pm to 4 pm
Prince of Wales, Hilton Riverside

Computer Graphics Education – Art
Thursday, 8 August
4 pm to 5 pm
Prince of Wales, Hilton Riverside

Computer Graphics Education – Computer Science
Thursday, 8 August
4 pm to 5 pm
Chequers, Hilton Riverside

Computer Graphics Education – Engineering
Thursday, 8 August
4 pm to 5 pm
Eglinton & Winton, Hilton Riverside

Computer Graphics Education – K-12
Thursday, 8 August
4 pm to 5 pm
Cambridge, Hilton Riverside

Public Policy Task Force Special Interest Group Meeting
Thursday, 8 August
10:30 am to 12:30 pm
Windsor Room, Hilton Riverside

SIGGRAPH Small Conferences – Organizing and Information on SIGGRAPH
Thursday, 8 August
1:30 pm to 2:30 pm
Mardi Gras Ballroom Salon A, New Orleans Marriott

How to contact us

SIGGRAPH uses email extensively in its day-to-day business, and the contact people listed above can be reached by sending them email as noted. The usual way to reach someone is by sending them email at lastname@siggraph.org, but to differentiate between SIGGRAPH volunteers who have the same last name (for example, Judith R. Brown and Maxine Brown), simply add the first initial to the last name (for example, jbrown@siggraph.org and mbrown@siggraph.org). A complete listing of SIGGRAPH email addresses can be obtained by sending email to people@siggraph.org.

The persons above whose title includes Director are also members of the SIGGRAPH Executive Committee. You can find full contact information for these persons, including telephone and fax numbers, on the inside cover of the *Conference Proceedings* or any issue of the *Computer Graphics* newsletter.

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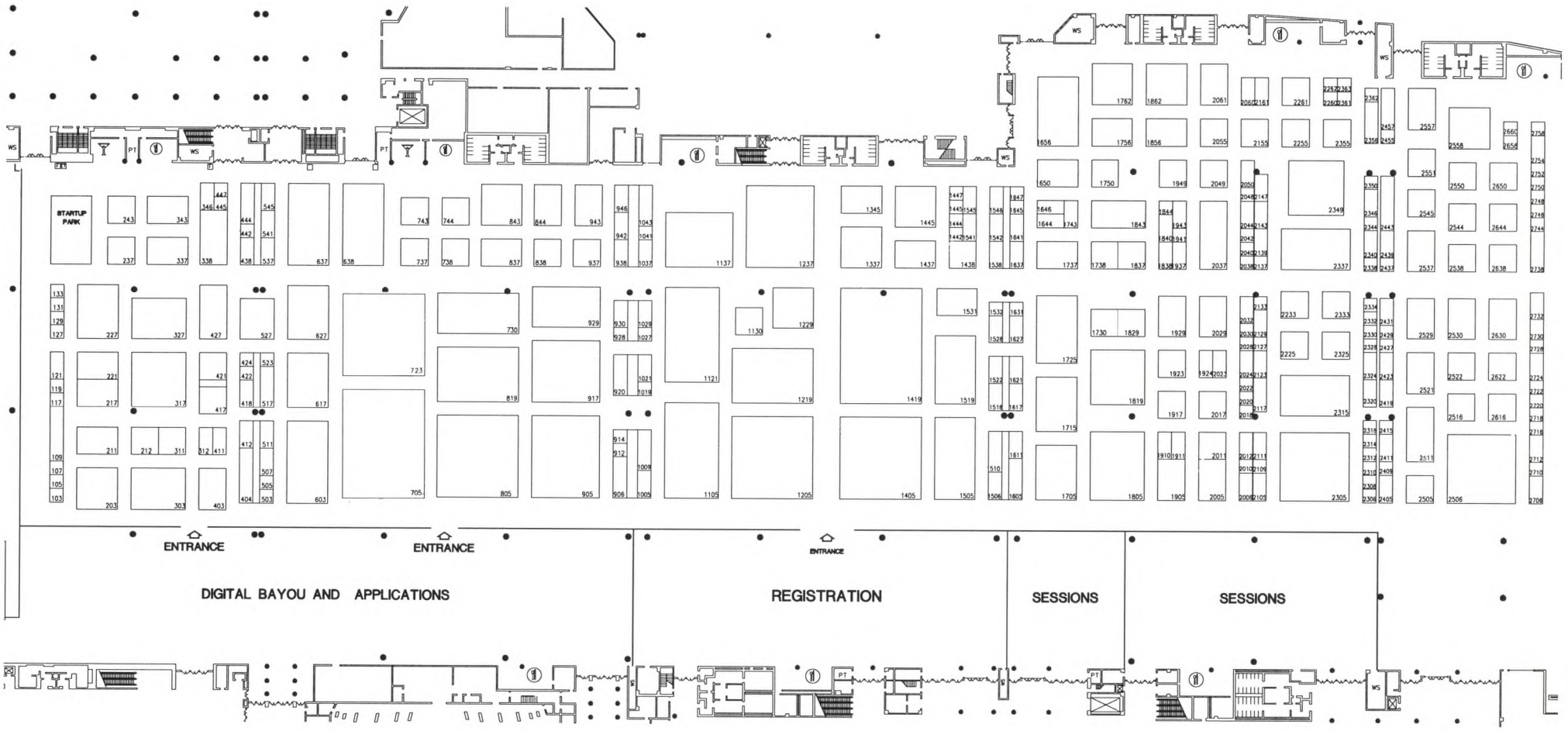

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Advertiser Index

Alias	Wavefront	104
auto.des.sys, inc.	75
CELCO	83
Ciprico Inc.	77
Computer Graphics World	79
Cyberware	81
DreamWorks Animation	85
Hewlett-Packard Company	127
IBM Corporation	115
Image Technology	inside back cover
Intergraph Computer Systems	89, 110, 122
Morgan Kaufmann Publishers	93
NeTpower	94, 95
NICOGRAPH	97
Odyssey Productions	136
Polhemus	133
Pthalo Systems, Inc.	101
Questar Productions	124
Savannah College of Art and Design	103
Side Effects Software	113
Silicon Graphics, Inc.	105
Texas Memory Systems, Inc.	106
Van Nostrand Reinhold	128
Viewsonic Corporation	109
Wired	121

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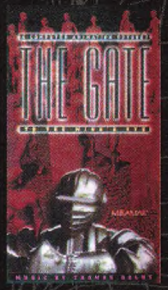

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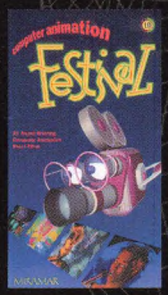
The Mind's Eye



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