



SIGGRAPH2007

Conference 5-9 August 2007 Exhibition 7-9 August 2007

San Diego Convention Center San Diego, California USA

The World's Premier Conference and Exhibition on Computer Graphics and Interactive Techniques

Program & Buyer's Guide

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Conference at a Glance

One Day registration includes access to conference programs and events for that day. Exhibits Plus One Day includes access to Exhibits Plus activities and events for that day. Both One Day registrations do not include technical documentation or tickets for the reception and the Electronic Theater.

Conference Registration Categories

- FULL CONFERENCE
- CONFERENCE SELECT
- O EXHIBITS PLUS

Conference schedule subject to change.

		SATURDAY	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
		4 AUGUST	5 AUGUST	6 AUGUST	7 AUGUST	8 AUGUST	9 AUGUST
	Registration	1 - 7 pm	7:30 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 3:30 pm
	Merchandise Pickup	1 - 7 pm	7:30 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 3:30 pm
	SIGGRAPH Store	1 - 7 pm	7:30 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm
•••	Art Gallery		1 - 6 pm	9 am - 7 pm	9 am - 6 pm	9 am - 6 pm	9 am - 3:30 pm
	Birds of a Feather	Throughout the week				о што о рто	o a otoo p
	Computer Animation Fe						1
•	Electronic Theater			7 - 9 pm	7 - 9 pm	7 - 9 pm	
•0	Electronic Theater Mat	inée		, o p	2 - 4 pm	2 - 4 pm	
•••	Animation Theaters		1 - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 6 pm	9 am - 5 pm
•	Courses		8:30 am - 5:30 pm	8:30 am - 5:30 pm	8:30 am - 5:30 pm	8:30 am - 5:30 pm	8:30 am - 5:30 pm
•0	Educators Program					8:30 am - 5:30 pm	8:30 am - 5:30 pm
	Emerging Technologies		1 - 6 pm	9 am - 7 pm	9 am - 6 pm	9 am - 6 pm	9 am - 3:30 pm
	Exhibition				9:30 am - 6 pm	9:30 am - 6 pm	9:30 am - 3:30 pm
•••	Exhibitor Tech Talks				9:30 am - 6 pm	9:30 am - 6 pm	9:30 am - 3:30 pm
•••	Featured Speakers			1:30 - 3 pm	1:45 - 3:30 pm		1:45 - 2:45 pm
	FJORG!			8 am - Midnight	12:01 am - 5 pm		
•••	Guerilla Studio		1 - 6 pm	11 am - 11 pm	9 am - 6 pm	9 am - 6 pm	9 am - 2 pm
•••	International Resources	1 - 7 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 6 pm	8 am - 4 pm
•••	IP Marketplace				10 am - 4 pm	10 am - 4 pm	10 am - 4 pm
•••	Job Fair				10 am - 4 pm	10 am - 4 pm	10 am - 4 pm
•0	Panels				10:30 am - 12:15 pm	10:30 am - 12:15 pm	10:30 am - 12:15 pn
•	Papers			8:30 am - 5:30 pm	8:30 am - 6 pm	8:30 am - 6 pm	8:30 am - 5:30 pm
•••	Posters		8:30 am - 5:30 pm	8:30 am - 5:30 pm	8:30 am - 5:30 pm	8:30 am - 5:30 pm	8:30 am - noon
•	Reception					8 - 10 pm	
•0	Sketches				8:30 am - 5:30 pm	8:30 am - 5:30 pm	8:30 am - 5:30 pm
•••	Special Events						
	Fast-Forward Papers P	review	6 - 8 pm				
	First International FJOF Viking Animation Event					6 - 7 pm	
	Winners of the ACM St	udent Research				7 - 7:30 pm	
•0	Special Sessions						
	"Happy Feet": Thawing	the CG Pipeline		6 - 8 pm			
	Shrekology, The History	y of an Ogre			6 - 8 pm		
	"Spider-Man 3" - Triple	Play				1:45 - 3:30 pm	
	"Transformers" - Giant	Frickin' Robots			8:30 - 10:15 am		

Conference Overview

Conference Registration Categories

- FULL CONFERENCE
- O CONFERENCE SELECT
- O EXHIBITS PLUS

Digital innovators, creative researchers, award-winning producers, provocative artists, energetic executives, and adventurous engineers. The worldwide SIGGRAPH community gathers in San Diego to explore the products, systems, techniques, ideas, and inspiration that are creating the next three generations of computer graphics and interactive techniques.

••• Featured Speakers

NEW FOR SIGGRAPH 2007 A Series of Featured Speakers Replaces the Traditional Keynote Address.

Prominent industry leaders and technology experts provide key insights on the future of art, the next wave of research, the evolution of entertainment, and new directions for the business of computer graphics and interactive techniques.



GLENN ENTIS

SVP, Chief Visual and Technical Officer, Electronic Arts

Monday, 6 August

1:30 – 3 pm

Room 6 ABCF

Recent Accomplishments and Upcoming Challenges for Interactive Graphics in Videogames

Glenn Entis is responsible for setting EA's overall graphics and technical strategy, and for leading the community of over 3,000 talented artists and engineers at EA's studios worldwide. He is also a member of the WW Studios executive team that oversees all aspects of the development of EA games. Before EA, Entis was a co-founder of PDI (now DreamWorks Animation) and CEO of DreamWorks Interactive. In addition to his professional achievements, Entis serves on the Board of Governors for the Emily Carr College of Art and on the Advisory Board for the Masters of Digital Media, a new graduate program at Great Northern Way in Vancouver.

Preceding Glenn Entis's talk, ACM SIGGRAPH presents the following awards for significant achievements in the field:

Steven A. Coons Award Nelson Max

University of California, Davis and Lawrence Livermore National Laboratory

Computer Graphics Achievement Award Greg Ward

Significant New Researcher Award Ravi Ramamoorthi Columbia University



SCOTT McCLOUD

Author and Graphic Novelist

Tuesday, 7 August

1:45 – 3:30 pm

Room 6 AB

Comics: A Medium in Transition

Scott McCloud has been writing and drawing comics since 1984. His book Understanding Comics was a New York Times Notable book for 1994 and is available in 16 languages. "Sin City" and "300" creator Frank Miller called him "just about the smartest guy in comics." His new book, Making Comics, explores the art and craft of telling stories visually.

VILAYANUR S. RAMACHANDRAN

Director, Center for Brain and Cognition and Professor of Psychology and Neurosciences at the University of California, San Diego

Thursday, 9 August 1:45 – 2:45 pm Room 6 AB

Vilayanur S. Ramachandran is an internationally acclaimed scholar and physician best known for his research in neurology, cognition, and visual perception. He has received various awards and honors, including an honorary doctorate from Connecticut College, the Ariens Kappers Medal from the Royal Nederlands Academy of Sciences, the American Academy of Neurology's Presidential Lecture Award, and the PADMA BHUSHAN award from the President of India, the country's second highest civilian honor. Also, Newsweek recently named Ramachandran as one of the most important people in the 21st century. He frequently lectures on art, visual perception, and the brain and is a trustee for the San Diego Museum of Art. He is also editor-inchief of the Encyclopedia of Human Behavior and has published more than 120 papers in scientific journals internationally.

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Art Gallery: Global Eves Sunday - Thursday, 5 - 9 August Room 20 A-D

Artwork that expands awareness of people and nature. Illuminates the role digital media play in shaping, extending, and reflecting world views and cosmologies. Explores ecological, social, and political issues in imaginative and innovative ways. And fosters respect, tolerance, and empathy among people and nations. Global Eyes presents juried and curated work in several categories: Animation; Artist Books; Art Panels; Art Papers; Digital Performance; Installations; Monitor-Based Work; and Wall-Based Work. The SIGGRAPH 2007 Art Gallery is collaborating with ISAST Leonardo to build bridges between people working creatively in art, science, and technology all around the world. Complete list of the Art Gallery: pages 97 - 107.

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Birds of a Feather Sunday - Thursday, 5 - 9 August Rooms 29 A, 29 B, 29 C, 29 D

Presentations, discussions, and demonstrations for people who share interests, goals, technologies, environments, or backgrounds. Birds of a Feather events are open to all SIGGRAPH 2007 attendees.

Computer Animation Festival

800

Animation Theaters Sunday - Thursday, 5 - 9 August Room 24 and 25

Electronic Theater Monday - Wednesday, 6 - 8 August San Diego Civic Theatre 1100 Third Avenue

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Electronic Theater Matinée Tuesday - Wednesday, 7 - 8 August San Diego Civic Theatre

The premier annual event for the world's most innovative, accomplished, and amazing digital film and video creators. An internationally recognized jury receives hundreds of submissions and presents the best work of the year in daily Animation Theaters and the Electronic Theater (matinée and evening shows). Selections include outstanding achievements in time-based art, scientific visualization, visual effects, real-time graphics, and narrative shorts. Complete list of the Computer Animation Festival: pages 108 – 112.

The Computer Animation Festival is recognized by the Academy of Motion Picture Arts and Sciences as a qualifying festival. Since 1999, several works originally presented in the Computer Animation Festival have been nominated for or have received a "Best Animated Short" Academy Award.

SIGGRAPH 2007 Computer Animation Festival award winners:

▶ BEST OF SHOW

Ark

Poland

Grzegorz Jonkajtys and Marcin Kobylecki

JURY HONORS

Dreammaker Germany Leszek Plichta Filmakademie Baden-Württemberg

► AWARD OF EXCELLENCE

En Tus Brazos

François-Xavier Goby, Edouard Jouret, Matthieu Landour

Supinfocom Valenciennes

Courses

Sunday - Thursday, 5 - 9 August

Instruction, insight, and inspiration from academic and industry experts. SIGGRAPH 2007 Courses deliver invaluable learning opportunities in three formats (tutorials, halfday classes, and full-day classes) and three levels of difficulty (beginning, intermediate, and advanced). Attendees learn principles and techniques that shape software evolution, hardware systems, feature-film production, and future research directions. Complete list of Courses: pages 13 - 46.

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Educators Program Wednesday - Thursday, 8 - 9 August Rooms 8 and 9

Sessions and sharing that augment the quality of curricula, improve student learning, and inspire others to adopt the life-long pursuit of advancing education, technology, and culture. Educators Program offerings are formal (papers, panels, workshops, QuickTakes, and forums) and informal opportunities to reinforce the teaching-learning community's inspiration and commitment. Complete list of Educators Program: pages 89 - 96.

Emerging Technologies Sunday - Thursday, 5 - 9 August Room 20 A-D

Digital innovations that change the way we work, live, and play. Emerging Technologies presents creative, innovative technologies and applications in many fields, including but not limited to: displays, robotics, input devices, interaction techniques, computer vision, sensors, audio, speech, biometrics, wearable computing, information, data and scientific visualization, biotechnology, graphics, collaborative environments, and design. And in several domains, including but not limited to: medicine, music, entertainment, education, home, business, aerospace, communication, transportation, security, military, and technologies for the aging and/or disabled. Complete list of Emerging Technologies: pages 114 - 131.

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Exhibition Tuesday - Thursday, 7 - 9 August Hall EFG

Get up-close and hands-on with the newest hardware systems, software tools, and creative services from hundreds of companies. Explore the products, systems, techniques, ideas, and inspiration that are creating the next three generations of computer graphics and interactive techniques. Complete list of Exhibitors: pages 154 - 175.

900

Exhibitor Tech Talks Tuesday - Thursday, 7 - 9 August Hall F

Comprehensive summaries of the latest technologies in computer graphics and interactive techniques. SIGGRAPH 2007 exhibitors demonstrate software, hardware, and systems; answer questions; and host one-on-one conversations about how their applications improve professional and technical performance. Complete list of Exhibitor Tech Talks: pages 146-147.

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Guerilla Studio Sunday - Thursday, 5 - 9 August Room 15 AB and 16 AB

Powerful workstations, versatile software, artists, scientists, engineers, and you. Consult with the Guerilla Studio team of practitioners, artists in residence, and multimedia experts to realize your most imaginative concepts in 2D, 3D, 4D, and n-dimensional media. Then use its network of advanced input and output devices to create art in every subdiscipline of computer graphics and interactive techniques, see pages 134 - 136.

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FJORG!

Monday - Tuesday, 6 - 7 August Room 28 A-E

In the first international FJORG! - an iron-animator event at SIGGRAPH 2007 - competing threeperson teams of CG animators have 32 hours to create a 15-second or longer animation based on a theme presented at the event, using the tools and assets provided by FJORG! Their goal is to resist the distractions and meet the deadline for creating the best character-driven animation the world has ever seen. In return for their efforts, these teams of artists will earn the attention of recruiters and talent from the top studios in computer graphics, feature films, animation, and game production. For a list of the FJORG! Teams, see page 133.

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International Resources Saturday - Thursday, 4 - 9 August Sails Pavilion

Connect with colleagues and friends from around the world. The International Center offers bilingual tours of the Art Gallery, informal translation services, and space for meetings, talks, and demonstrations. Throughout the year, the International Resources program facilitates worldwide collaboration in the SIGGRAPH community, provides an English Review Service to help submitters whose first language is not English, and encourages participation in all conference sessions, activities, and events. For a list of International Resources Events, see page 138

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IP Marketplace Tuesday - Thursday, 7 - 9 August

Another SIGGRAPH first! For a nominal fee, inventors and owners of patents, software libraries, circuit cores, etc. can list their intellectual properties for sale or license. IP offerings are presented in poster format at SIGGRAPH 2007, and a panel of experts discusses the issues: IP & Patents for Art, Technology, and Entertainment, a lively overview and discussion of patent processes, pitfalls, opportunities, and exploitation in the art and technology sectors.

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Job Fair

Tuesday - Thursday, 7 - 9 August

The SIGGRAPH Job Fair returns in 2007. It is produced again by CreativeHeads.net, the global job-board network for the videogame, animation & VFX, TV & film, software, web, and wireless industries. Based on the overwhelmingly positive feedback received from last year's attendees, all

of the same features and benefits will be provided again, plus a few new enhancements! The Job Fair is open to all SIGGRAPH 2007 attendees at no additional cost. For a preliminary list of the Job Fair participants, see page 9.

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Panels

Tuesday - Thursday, 7 - 9 August Rooms 1 AB, 6 DE, 9

Debate, discussion, dissent, and disagreement on the big topics in computer graphics and beyond: humanoid robots, worldwide intellectual property protection, brain/machine interfaces, virtual humans, the Uncanny Valley, and 22nd-century entertainment. Panelists present their positions. exchange opinions, and answer audience questions. Complete list of Panels: pages 64-65.

Papers

Monday - Thursday, 6 - 9 August Rooms 6 AB, 6 CF, 6 DE, 6 ABCF

The premier international forum for disseminating new scholarly work in computer graphics and interactive techniques. No other conference presents the full range of the world's most significant achievements in the field and illuminates new directions for future investigations. Complete list of Papers: pages 47-63.

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Participate Tuesday, 7 August 5 - 6:30 pm

SIGGRAPH 2008 Booth/Sails Pavilion

Interested in participating in a future SIGGRAPH conference as a presenter or volunteer? Talk with the volunteer leadership who organize the annual SIGGRAPH conference and discover how you can contribute your expertise and energy. All attendees are welcome. Questions and comments are encouraged.

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Posters

Sunday - Thursday, 5 - 9 August Sails Pavilion

Graphic displays of incremental, preliminary, partial, and innovative insights that are important but not fully developed. Posters are displayed throughout the conference week, and presenters discuss their work in scheduled sessions. Complete list of Posters: pages 79 - 88.

Sketches

Tuesday - Thursday, 7 - 9 August Rooms 1 AB, 3, 4, 6 DE, 9, 11 AB

Short illustrated talks on computer graphics and interactive techniques in art, cinema, advertising, design, science, and engineering. Sketch presenters summarize speculative breakthroughs, work in progress, and recent achievements. Following their presentations, they answer questions and discuss future implications of their work. Complete list of Sketches: pages 66-78.

Reception

Embarcadero Marina Park North Located at the end of Kettner Boulevard Wednesday, 8 August

8 - 10 pm

The international SIGGRAPH community's highest-energy, best-attended social event of the year. Drink a toast to your colleagues' achievements, and your own. Share a convivial evening with people you haven't seen since SIGGRAPH 2006, and meet the people you need to know for another year of professional success and adventure.

XSV: Ex-Student Volunteering Mentoring Program

Interact with the former student volunteers who are supporting the conference and gaining valuable apprentice experience as members of the SIGGRAPH 2007 program sub-committees. The XSV Student Volunteers are working with the following program committees: Art Gallery, Computer Animation Festival, Emerging Technologies, GraphicsNet, Panels, and Sketches & Posters.

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Special Events

Fast-Forward Papers Preview Sunday, 5 August 6 - 8 pmRoom 6 ABCF

Snapshot overviews of the paper sessions, in which authors give short summaries of their work. It's a fast, fun, and provocative preview of the latest and most significant findings in computer graphics and interactive techniques.

First International FJORG!: Viking Animation Event Winners Wednesday, 8 August 6 - 7 pm Room 1 AB

In a Viking ceremony, special guest judges present awards to the winning team in the

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Special Events (continued)

FJORG! competition. Attendees are encouraged to wear their finest Viking garb. The session includes video highlights of the event and the animations produced by the FJORG! finalists. Also featured: the FJORG! teams that receive the most votes in the attendee "popular vote."

FJORG! Organizers Patricia Beckmann-Wells DreamWorks Animation

Samuel Lord Black Autodesk, Inc.

Room 1 AB

Winners of the ACM Student Research Competition

Wednesday, 8 August 7 - 7:30 pm

Winners of the ACM Student Research Competition at SIGGRAPH 2007 present brief summaries of their Posters.

ACM Student Research Competition Organizer Michael Cohen

Microsoft Research

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Special Sessions

Leading experts in computer graphics, interactive techniques, and beyond offer enlightening insights on the art, science, trends and breakthrough concepts that will define the future of digital technologies.

"Happy Feet": Thawing the CG **Pipeline**

Monday, 6 August 6 - 8 pm

Room 6 DE

Due to its strong connection with traditionally animated films, CG filmmaking has historically been a realm of limited editorial control. Story. characters, environments, and even camera moves are firmly locked prior to commencement of production. This panel examines the implementation of a much more live-action approach to CG filmmaking.

On "Happy Feet," Animal Logic strove to engage a live-action director with the CG filmmaking process by providing familiar tools, procedures, and terminology to work with. From real-time lensing stations, motion capture, auditions, and screen tests to casting and crew, the challenge was to free up the CG filmmaking process, and create an environment in which the director had many live-action parallels.

Organizer

Nick Hore

Training Supervisor Animal Logic

Panelists

Aidan Sarsfield

Character Supervisor Animal Logic

Ben Gunsberger

Lighting Supervisor Animal Logic

Justen Marshall

R&D Supervisor Animal Logic

"Transformers": Giant Frickin' Robots

Tuesday, 7 August 8:30 - 10:15 am Room 6 DE

Bringing 30-foot-tall robots to life in this summer's blockbuster film "Transformers" required some of the most complex modeling and animation ever attempted at Industrial Light & Magic. With 14 fully computer-generated characters, some containing over 10,000 individually controllable pieces of geometry, new systems had to be developed to make this not only feasible but production friendly - a challenge not to be underestimated. From oil filters and axles to pistons and body panels. each piece had to be individually controllable while operating within a substantially complex system. Transformers are more than the sum of their parts.

Organizer

Miles Perkins

Director of Marketing and Communications Industrial Light & Magic

Moderator

Barbara Robertson

CG Goddess & Freelance Writer

Scott Farrar

Visual Effects Supervisor Industrial Light & Magic

Russell Earl

Associate Visual Effects Supervisor Industrial Light & Magic

Scott Benza

Animation Director Industrial Light & Magic

Digital Production Supervisor Industrial Light & Magic

Richard Bluff

Digital Matte Supervisor Industrial Light & Magic

Shrekology, The History of an Ogre Tuesday, 7 August 6 - 8 pm

Room 6 DE

Unique insights into how the "Shrek" world evolved over the life of the franchise, both technically and creatively. The speakers, who've held key roles on all the "Shrek" films,

share stylistic conceits, technical overviews, production tips, and anecdotes, illustrated by abundant behind-the-scenes material and visual breakdowns.

Organizer

Philippe Gluckman

Visual Effects Supervisor PDI/DreamWorks

Panelists

Raman Hui

Co-Director, "Shrek the Third" PDI/DreamWorks

David Smith

Storvboard Artist PDI/DreamWorks

Matt Baer

Head of Effects PDI/DreamWorks

Tom Hester

Character Designer Hester Studios, Inc.

"Spider-Man 3" - Triple Play

Wednesday, 8 August 1:45 - 3:30 pm

Room 6 DE

The leading artists on "Spider-Man 3" reveal the creative challenges and technical achievements associated with creating the movie's three dangerous villains.

For the first time, Imageworks produced fully articulated, performing CG characters entirely from dynamically generated particles and fluids. These digital characters, which embodied keyframed performance animation, interacted with each other and with live-action characters in real and synthetic environments.

Organizer

Sande Scoredos

Executive Director, Training & Artist Development Sony Pictures Imageworks

Panelists

Scott Stokdyk

Visual Effects Supervisor Sony Pictures Imageworks

Peter Nofz

Digital Effects Supervisor Sony Pictures Imageworks

Spencer Cook

Animation Director Sony Pictures Imageworks

Ken Hahn

Digital Effects Supervisor Sony Pictures Imageworks

Co-Located Workshops & Events

Presented in cooperation with ACM SIGGRAPH, these small symposia are related to important aspects of computer graphics and interactive techniques.

For registration information: www.siggraph.org/s2007/attendees/registration/

For registration information on the SCA: www.siggraph.org/sca2007

Emerging Display Technologies Saturday, 4 August, 8:30 am - 5 pm San Diego Convention Center, Room 3

EDT 2007 is the third in a successful series of workshops dedicated to new and innovative display technologies. The recent flurry of display technology development has produced families of technologies that make fixed and projected pixels cheaper, faster, more flexible, of higher quality, and touchable. These advances enable "smart pixels" and a number of burgeoning applications ranging from displays used for better and more flexible images to innovative user interaction, scene sensing, and environment enhancement. The one-day EDT 2007 workshop is an opportunity to expand attendee thinking about ways to use contemporary display devices in virtual-reality systems and applications.

For more information and registration: http://www.edt2007.org/

Graphics Hardware 2007 Saturday, 4 August and Sunday, 5 August, 9 am - 5 pm Hilton San Diego Gaslamp Quarter Hotel

Graphics Hardware is a highly visible, established international forum for exchanging experience and knowledge related to computer graphics hardware. The event, held annually since 1986, offers a unique perspective on graphics hardware by combining discussions and constructive critiques of innovative concepts and product-level designs. It is an inclusive forum for the entire graphics-hardware community and brings together researchers, engineers, and architects.

For more information: http://www.graphicshardware.org/

NPAR 2007 - 5th International Symposium on Non-Photorealistic Animation and Rendering

Saturday, 4 August, 8 am - 6 pm Sunday, 5 August, 9 am - 5:30 pm San Diego Convention Center, Room 10

NPAR 2007 is the 5th international symposium dedicated to non-photorealistic animation and rendering in cooperation with ACM SIGGRAPH and Eurographics. In 2007, it is co-located with SIGGRAPH for the first time. The idea is to raise awareness of this important field and open it to new people from academia, the arts, and industry. Once again, NPAR will bring together researchers and practitioners to showcase cutting-edge research in non-photorealistic animation and rendering systems and techniques.

For more information: http://www.npar.org/2007/

Sandbox: An ACM SIGGRAPH Videogame Symposium

Saturday, 4 August, 9 am - 8 pm Sunday, 5 August, 9 am - 3 pm San Diego Convention Center, Room 29 A-D, 30 AB

The Sandbox symposium includes keynotes, panels, papers, and a Hot Games session that previews unreleased titles from major game companies and independent developers. Video games are a singular technological medium, comparable in cultural impact to the telephone, television, or the internet. Sandbox explores such questions as: How can we advance the state of technology while ensuring that the medium flourishes? What role do independent developers play in maintaining diversity and creativity in this medium? How do video games affect societies and individuals?

For more information: www.sandbox.siggraph.org

Symposium on Computer Animation (SCA) Friday, 3 August and Saturday, 4 August, 8:30 am - 5 pm Westin San Diego (formerly Wyndham San Diego)

SCA is the premier forum for innovations in the software and technology of computer animation. This annual event brings together researchers and practitioners working on all aspects of timebased phenomena. The intimate size, the single track program, and comfortable surroundings make this symposium an ideal opportunity to exchange research results and implementation experiences, and to witness some of the best research in computer animation.

For more information and registration: http://www.siggraph.org/sca2007/

Inquiries about co-locating events with the annual SIGGRAPH conference should be directed to:

Alyn Rockwood **ACM SIGGRAPH Vice President** alyn_rockwood@siggraph.org

General Information

SIGGRAPH 2007 and the San Diego Convention Center provide all the support and convenience you need for a successful conference experience.

Accessibility

The convention center is handicap accessible. If you have special needs or requirements, please call Conference Management at: +1.619.525.6257

Age Requirement Policies

- Registered attendees under the age of 16 must be accompanied by an adult at all times.
- Children under 16 are not permitted in the Exhibition. Age verification is required.

Airport Shuttle Transportation Hall D Lobby

Cloud 9 Shuttle offers a full range of groundtransport services from the San Diego airport to all destinations in San Diego and Los Angeles counties. SIGGRAPH 2007 attendees can purchase \$8 round-trip tickets from Cloud 9 shuttle. For optimum convenience when you depart, bring your luggage with you to the Convention Center, check it with Bags Inc. for a charge, and then ride with Cloud 9 back to the San Diego airport.

More information: www.cloud9shuttle.com

Automated Teller Machines (ATMs)

There are several ATMs located throughout the lobbies of the San Diego Convention Center.

Baggage Check

Baggage check service is available for briefcases, backpacks, and other small items during conference hours for \$2 per bag. SIGGRAPH 2007 is not responsible for items left in the Baggage Check area.

Hall D Lobby

Sunday, 5 August	8:30 am - 7:30 pm
Monday, 6 August	7:30 am - 7:30 pm
Tuesday, 7 August	7:30 am - 6:30 pm
Wednesday, 8 August	7:30 am - 6:30 pm
Thursday, 8 August	7:30 am - 6:30 pm

Hall H Lobby

Wednesday, 8 August	7:30 am - 6:30 pm
Thursday, 9 August	7:30 am - 6:30 pm

Banks/Currency Exchange

Major banks in downtown San Diego near the convention center:

Bank of America

+1.858.452.8400

Citibank-755 Broadway Circle

+1.619.239.3457

City National Bank

+1.619.645.6100

Washington Mutual Bank

+1.619.615.0600

Wells Fargo Bank

+1.619.515.1460

Currency Exchange Thomas Cook Foreign Exchange

Near American Airlines in the San Diego International Airport 800.287.7362

Bookstore

Room 6 Lobby

BreakPoint Books offers the latest and greatest books, CDs, and DVDs on computer animation, graphic design, gaming, 3D graphics, modeling, and digital artistry. The bookstore features recent books by SIGGRAPH 2007 speakers and award winners.

Sunday, 5 August	9 am - 7 pm
Monday, 6 August -	
Thursday, 9 August	8 am – 6 pm

Note: Bookstore refunds will only be processed during the conference. All bookstore policies are those of BreakPoint Books and not SIGGRAPH 2007.

Business Center (FedEx Kinkos) Hall D Lobby +1.619.525.5450

The FedEx Kinkos offers the following services: faxing, copying, shipping, office supplies, internet access, and computer workstation rental.

Saturday, 5 August -Thursday, 9 August 8 am - 5 pm

Busina

See Shuttle Services.

Camera/Recording Policies

- No cameras or recording devices are permitted at SIGGRAPH 2007. Abuse of this policy will result in the loss of the individual's registration credentials.
- SIGGRAPH 2007 employs a professional photographer and reserves the right to use all images that this photographer takes during the conference for publication and promotion of future ACM SIGGRAPH events.

Child Care

Child Care will not be provided at SIGGRAPH 2007. Contact your hotel concierge for suggestions.

Conference Management Office Room 33 A-C +1.619.525.6257

If you have questions regarding SIGGRAPH 2007, call or stop by this office anytime during conference hours.

Conference Policies

- Registered attendees under the age of 16 must be accompanied by an adult at all times.
- Children under 16 are not permitted in the Exhibition. Age verification is required.
- SIGGRAPH 2007 reserves the right to deny registration or entrance to any attendee or prospective attendee, and to cancel an existing registration, if it determines that a registration or an attendee is not in the best interest of SIGGRAPH 2007 or ACM SIGGRAPH.
- Lost badges will not be replaced. If you lose your badge, you must register again at the published rates to obtain a new badge.
- No cameras or recording devices are permitted at SIGGRAPH 2007. Abuse of this policy will result in the loss of the individual's registration credentials.
- SIGGRAPH 2007 employs a professional photographer and reserves the right to use all images that this photographer takes during the conference for publication and promotion of future ACM SIGGRAPH events.
- SIGGRAPH 2007 conference documentation and pre-purchased merchandise will not be shipped, nor will refunds be given for any material that is not picked up at the Merchandise Pickup Center.

Exhibition Management Office Room 31 AB +1.619.525.6263

Exhibition Management representatives are available during conference hours to meet with exhibitors and help with plans for exhibiting at SIGGRAPH 2008.

Exhibitor Registration

Hall H

Open during registration hours. See Registration.

First Aid Office

Show Office D, Mezzanine Level

Nurses and paramedics are on duty during conference hours.

Food Services

Food Court: (Sails Pavilion) and Concession Stands (Hall F and G)

The San Diego Convention Center operates a food court, concession stands, several Starbucks, Pretzel, and Mrs. Fields carts throughout the convention center.

Food Court - Sails Pavilion

Sunday, 5 August	11 am - 2 pm
Monday, 6 August	11 am - 2 pm
Tuesday, 7 August	11 am - 2 pm
Wednesday, 8 August	11 am - 2 pm
Thursday, 9 August	11 am - 2 pm

Concession Stands - Hall F

Tuesday, 7 August	9 am - 5 pm
Wednesday, 8 August	9 am - 5 pm
Thursdav, 9 August	9 am - 2 pm

Concession Stands - Hall G

Tuesday, 7 August	10 am - 5:30 pm
Wednesday, 8 August	10 am - 5:30 pm
Thursday, 9 August	10 am - 3:30 pm

Housing Desk Hall H +1.619.525.6265

Complete information about SIGGRAPH 2007 hotel accommodations. Open during registration hours (except Thursday, 9 August – will close at 12:30 pm). See Registration.

Information and Restaurant Booth

Hall E Lobby

General conference information and San Diego restaurants.

Saturday, 4 August	Noon – 6 pm
Sunday, 5 August -	
Thursday, 9 August	9 am - 6 pm

International Center Sails Pavilion

The SIGGRAPH 2007 International Committee and a multi-lingual staff of student volunteers answer questions, offer suggestions, provide informal translation services, and make connections with international attendees.

8 am - 4 pm

Saturday, 4 August	1 – 7 pm
Sunday, 5 August -	
Wednesday, 8 August	8 am - 6 p

Thursday, 9 August

Internet Access

Free wireless access will be available for SIGGRAPH 2007 throughout the San Diego Convention Center. See page 11 for wireless internet instructions. SIGGRAPH 2007 will not be providing public workstations for internet access, however, there will be limited internet access in the San Diego Business Center.

Job Fair

Hall D

Tuesday, 7 August – Thursday, 9 August

10 am - 4 pm

The Job Fair is produced by CreativeHeads.net, the global job board network for the Video Game, the Animation & VFX / TV & Film, the Software / Tools / Technology and Web/Wireless industries. Employers and active jobseekers will once again be able to connect before, during, and after the conference! Based on the overwhelmingly positive feedback received from last year's attendees, all of the same features and benefits will be provided again, PLUS a few new enhancements! The Job Fair is open to all SIGGRAPH 2007 attendees at no additional cost.



Job Fair Participants (as of 17 July) Align Technology, Santa Clara, California

Animal Logic, Australia
Apple Computer, Inc., Cupertino, California
Blizzard Entertainment, Irvine, California
CafeFx, Santa Maria, California
Charlex, New York, New York
CreativeHeads.net, Manhattan Beach, California
Cryptic Studios, Los Gatos, California
DAM Consultants, Inc., El Segundo, California
Double Negative, London, England
Duos Technologies, Inc., Jacksonville, Florida
Eidos/Crystal Dynamics, Redwood City, California

Ex'pression College for Digital Arts, Emeryville, California Focus 360, Laguna Niguel, California High Moon Studios, Carlsbad, California High Voltage Software, Hoffman Estates, Illinois

Imagemovers Digital (IM Digital), San Rafael, California

Insomniac Games, Burbank, California Intel Corporation, Folsom, California International Game Technology (IGT),

Reno, Nevada

The Masters of Digital Media Program, Vancouver, Canada

Microsoft Game Studios, Redmond, Washington Midway Amusement Games, LLC,

Chicago, Illinois

Monolith Productions, Kirkland, Washington NCsoft, Austin, Texas

Nickelodeon Animation Studio,

Burbank, California

NVIDIA Corporation, Santa Clara, California QUALCOMM Incorporated, San Diego, California Radical Entertainment, Vancouver, Canada

Job Fair (continued)

Red 5 Studios, Aliso Viejo, California RTT AG, Pasadena, California Sega Studios, San Francisco, California Sierra Online, Issaquah, Washington Sony Online Entertainment, San Diego, California Spark Unlimited, Sherman Oaks, California Sportvision, Inc., Mountain View, California Structure Studios, Las Vegas, Nevada The Art Institutes, Pittsburgh, Pennsylvania The Orphanage, San Francisco, California The Syndicate, Santa Monica, California Turbine, Weswood, Massachusetts Virtual Heroes Inc., Cary, North Carolina Visuart, Irvine, California Vivendi Games, Los Angeles, California Vivendi Games Mobile, San Mateo, California

Lost and Found

Show Office E, Mezzanine Level

After the conference, all lost-and-found items will be turned over to the San Diego Convention Center security office. To inquire about lost items during and after the conference, call security at +1.619.525.6284. Lost registration badges are available in Special Assistance: Hall H.

Merchandise Pickup Center

Your conference documentation (included with registration) must be picked up at the Merchandise Pickup Center. Conference documentation and pre-purchased merchandise will not be shipped, nor will refunds be given for any material that is not picked up at the Merchandise Pickup Center in Hall H. Open during registration hours. See Registration.

Parking

Two parking areas are available at the San Diego Convention Center:

- The underground lot beneath the building, entrance from Harbor Drive. This parking garage opens one hour before the first SIGGRAPH 2007 event each day and closes one hour after the last SIGGRAPH 2007 event. A 24-hour entrance/exit is located at the west end of the parking garage, near the Marriott Hotel. But overnight parking and 24-hour parking are NOT allowed. No in/out privileges. Parking fee: \$10.
- The overflow parking structure at the corner of Harbor Drive and 8th Avenue. Parking fee: \$10.

Additional parking is available at other facilities within a few blocks of the San Diego Convention Center.

Registration

Hall H

Saturday, 4 August $1 - 7 \, pm$ 7:30 am - 6 pm Sunday, 5 August Monday, 6 August 8 am - 6 pm Tuesday, 7 August 8 am - 6 pm Wednesday, 8 August 8 am - 6 pm Thursday, 9 August 8 am - 3:30 pm

Special Assistance Desk

Hall H

Assistance with a wide range of problems and concerns, including:

- Credit card problems (validations, errors)
- Lost badges
- Registration corrections and upgrades
- Substitute registration (only if authorized on company letterhead)

Shuttle Service

+1.410.507.0971

SIGGRAPH 2007 provides complimentary shuttle service between most conference hotels and the San Diego Convention Center. Look for signs and shuttle flyers with specific shuttle details for all events in conference hotel lobbies and the information desk at the San Diego Convention Center.

If you have any shuttle-related questions, please contact the shuttle service desk during official shuttle hours. For assistance with handicap service, please call +1.410.507.0971. SIGGRAPH 2007 provides shuttles with wheel chair lifts and tiedowns.

IMPORTANT NOTICE

The SIGGRAPH 2007 Hotel Shuttle Service is available only to attendees who registered at official conference hotels through the SIGGRAPH 2007 hotel reservation system. Those attendees will receive a wristband upon check-in that allows them to board the shuttle buses. Attendees who are not registered at official conference hotels will be allowed to purchase wristbands for \$75 at the SIGGRAPH Store. Attendees without wristbands will not be allowed to use the shuttle service.

All badged attendees will be able to ride the shuttle buses to the San Diego Civic Theatre for the Electronic Theater performances and Calit2 for the Art Gallery Digital Performances. Wristbands will not be required.

Hotel Shuttle Service Hours

Saturday, 4 August 12:30 - 7:30 pm Sunday, 5 August 7 am - 8:30 pm Monday, 6 August 7:30 am - 11:15 pm Tuesday, 7 August 7:30 am -7 pm 7:30 am - 7:30 pm Wednesday, 8 August 7:30 am - 6:30 pm Thursday, 9 August

Hotel shuttle service will pick up and drop off attendees outside Hall D Lobby.

Shuttles for Reception

Embarcadero North Park

The last shuttle will depart from the Embarcadero North Park at 10:30 pm. Shuttles will transport attendees to/from the reception.

Walking instructions: Once outside the San Diego Convention Center, go west and follow the sidewalk path behind the San Diego Convention Center and San Diego Marriott Hotel along the marina. Pass the boat docks and Seaport Village Shopping area; continue around the bend in the sidewalk to the left where you'll find the SIGGRAPH 2007 reception entrance at the foot of Kettner Boulevard.

Shuttles for Electronic Theater

San Diego Civic Theatre 1100 Third Avenue San Diego, California 92101

Monday, 6 August 5:30 - 9:30 pm Tuesday, 7 August -

Wednesday, 8 August 12:30 - 4:30 pm and 5:30 - 9:30 pm

Shuttle service pick-up and drop-off for the Civic Theater will be located outside Hall B Lobby of the San Diego Convention Center. The shuttles for the Electronic Theater matinée runs 12:30 - 4:30 pm, and shuttle service for the Electronic Theater evening performances runs 5:30 - 9:30 pm.

California Institute for Telecommunications and Information Technology (Calit2)

Voigt Land & Engineers Lane La Jolla, California

Calit2 Shuttle Hours

Saturday, 4 August 4 - 10:15 pm Sunday, 5 August 9:45 am - 10:45 pm Monday, 6 August 9:45 am - 8:15 pm

The shuttle pick-up and drop-off for the Calit2 will be outside Hall B Lobby of the San Diego Convention Center.

Please note: Hotel shuttle service concludes earlier than the Calit2 evening shuttle times on Saturday and Sunday. Calit2 shuttles will transport attendees to the San Diego Convention Center attendees will need to find their own transportation back to their hotels.

SIGGRAPH Encore

Sails Pavilion

Over 1,400 presentations from SIGGRAPH 2003, 2004, 2005, and 2007 are available at the SIGGRAPH Encore booth and online at encore.siggraph.org. SIGGRAPH 2007 presentations are available within 24 hours! Come to the SIGGRAPH Encore booth and burn individual presentations to CD or download them online

SIGGRAPH Store (Hall F Lobby) & SIGGRAPH Boutique (Sails Pavilion)

Review and purchase additional technical materials, conference documentation, and gifts (t-shirts, polo shirts, flip flops, and coffee mugs) for friends, family, and colleagues. SIGGRAPH 2007 merchandise is available on a first-come, first-served basis in the SIGGRAPH Store (Hall F Lobby) or SIGGRAPH Boutique (Sails Pavilion).

Saturday, 4 August Sunday, 5 August Monday, 6 August - $1 - 7 \, pm$ 7:30 am - 6 pm

Thursday, 9 August

8 am - 6 pm

Note: The Boutique will be closed on Saturday.

Speaker Prep Room Hall D (Back of the Hall) +1.619.525.6281

First, go to the contributor registration desk to pick up your registration credentials and conference information. Then go to the Speaker Prep Room to review your presentation. Speaker ribbons and badge holders are available only in the Speaker Prep Room. If you're presenting at the conference, you should check in at the Speaker Prep Room at least 24 hours before your presentation.

In the Speaker Prep Room, presenters review their presentation materials, practice their lectures, and test the playback of their animations. It's the best place to make sure that you'll have everything you need for your session.

Saturday, 4 August	Noon – 7 pm
Sunday, 5 August	7 am - 7 pm
Monday, 6 August	7 am - 7 pm
Tuesday, 7 August	7 am - 7 pm
Wednesday, 8 August	7 am - 7 pm
Thursday, 9 August	7 am - 2 pm

Technical Material Sold After the Conference

Full Conference DVD-ROM

This digital publication contains the electronic version of the technical papers, images, and supplemental material; all of the course and tutorial notes, including supplemental material (movies, source code, HTML presentations); and the permanent record of the Educators Program, Emerging Technologies, Panels, Posters, Sketches, and Special Sessions; along with the permanent record of the Art Gallery: Global Eyes and Computer Animation Festival.

ACM Transactions on Graphics (Conference Proceedings Special Issue) -Printed

Contains the SIGGRAPH 2007 technical papers and the ACM SIGGRAPH awards. This can be purchased at the time of registration, or it may be purchased individually at the conference.

Conference Select CD-ROM

Included with Conference Select Registration

This digital publication contains the permanent record of the Art Gallery: Global Eyes and Computer Animation Festival and the electronic version of the Educators Program, Emerging Technologies, Panels, Posters, Sketches, and Special Sessions. Papers, and Courses are available only on the Full Conference DVD-ROM.

Electronic Art & Animation Catalog - Printed

Contains the permanent record of images from the Art Gallery: Global Eyes and the Computer Animation Festival. The catalog can be purchased at the time of registration, or it can be purchased individually at the conference.

SIGGRAPH 2007 Video Review

Contains animations presented in the Electronic Theater and Animation Theaters. To order these materials after the conference, contact:

ACM Order Department

800.342.6626 (Continental US and Canada) +1.212.626.0500 (International) +1.212.944.1318 fax orders@acm.org

Tickets Hall H

Electronic Theater Tickets

One ticket is included with each Full Conference and Conference Select registration. Additional evening tickets cost \$50 and matinée tickets cost \$25. Every attempt is made to accommodate your requested Electronic Theater show. If you want to exchange your ticket, go to the Ticket Sales and Exchange Booth. Tickets are not available for every show. All Electronic Theater performances contain the same material. Badged attendees may purchase up to two additional Electronic Theater tickets (subject to availability) at On-site Registration beginning at 1 pm Saturday, 4 August. Last-minute tickets are generally available and will be sold at the door to the Electronic Theater one hour prior to show time (cash only). All sales are final.

Reception Ticket

Reception tickets are also available at the Ticket Exchange Booth. The cost is \$55 per person. All sales are final.

Telephone Numbers

Business Center (FedEx Kinkos)

+1.619.525.5450

Conference Management Office*

+1.619.525.6257

Exhibition Management Office

+1.619.525.6263

First Aid Office

+1.619.525.6285

Housing Desk

+1.619.525.6265

Media Headquarters

+1.619.525.6267

Parking - San Diego Convention Center

+1.619.237.0399

Security Office

+1.619.525.6284

Shuttle Service +1.410.507.0971

SIGGRAPH Store +1.619.525.6280

Speaker Prep Room

+1.619.525.6281

* For emergencies, contact Conference Management Office.

Wireless Internet Access

SIGGRAPH 2007 provides 802.11 a/b/g wireless network access in most areas of the San Diego Convention Center. To use the wireless network, attendees should have their own wireless (802.11a, b, or g compatible) cards. Some presentations offer audience participation via

Please refer to your laptop operating system and client adapter documentation and follow this procedure:

- 1. Document all existing TCP/IP and wireless configuration information before you make any changes.
- 2. Configure your laptop to use DHCP.
- 3. Configure your wireless adapter Network Name (SSID) to be "s2007".
- 4. Disable encryption on your wireless adapter.

The SIGGRAPH 2007 wireless network provides open, unencrypted communications for conference attendees. The system is not secure and can be monitored by others.

Registration and Media Information

Member Rate

If you are currently an ACM or ACM SIGGRAPH member you are eligible for member discounts. You must provide your current ACM or ACM SIGGRAPH membership number in order to receive the discount, otherwise, you will be charged the non-member rate. Local or regional ACM SIGGRAPH memberships are not eligible for registration discounts.

Student Rate

You must be a full-time student in order to qualify. You must provide your 2007 ACM student membership number to qualify for student rates (this applies for those registering in advance as well as at the conference).

Failure to provide valid information will result in you being charged the non-member rate.

Note: Your badge will include your name, organization, city, state, country, and membership status as indicated on your registration form.

Registration Location: Hall H

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

Media Headquarters Location: Room 23

Saturday, 4 August	5-7 pm
Sunday, 5 August	8 am - 4 pm
Monday, 6 August	8 am - 5 pm
Tuesday, 7 August	8 am - 5 pm
Wednesday, 8 August	9 am - 5 pm
Thursday, 9 August	9 am - 4 pm

Media Registration

Media representatives must register in the Media Headquarters Office, Room 23. You must submit full and proper media credentials for a media pass. No exceptions will be made.

Media Briefing/ Exhibition Floor Tour

The official SIGGRAPH media briefing provides an update to the media on what's new and what's hot at SIGGRAPH 2007. Preview the Computer Animation Festival and receive insight into the SIGGRAPH 2007 presentations and experiences. Gain access to the exhibit floor before it opens to the attendees for a "sneak preview" of the latest products and applications.

Media Briefing

Tuesday, 7 August Room 29 A 7:30 - 9 am

Early Exhibition Floor Access

Tuesday, 7 August 9 - 9:30 am Exhibit Floor

Exhibitor Media Events

A schedule of various exhibitor media events will be available in the Media Headquarters Office in Room 23 of the San Diego Convention Center.

Conference Registration Categories

- FULL CONFERENCE
- CONFERENCE SELECT
- O EXHIBITS PLUS
- O Art Gallery
- O Awards Presentation
- O Birds of a Feather

Computer Animation Festival

- **Electronic Theater**
- 00 Electronic Theater Matinée
- 000 **Animation Theaters**
- Courses
- **Educators Program**
- O Emerging Technologies
- O Exhibition
- O Exhibitor Tech Talks
- O Featured Speakers
- O FJORG!
- O Guerilla Studio
- O International Resources
- O IP Marketplace
- OO Job Fair
- 00 Panels
- **Papers**
- O Pathfinders
- OO Posters
- Reception
- Sketches
- OO Special Events
- Special Sessions

Documentation

- Full Conference DVD-ROM
- Conference Select CD-ROM

Days & Hours

Sunday, 5 August Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August

8:30 am - 5:30 pm 8:30 am - 5:30 pm

Courses

Instruction, insight, and inspiration from academic and industry experts. SIGGRAPH 2007 Courses deliver invaluable learning opportunities in three formats (tutorials, half-day classes, and full-day classes) and three levels of difficulty (beginning, intermediate, and advanced). Attendees learn principles and techniques that shape software evolution, hardware systems, feature-film production, and future research directions.

Courses Committee

Courses Co-Chair Sara McMains

University of California, Berkeley

Courses Co-Chair Peter-Pike Sloan

Microsoft Corporation

Tony ApodacaPixar Animation Studios

David Forsyth
University of Illinois at Urbana-Champaign

Matt Pharr Neoptica

Maryann Simmons Walt Disney Animation Studios

Dave Shreiner

Zöe J. WoodCalifornia Polytechnic State University, San Luis Obispo

Full Conference registration allows attendees access to all SIGGRAPH 2007 Courses.

Attendees in all registration categories may attend Course 7: Introduction to SIGGRAPH and Computer Graphics.

Attendees who are registered in the Full Conference and Conference Select categories may attend Course 10: An Interactive Introduction to OpenGL Programming.

Seating is on a first-come, first-served basis. Please be sure to arrive early for the Courses you wish to attend. All the Course Notes are on the Full Conference DVD-ROM that Full Conference attendees receive with their registration.

1

Computational Photography

Full-Day, Sunday, 5 August, 8:30 am - 5:30 pm

Level: Intermediate

Camera fundamentals, powerful computational tools, and many real world examples of the latest computational methods in digital imaging that overcome the traditional limitations of a camera and enable novel imaging applications. This course provides a practical guide to topics in image capture and manipulation methods for generating compelling pictures for computer graphics and for extracting scene properties for computer vision.

Prerequisites

A basic understanding of camera operation and image processing. Familiarity with concepts of linear systems, convolution, and machine vision will be useful.

Intended Audience

Photographers, digital artists, image processing programmers and vision researchers who use or build applications for digital cameras or images.

Co-Organizers Ramesh Raskar

Mitsubishi Electric Research Laboratories (MERL) raskar@merl.com

Jack Tumblin

Northwestern University jet@cs.northwestern.edu

Lecturers

Andrew DavidhazyRochester Institute of Technology

Todor Georgiev

Adobe Systems Incorporated

Marc Levoy

Stanford University

Shree Navar

Columbia University

Room 6 DE

Schedule 8:30 am			Multi-Perspective Photography Davidhazy		
8:40 am	Concepts in Computational Photography Tumblin	2:20 pm	Lightfield Photography and Microscopy Levoy		
9:10 am	Understanding Film-Like Photography Raskar	2:50 pm	Fourier Analysis of Light Fields Georgiev		
9:40 am	Image Processing Tools Tumblin	3:10 pm	Questions and Answers		
10:15 am	Break	3:30 pm	Break		
10:30 am	Improving Film-Like Photography Tumblin	3:45 pm	Computational Illumination		
10:50 am	Computational Camera Nayar	4:25 pm	Computational Imaging		
11:50 am	•	4.25 pm	in the Sciences Levoy		
	Tumblin	4:55 pm	Future Cameras		
12:15 pm	Lunch		паѕкаг		
		5:15 pm	Summary and Discussion		

2

Mesh Parameterization-Theory and Practice

Full-Day, Sunday, 5 August, 8:30 am - 5:30 pm

Level: Advanced

Mesh parameterization is a powerful geometry processing tool with numerous computer graphics applications, from texture mapping to animation transfer. This course outlines its mathematical foundations, describes recent methods for parameterizing meshes over various domains, discusses emerging tools like global parameterization and inter-surface mapping, and demonstrates a variety of parameterization applications.

Prerequisites

Some prior exposure to mesh representation of geometric models and a basic knowledge of vector calculus, elementary linear algebra, and the fundamentals of computer graphics. A few lectures may also assume some familiarity with differential geometry, graph theory, and numerical optimization.

Intended Audience

Graduate students, researchers, and application developers who seek to understand and apply the concepts and technologies used in mesh parameterization.

Room 1 AB

Co-Organizers Alla Sheffer

University of British Columbia sheffa@cs.ubc.ca

Kai Hormann

Technische Universität Clausthal kai.Hormann@tu-clausthal.de

Bruno Levy

INRIA

bruno.levy@loria.fr

Lecturers Mathieu Desbrun

California Institute of Technology

Kun Zhou

Microsoft China

Schedule

8:30 am Introduction

Sheffer

8:45 am Differential Geometry Primer

Hormann

9:15 am Barycentric Mappings

Hormann

9:45 am Setting the Boundary Free

Levy

10:15 am Brea

10:30 am Indirect Methods - ABF

and Circle Patterns

Sheffer

11 am Making it Work in

Practice Segmentation and Constraints

Zhou

11:45 am Comparison and

Applications of Planar

Methods Hormann

12:15 pm Lunch

1:45 pm Spherical Parameterization

Sheffer

2 pm Discrete Exterior Calculus

in a Nutshell

Desbrun

2:30 pm Global Parameterization

Desbrun

3:30 pm Break

3:45 pm Cross-Parameterization/

Inter-Surface Mapping

Sheffer

4:15 pm Making it Work in Practice

Numerical Aspects

Levv

4:45 pm Comparison and

Applications of Global Methods

Levy

5:15 pm Open Problems and

Questions and Answers

All

Sketch-Based Interfaces: Techniques and Applications

Full-Day, Sunday, 5 August, 8:30 am - 5:30 pm

Level: Intermediate

Sketch-based interfaces are a natural (pencil-and-paper-like) approach to interaction with a variety of applications, including conceptual modeling, animation, and mechanical design. This course offers an in-depth discussion of the design of sketchbased interfaces ranging from simple gestural commands to complex sketch-understanding systems.

Prerequisites

Basic concepts in human-computer interaction and/or user interfaces. Introductory computer graphics.

Intended Audience

User interface designers, developers, and researchers who want to gain a better understanding of the intuition behind and internal workings of sketch-based interfaces.

Organizer Joseph LaViola University of Central Florida jjl@cs.ucf.edu

Lecturers Takeo Igarashi University of Tokyo

Christine Alvarado Harvey Mudd College

Hod Lipson Cornell University

Room 7 AB

Schedule 8:30 am Welcome and Introduction

LaViola

8:50 am Sketching and Gestures 101

LaViola

9:15 am Sketch Understanding

Systems Alvarado

10:15 am Break

10:30 am Sketch-Based Interfaces

for Interactive Computer **Graphics Applications** Igarashi

11:15 am Sketching for Mechanical

Design and CAD Lipson

11:45 am Sketching and Education

LaViola

Noon Questions & Answers

12:15 pm Lunch

Multi-Domain Sketch 1:45 pm

Understanding Alvarado

2:35 pm Designing Freeform Surfaces

by Sketching Igarashi

3:30 pm Break

Creating Geometry From 3:45 pm

Sketch-Based Input

Lipson

4:45 pm Mathematical Sketching

LaViola

5:25 pm Questions and Answers

ΑII

State of the Art in Massive Model Visualization

Full-Day, Sunday, 5 August, 8:30 am - 5:30 pm

Level: Intermediate

Users consistently try to interactively display more data than computing systems allow. Massive 3D models are commonplace in film, games, CAD product design, medical imaging, seismic exploration, information spaces, etc. and routinely cause problems. This course covers techniques that effectively overcome system constraints to allow real-time interaction with massive models.

Prerequisites

General knowledge of the difference between ray tracing and rasterization. Familiarity with computing system architecture, display list concepts, graphics hardware accelerators, and parallel processing.

Intended Audience

Users of complex models and practitioners who build real-time 3D applications. The techniques apply to any community that commonly reduces model detail (for example, games) or works only with model chunks (for example, CAD). The course contrasts the strategies required for real time in a limited computing environment.

Room 9

Organizer David J. Kasik

The Boeing Company david.j.kasik@boeing.com

Lecturers Beat Brüderlin

Technische Universität Ilmenau and 3DInteractive GmbH

Wagner Correa

IBM Corporation

Andreas Dietrich

Universität des Saarlandes and inTrace GmbH

Enrico Gobbetti

CRS4

Dinesh Manocha

University of North Carolina at Chapel Hill

Fabio Marton

CRS4

Inigo Quilez

VRContext

Philipp Slusallek

Universität des Saarlandes and inTrace

GmbH

Abe Stephens

University of Utah

Sung-Eui Yoon

Lawrence Livermore National

Laboratories

Schedule

8:30 am Motivation and Challenges

Kasik

9 am Overview Technical Context

Gobbetti

Efficient Data Reduction and 9:25 am

Cache-Coherent Techniques Toward Real-Time Performance

Manocha and Yoon

10:15 am Break

10:30 am SPVN: A New Application

Framework for Interactive Visualization of Large Datasets

Correa

11:20 am Visibility-Guided Rendering

to Accelerate 3D Graphics Hardware Performance

Brüderlin

12:15 pm Lunch

GPU-Friendly Accelerated

Mesh-Based and Mesh-Less Techniques for the Output-Sensitive Rendering of Huge Complex 3D Models

Gobbetti and Marton

2:35 pm Ray Tracing With Multi-Core/

Shared Memory Systems

Stephens

Break 3:30 pm

4:30 pm

5 pm

3:45 pm Massive Model Visualization

Using Realtime Ray Tracing Slusallek and Dietrich

Putting Theory Into Practice

Quilez

Stump the Speaker Panel

Introduction to Direct3D 10

Full-Day, Sunday, 5 August, 8:30 am - 5:30 pm

Level: Intermediate

Direct3D 10 is a major revision of the Direct3D graphics API for high-performance applications and games running on a new generation of PC video hardware. This course provides a detailed overview of the new API, technologies, and techniques required for developing Direct3D 10 applications.

Prerequisites

Familiarity with developing Direct3D 9 or OpenGL graphics applications, and basic proficiency in writing code in a high-level programmable shader language such as HLSL, Cg, or GSL.

Intended Audience

Attendees who are familiar with graphics programming and graphics practitioners who are looking at the new generation of Direct3D hardware. It provides advice from developers having worked with the pre-release versions, and detailed coverage of techniques for designing, developing, and debugging a broad range of graphical applications.

Room 11 AB

Organizer Chuck Walbourn Microsoft Corporation chuckw@microsoft.com

Lecturers **Daniel Barrero** Relic Entertainment

Chas Boyd Microsoft Corporation

Sam Glassenberg Microsoft Corporation

Nick Porcino

Doug Service

LucasArts

Microsoft Game Studios

Carsten Wenzel Crytek

Schedule

8:30 am Introduction Walbourn

8:35 am Bootstrapping Direct3D 10

Walbourn

The Direct3D 10 Pipeline 9:15 am

10:15 am Break

10:30 am HLSL Shader Model 4.0

Oneppo

11:30 am Effects 10

Glassenberg

12:15 pm Lunch

1:45 pm Porting Game Engines to

Direct3D 10 - Crytek's Crysis

Wenzel

2 pm Porting Game Engines to Direct3D 10 - Relic

Entertainment's Company of

Heroes

Barrero

Porting Game Engines 2:30 pm

to Direct3D 10 - Microsoft's

Flight Simulator X

Service

3 pm Content Tools and Film Use

of Direct3D 10

3:30 pm Break

3:45 pm Debugging Direct3D 10

Applications

Walbourn

4:15 pm Performance Tuning for

Direct3D 10

Boyd

Questions and Answers

5:15 pm



Anyone Can Cook - Inside Ratatouille's Kitchen

Half-Day, Sunday, 5 August, 8:30 am - 12:15 pm

Level: Intermediate

The passion for cooking and food are the central theme of Pixar's recent film, "Ratatouille." This complex and multi-faceted problem posed many challenges that were solved using diverse computer graphics and production techniques. This course comprehensively covers all aspects related to food, including modeling, dressing, shading, lighting and effects.

Prerequisites

Intermediate knowledge of 3D workflow, procedures, and terminology is helpful but not required. Topics range from intermediate to advanced.

Intended Audience

Anyone with an interest in feature animation, including students looking for an overview of how large productions run and seasoned professionals looking for ideas to incorporate into their work.

Room 6 AB & CF

Organizer Apurva Shah

Pixar Animation Studios apurva@pixar.com

Lecturers Jun Han Cho Athena Xenakis Stefan Gronsky

Pixar Animation Studios

Schedule

8:30 am Welcome, Speaker

Introduction, Short Overview

Shah

Modeling & Dressing 8:45 am

Cho

9:30 am Shading

Xenakis

10:15 am Break

10:30 am Lighting

Gronsky

11:15 am Cooking Effects

Noon Wrapup, Question and

Answers

ΔII

Introduction to SIGGRAPH and Computer Graphics

Half Day, Sunday, 5 August, 8:30 am - 12:15 pm

Room 4

Level: Beginning

This course eases newcomers into the SIGGRAPH experience, so they can make the best use of their time and extract maximum value from being here. Topics include the big ideas of computer graphics, a conference overview, and how to obtain the information that matters most to attendees.

Prerequisites

A basic understanding of computers and algebra.

Intended Audience

Complete newcomer to SIGGRAPH and computer graphics who wants to learn some of the basic terms and concepts and receive some guidance on how to get the most out of the conference.

Organizer Mike Bailey

Oregon State University Mjb@cs.oregonstate.edu

Lecturer

Andrew Glassner

Coyote Wind Studios

Schedule

9 am

8:30 am

Welcome and Overview Course Goals and Schedule Bailey

How to Attend a SIGGRAPH, I

- How to Read the Schedule and Where to Get More Help
- What Other Courses Will Attending This One Qualify You For?
- What is the Difference Between Papers and Panels?
- What are Posters?
- · What is the Educators program?
- What to Look for in the Exhibition, and Advice on Getting the Most From it in a Short Time

Bailey

9:30 am How to Attend a SIGGRAPH, II

- Why You Want to Attend the Electronic Theater and
- How is the ET Different From the Computer Animation Festival?
- What is the Difference Between Papers and Sketches?
- What is Special About the Art Gallery?
- · What is the Guerilla Studio? Glassner

9:45 am Scientific and Data

Visualization

- What Problems are You Trying to Solve?
- How Does This Impact Hardware and Software Decisions?

Bailey

10 am **GPU Programming**

- · Vertex, Geometry, Fragment Shaders
- Where Does This Fit in the Graphics Pipeline?
- What You Can Do With Shaders -- Effects, Visualization, Geometry
- How Does This Affect Buying a Graphics Card? Bailey

10:15 am Break

10:30 am Modeling

- The Creation of 3D Models
- Scene Descriptions
- · Levels of Detail
- Model "Robustness" Versus Complexity
- · Geometric Primitives

Glassner

11 am Rendering

- Efficiency, Accuracy, Effects
- Two Approaches: Start at the Object and Start at the Eve
- Local and Global Illumination
- Shading
- Cel Rendering
- Toon rendering
- Rendering in Hardware

Glassner

11:30 am Animation

- Keyframe Interpolation
- Object Geometry Animation
- Camera Animation
- Kinematics and Inverse. Kinematics

Glassner

Noon

Finding Additional Information Bailey

High-Quality Rendering Using Ray Tracing and Photon Mapping

Half Day, Sunday, 5 August, 8:30 am - 12:15 pm

Level: Intermediate

Detailed descriptions of the ray-tracing and photon-mapping algorithms for rendering complex scenes with indirect illumination, caustics, participating media, and subsurface scattering. The emphasis is on the practical insight necessary to use and implement these algorithms in production of high-quality images in movies, games, architecture, etc.

Prerequisites

A good understanding of lighting and shading as well as linear algebra.

Intended Audience

Anyone interested in high-quality rendering and global illumination.

Organizer Henrik Wann Jensen

University of California, San Diego henrik@cs.ucsd.edu

Lecturer Per Christensen Pixar Animation Studios

Schedule Overview 8:30 am Jensen

Room 8

8:35 am The Ray Tracing Algorithm

Christensen

9:15 am The Photon Mapping

Algorithm Jensen

10:15 am Break

10:30 am Ray Tracing Complex Movie

Scenes (Using Cars as an

Example) Christensen

11:15 am Faster Photon Mapping for

the Movies Christensen

11:30 am Photon Mapping for

Simulating Participating Media and Subsurface

Scattering

Jensen

Noon Real-Time Global Illumination

With Photon Mapping

Jensen



From "Shrek" to "Shrek the Third": Evolution of CG Characters in the "Shrek" Films

Half Day, Sunday, 5 August, 1:45 - 5:30 pm

Room 6 AB & CF

Level: Intermediate

Unique insights into how "Shrek" characters evolved over three films. The speakers, who have held key positions on all "Shrek" productions, will discuss the choices that helped keep the "Shrek" franchise unique, as well as the challenges of constantly adapting to new technical and creative demands.

Prerequisites

A basic understanding of the principles of computer graphics and 3D animation. Recommended: attendees should have seen the animated features "Shrek," "Shrek2," and "Shrek the Third."

Intended Audience

Attendees who have an interest in the technical aspects of production of 3D animated feature films and who have a basic understanding of computer-generated animation.

Organizer Philippe Gluckman PDI/DreamWorks philippe@anim.dreamworks.com

Lecturers **David Doepp** Scott Peterson Jason Waltman Lucia Modesto **Larry Cutler** Bill Seneshen PDI/DreamWorks Schedule

1:45 pm Introduction

• Where We Focused Our Efforts and Why

• Structure of the Course & Speaker Introduction Gluckman

Character Rigging -2 pm

 Evolution of Principal Characters

Maintaining and Updating

Legacy Setups

 Creating Diversity: Generics and Crowds

• Specific Challenges: Hair and Clothing

Modesto and Cutler

3:30 pm

3:45 pm Visual Development: Texturing

· Texturing Skin and cloth

Doepp

4 pm Visual Development: Hair

Hairstyle Progressions

• Hair Advancements in Modeling/Simulation and Rendering

Peterson and Waltman

4:35 pm Dynamic Clothing

• Initial Technical Constraints and Their Impact on Clothing Design

• Technical Advances That Broadened Design Possibilities

Seneshen

5:10 pm Putting it All Together

 Discussion of Character Lighting on "Shrek"

Gluckman

5:25 pm Conclusion and Questions

10

An Interactive Introduction to OpenGL Programming

Half Day, Sunday, 5 August, 1:45 - 5:30 pm

Level: Beginning

This course gives novice OpenGL programmers the knowledge they need to author interactive 3D, graphics applications using OpenGL. It covers fundamental topics such as modeling, lighting, depth buffering, and texture mapping, and it introduces advanced topics such as using vertex and fragment shaders.

Prerequisites

Attendees should be able to read simple programs written in the C language. No previous experience with writing graphics applications is required. The course includes concepts from linear algebra (vector notation and matrix multiplication), but previous knowledge of these subjects is not required.

Intended Audience

Anyone interested in learning how to author applications using OpenGL.

Room 4

Organizer
Dave Shreiner

ARM shreiner@siggraph.org

Lecturers Ed Angel

University of New Mexico

Vicki Shreiner

Schedule

1:45 pm Welcome, Introduction of Speakers, Course Overview

D. Shreiner

1:55 pm Getting Started With

OpenGL

a. What You Need to Write an OpenGL Application

b. Opening an OpenGL
Window

c. Accessing OpenGL Functions

d. Processing User Input

V. Shreiner

2:25 pm Working with Objects in

OpenGL

a. How OpenGL Specifies Objects

b. Working With Geometric
Transformations

Transformations c. Depth Buffering

d. Animation - Getting

Objects to Move

V. Shreiner

3:10 pm Lighting in OpenGL

a. Specifying Lighting Attributes

b. Lights, Materials, Action ...

D. Shreiner

3:30 pm Break

3:45 pm Lighting in OpenGL

(Continued) **D. Shreiner**

4:05 pm Texture Mapping a. Fundamentals

b. Loading and Enabling Textures Mapping

c. Specifying Texture coordi nates

d. How Textures Are Applied

Angel and D. Shreiner

4:50 pm Survey of Advanced Topics

a. Buffers

a. Buffers
b. Introduction to Vertex and
Fragment Programs
Angel and D. Shreiner

5:15 pm Conclusion and Questions

and Answers

All

11

Practical Least-Squares for Computer Graphics

Half Day, Sunday, 5 August, 1:45 - 5:30 pm

Level: Intermediate

An overview of the least-squares technique and its variants, and how they are used in computer graphics applications. This course delivers a "cookbook" understanding of least-squares techniques and how they have been used to address graphics problems.

Prerequisites

An introductory course to computer graphics and some basic knowledge in linear algebra at the level of OpenGL transforms.

Intended Audience

Undergraduate and lower-level graduate students, and technical directors in film and game production.

Organizer Fred Pighin

Industrial Light + Magic fpighin@ilm.com

Lecturer J.P. Lewis

Stanford University

Room 8

Schedule

1:45 pm Introduction

MotivationHistory

Pighin

1:55 pm Ordinary Least-Squares

Least-Squares and Linear AlgebraOptimalityPighin

2:35 pm Generalized Error Function

Weighted Least-SquaresTotal Least-Squares

Lewis

3:30 pm Break

3:45 pm Robust Least-Squares

Solving With Outliers

Lewis

4:05 pm Regularization

Truncated SVD

Damping

Pighin

4:30 pm Constrained Least-Squares

Lagrange multipliers

Lewis

5 pm Non-Linear Least-Squares

Pighin

12

"Surf's Up": The Making of an Animated Documentary

Half Day, Monday, 6 August, 8:30 am - 12:15 pm

Level: Beginning

A detailed look at the making of the animated documentary "Surf's Up": the live-action camera implementation, character animation, wave effects, and rendering techniques that contributed to the film's unique look and style.

Prerequisites

None. Familiarity with basic 3D techniques will help attendees understand some of the detailed portions of the presentation.

Intended Audience

Animation professionals, students, and anyone interested in 3D animated films. Those interested in the artistic and aesthetic choices made during production will particularly benefit from the first section of the course, while those with more technical and pipeline-related interests will appreciate the wave information presented in the second section.

Organizer

Rob Bredow Sony Pictures Imageworks rob@185vfx.com

Lecturers
David Schaub
Daniel Kramer
Danny Dimian
Matt Hausman
Sony Pictures Imageworks

Room 1 AB

Schedule

8:30 am Introduction and Course

Overview **Bredow**

8:45 am Making an Animated

Documentary -

The Premise, the Live-Action Camera, and Slow Motion

Bredow

9:15 am Animation

Schaub

10:05 am Questions

All

10:15 am Break

10:30 am Making Waves - Initial

Development and Wave

Pipeline Kramer

11 am Wave Effects

Hausman

11:45 am Wave Shading

Dimian

12:05 pm Questions and Wrap Up

All

A Gentle Introduction to Bilateral Filtering and Its Applications

Half Day, Monday, 6 August, 8:30 am - 12:15 pm

Level: Intermediate

The bilateral filter is ubiquitous in computational photography applications. It is increasingly common in computer graphics research papers, but no single reference summarizes its properties and applications. This course provides a graphical, strongly intuitive introduction to bilateral filtering, and a practical guide for image editing, tone-maps, video processing and more.

Prerequisites

All motivated beginners are welcome. Familiarity with integrals or Gaussian functions is not required, but the course assumes that attendees know some digital-image basics (pixels, gray levels, noise) and have some modest programming experience.

Intended Audience

Anyone who wants to get into image editing, computational photography, and related fields. Anyone interested in image manipulations: researchers, developers, software designers and others.

Organizer Sylvain Paris

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory sparis@csail.mit.edu

Lecturers Pierre Kornprobst

INRIA

Jack Tumblin

Northwestern University

Frédo Durand

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

Schedule

8:30 am Introduction

- · Presentation of the Course
- Filtering Purpose and Examples
- Abilities and Limitations
- Definitions (Images, Pixels...)

Paris

8:40 am Gaussian Blur

- Definition
- · Examples, Effects of the Parameters
- · Discussion of the Limitations

Paris

8:50 am Fixing the Gaussian Blur: the Bilateral Filter

• The Range Gaussian to

- Preserve Discontinuities
- Examples (1D, 2D Gray-Level 2D Color)
- Effects of the Parameters

Paris

Demonstrations on Practical 9:05 am

Applications

- · Denoising (Tomasi 98, Liu 06)
- Texture Removal (Oh 01)
- Tone Mapping (Durand 02)

Durand

9:40 am

Interpreting the Bilateral

- Link With PDEs (Elad 02, Buades 05)
- Robust Statistics (Durand 02)
- Mode Seeking in Local Histograms (van de Weijer 2001)

Kornprobst

10:15 am Break

Room 4

10:30 am Efficient Implementations

- · Separable Kernel for Small Neighborhoods (Pham 05)
- Local Histograms (Weiss 06)
- Space-Intensity Domain (Paris 06)

Paris

10:55 am Variants of the Bilateral Filter • Trilateral Filter (Choudhury

- 03
- Cross Bilateral Filter (Eisemann 04, Petschnigg 04)

Tumblin

11:10 am Applications

- Flash/No-Flash (Eisemann 04, Petschnigg 04)
- Tone Management (Bae 06)
- Exposure Correction (Bennett 05)
- Video Abstraction (Winnemöller 06)

Tumblin

11:40 am Limitations

- Over Sharpening
- Possible Fixes: Regression Filter, Gradient Manipulation, Edge Blending..

Kornprobst

11:55 am Possible Extensions

Optical Flow, Motion Estimation (Xiao 06, Sand 06)

• Mesh Fairing (Jones 03, Fleishman 03)

Kornprobst

12:05 pm Conclusions

- It is as Simple as Two Gaussian Functions
- · What Next? Meshes, NI -means...

Tumblin

Urban Design and Procedural Modeling

Half Day, Monday, 6 August, 8:30 am - 12:15 pm

Level: Intermediate

How procedural modeling techniques are used to create urban environments for computer games, movies, architectures, and archeology. The course quickly surveys previously published techniques and theory, and then delve into their use in graphics practice: tool demonstrations, fitting to real and artistic data, the needs of gaming, and preparation for rendering.

Prerequisites

Knowledge of basic computer graphics, such as triangle meshes, hierarchical data structures, texture mapping and ray tracing, and procedural modeling techniques such as particle and L-systems.

Intended Audience

Producers who use and researchers who design computer graphics modeling tools for creating 3D digital content.

Co-Organizers Benjamin Watson North Carolina State University bwatson@ncsu.edu

Pascal Müller

ETH Zürich pmueller@vision.ee.ethz.ch

Lecturers Peter Wonka Arizona State University

Andy Fuller Flectronic Arts

Room 7 AB

Schedule

8:30 am Introduction

Watson

8:45 am

State of The Art In Urban Modeling & Rendering & Texturing

- Street Networks
- · Stiny's Shape Grammar
- Procedural Facade Modeling
- Roofs
- · Texturing & Lighting
- Real-time Rendering
- Wonka

9:30 am

Applied Procedural Modeling

- The CityEngine System
- · Encoding of Buildings
- Parameterization of Buildings
- Stochastic Modeling
- Procedural Reconstruction of Archaeological Sites
- Applications in Architecture
- Procedural Modeling in Entertainment

Müller

10:15 am Break

10:30 am Procedural Urban Content in Need For Speed (NFS)

- Introduction
- Procedural Methods Used in NFS
- How We Create Cities for NFS
- Overview of Development Process
- Potential Benefits of Improved Procedural City Modeling in NFS
- Time Savings
- Accurate Scale
- Consistency
- The Procedural Capabilities We'd Like to Have

Fuller

11:15 am Real And Virtual Urban

- Design · How Real Cities are Laid
- Out and Developed How to Develop Virtual
- Cities for Graphic Display Steering the Process
- Polishing the Results
- · Survey of Results

Watson

Noon Open Discussion

> Conclusion and Questions and Answers

Selected Videos (Depending on Time)

ΑII

Example-Based Texture Synthesis

Half Day, Monday, 6 August, 8:30 am - 12:15 pm

Level: Intermediate

An introduction to example-based texture synthesis and its applications. Topics include various algorithmic paradigms for synthesis including representational and processing issues across domains. The course also reviews applications such as image and video synthesis and editing, geometry and surface texture synthesis, controllable and interactive synthesis on the GPU, and fluid texturing.

Prerequisites

Basic knowledge of 3D computer graphics and some understanding of elementary image processing.

Intended Audience

Academicians and practitioners who want to learn how to use textures to automate synthesis in many scenarios such as special effects, image editing, content creation, rendering and animation.

Co-Organizers Vivek Kwatra

University of North Carolina at Chapel Hill kwatra@cs.unc.edu

Li-Yi Wei

Microsoft Research Asia liyiwei@stanfordalumni.org

Lecturers **Greg Turk**

Georgia Institute of Technology

Sylvain Lefebyre

INRIA Sophia-Antipolis

Contributors Yanxi Liu

Pennsylvania State University Carnegie Mellon University

Alexei Efros

Carnegie Mellon University

Aaron Hertzmann

University of Toronto

Antonio Criminisi

Microsoft Research Cambridge

Room 8

Schedule

8:30 am Introduction and Overview

Kwatra and Wei

8:45 am Fundamentals and Basic

• Preliminaries, Definition of Textures, Historical

- Perspectives Neighborhood Matching and Multi-Resolution
- Approaches · Accelerations: TSVQ,
- kd-tree, and k-coherence Patch-Based Synthesis
- •Optimization-Based Synthesis
- Globally Variant Textures

9:30 am

Texturing Surfaces and Geometry Creation:

- Texture Synthesis on Surfaces
- Volumetric Geometry Synthesis
- · Geometric Hole Filling and Mesh Quilting
- Terrain Synthesis Turk

10:15 am Break

10:30 am Dynamic Texture Synthesis

- Video Textures
- Image and Video Synthesis Using Graph Cuts
- Texture Optimization and Flow-Guided Texture Animation
- Fluid Texturing

Kwatra

11:20 am Runtime Texture Synthesis:

- Order-Independent Synthesis
- Parallel Controllable Synthesis
- Appearance-Space Synthesis
- Pattern-Based Procedural Textures
- Tile-based Texture Mapping on Graphics Hardware

Lefebvre

12:05 pm Discussion and Questions

Practical Global Illumination With Irradiance Caching

Half Day, Monday, 6 August, 8:30 am - 12:15 pm

Level: Intermediate

A practical guide to implementing irradiance caching algorithms to efficiently render flawless images featuring global illumination. The course summarizes recent research advances related to irradiance caching: caching on glossy surfaces, temporal caching, acceleration through GPU implementation, and irradiance decomposition.

Prerequisites

Basic understanding of rendering, ray tracing in particular. Familiarity with global illumination concepts is useful but not required.

Intended Audience

Anyone interested in making an irradiance caching implementation that reliably renders artifact-free images. Researchers and industrial developers interested in recent speed and quality improvements of global illumination with irradiance caching.

Room 9

Organizer Jaroslav Křivánek

Czech Technical University in Prague

Xkrivani@fel.cvut.cz

Lecturers **Pascal Gautron** France Télécom R&D

Greg Ward

Anyhere Software

Okan Arikan

University of Texas at Austin

Schedule

8:30 am Introduction

Křivánek

8:35 am Stochastic Ray Tracing

Křivánek

8:55 am Irradiance Caching Algorithm

Ward

9:25 am Implementation of Irradiance

Caching in RADIANCE

Ward

9:45 am Further Implementation

Details Křivánek

10:15 am Break

10:30 am Extension to Glossy

Surfaces: Radiance Caching

Křivánek

10:50 am Hardware Implementation

Gautron

11:10 am Temporal Coherence

Gautron

11:35 am Irradiance Decomposition

Arikan

Noon Discussion

ΑII

Spatial Augmented Reality: Merging Real and Virtual Worlds

Half Day, Monday, 6 August, 8:30 am - 12:15 pm

Level: Intermediate

A survey of the latest techniques for augmented-reality that go beyond conventional head-mounted displays. The course introduces prototypes, explains rendering and calibration algorithms, discusses case studies, and presents techniques beyond visual augmentation. It also summarizes new applications in art, science, education, and industry that are enabled by modern techniques in augmented reality.

Prerequisites

Helpful but not required: general knowledge of basic computer graphics techniques, 3D tools and optics. Not required: programming or specific mathematical experience.

Intended Audience

Designers of augmented-reality systems, programmers, and artists who want to learn about modern hardware and software techniques to combine the real and virtual worlds.

Co-Organizers Ramesh Raskar

Mitsubishi Electric Research Laboratories (MERL) raskar@merl.com

Oliver Bimber

Bauhaus University bimber@uni-weimar.de

Lecturer Masahiko Inami

The University of Electro-Communications

Room 11 AB

Schedule

8:30 am Course Introduction and

Overview

Raskar

8:40 am Introduction to Current

Approaches

9:20 am New Directions in

Augmentation Raskar

10:15 am Break

10:30 am Augmentation on Everyday

Surfaces

Bimber

11 am Beyond Visual Augmentation

Inami

11:30 am Prototypes and Experiences

Bimber and Raskar

12:05 pm Questions and Answers

Résumés and Demo Reels: If Yours Don't Work, Neither Do You!

Tutorial, Monday, 6 August, 3:15 - 5:30 pm

Learn what it takes to get a job in the computer graphics field. A top career coach and recruiter reveals the secrets of how to create an irresistible résumé and showcase your talent in a demo reel to get the job you want. Sample résumés and demo reels are included.

Prerequisites

Level: Beginning

None.

Intended Audience

Hiring managers and job seekers. Professionals, students and educators all benefit from this presentation.

Room 1 AB

Organizer Pamela Kleibrink Thompson Ideas to Go PamRecruit@aol.com

Schedule 3:15 pm Introduction **Thompson** 3:20 pm Résumés and Cover Letters Thompson Portfolios 3:40 pm **Thompson** 3:50 pm Demo Reels and Breakdown Sheets Thompson 4:40 pm Career Tips - Attitude, etc. Thompson 4:50 pm Conclusion Thompson

Sorting in Space: Multidimensional, Spatial, and Metric Data Structures for Computer Graphics Applications

Tutorial, Monday, 6 August, 3:15 - 5:30 pm

Room 4

Level: Beginning

How to represent spatial data using techniques that sort the data with respect to the space they occupy. These techniques include quadtrees, octrees, and bounding-volume hierarchies, and they are useful for speeding up operations that involve search in all computer graphics applications including games, ray tracing, and solid modeling.

Prerequisites

Familiarity with computer terminology and some programming

Intended Audience

Computer graphics practitioners, especially game developers and technical managers, who are seeking a different perspective on data structures that are useful in most applications.

Organizer **Hanan Samet**

University of Maryland at College Park his@cs.umd.edu

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3:15 pm Introduction a. Sample Queries b. Spatial Indexing c. Sorting Approach d. Minimum Bounding Rectangles (e.g., R-tree) e. Disjoint Cells (e.g., R+-tree, k-d-B-tree) f. Uniform Grid

g. Location-Based Queries vs. Feature-Based Queries h. Region Quadtree

i. Pyramid j. Region Quadtrees vs. Pyramids

k. Space Ordering Methods

Samet

4 pm **Points** a. Point Quadtree

b. MX Quadtree c. PR Quadtree d. k-d Tree

Samet

4:10 pm Lines

a. Strip Tree b. PM1 Quadtree c. PM2 Quadtree d. PM3 Quadtree

e. PMR Quadtree

Samet

4:20 pm Rectangles

a. MX-CIF Quadtree b. Loose Quadtree

c. R-Tree Samet

4:30 pm Regions

a. Region Quadtree b. Dimension Reduction

c. Tessellations c. Bintree c. BSP Tree

Samet

4:40 pm Surfaces and Volumes

a. Restricted Quadtree b. Region Octree c. PM Octree

Samet

4:50 pm Metric Data a. vp-Tree

b. gh-Tree c. mb-Tree Samet

5 pm Operations

a. Incremental Nearest Object Location

b. Boolean Set Operations c. Nearest Neighbor

Operations

Samet

5:15 pm Example System

a. SAND Internet Browser b. JAVA Spatial Data Applets

Samet

20

Visualizing Quaternions

Tutorial, Monday, 6 August, 3:15 - 5:30 pm

Level: Intermediate

The fundamental features of quaternions as they apply to all fields of computer graphics and visualization. The course uses visual representations of quaternions themselves to provide intuition and insight.

Prerequisites

Understanding of and appreciation for conventional mathematical methods of 3D computer graphics and geometry used in geometric transformations and polygon rendering. The course will be of most interest to those who want to deepen their intuitive understanding of moving coordinate frames and quaternion-based animation techniques.

Intended Audience

Students, scientists, and practitioners whose work and/or interests involve 3D orientation frames.

Organizer Andrew Hanson

Indiana University hansona@indiana.edu

Room 7 AB

Schedule

3:15 pm Twisting Belts, Rolling Balls, and Locking Gimbals:

Explaining Rotation
Sequences With Quaternions

Hanson

4 pm

Quaternion Fields: Curves, Surfaces, and Volumes

Hanson

Database Techniques With Motion Capture

Tutorial, Monday, 6 August, 3:15 - 5:30 pm

Level: Intermediate

Motion capture databases are now large, varied, and widely used. This course covers database techniques useful for organizing, processing, and navigating such databases. Topics include choice of distance function, indexing for fast retrieval, and time-series prediction for stitching, segmentation, and outlier detection. Current and potential applications are discussed.

Prerequisites

Typical knowledge derived from undergraduate studies in computer science.

Intended Audience

Researchers that want to get up to speed with the major tools for indexing and processing of large motion-capture databases. Also practitioners who want a concise, intuitive overview of the state of the art.

Room 8

Organizer Nancy Pollard

Carnegie Mellon University Nsp@cs.cmu.edu

Lecturers **Christos Faloutsos** Jessica K. Hodgins Carnegie Mellon University Schedule

3:15 pm Introduction/Overview

Pollard

3:20 pm Database Techniques:

Examples in Computer Animation

Pollard

Database Techniques: 3:45 pm Methods

• Similarity Search and

Database Indexing

- Why We Need Similarity Search

 Distance Functions (Euclidean, LP norms, Time-Warping)

- Fast Searching (R-trees, M-trees)

• Feature Extraction

- DFT

- Wavelets

- SVD/PCA

- FastMap

- ICA

· Linear Forecasting

- Main Idea Behind Linear Forecasting

- AR Methodology

 Multivariate Regression - Recursive Least Squares

- De-Trending; Periodicities

Faloutsos

5:10 pm

Wrapup

• The CMU Motion Capture Database

• Discussion of Possible **Future Applications**

Hodgins

Thursday, 9 August

LucasArts and ILM: A Case Study in Film and Game Convergence

Tutorial, Thursday, 9 August, 10:30 am - 12:15 pm

Level: Beginning

Everyone is talking about film-game convergence. Lucasfilm is actually doing it. Working literally side by side, on the same codebase, LucasArts and ILM are leveraging each others' expertise to create a unified set of tools and techniques serving both companies. This course reviews their progress and challenges in unifying game and film technologies.

Prerequisites

None.

Intended Audience

Anyone involved with designing, creating, or using tools for visual effects or next-generation game development.

Co-Organizers Steve Sullivan

Industrial Light + Magic sullivan@ilm.com

Nick Pavis LucasArts

Lecturers

Nick Porcino LucasArts

David Bullock

Industrial Light + Magic

Room 1 AB

Schedule

10:30 am History and Goals of

Collaboration:

- Background on ILM and LucasArts
- Recent Film and Game Projects
- Our New Combined Facility in San Francisco
- Topics/Goals for

Collaboration **Sullivan and Pavis**

11 am Case Studies:

- ILM's Zeno Platform
- Level Authoring/Editing
- Particle Effects
- Digital Actor Studio
- Structural and Fluid Simulation
- Likeness Capture, Facial Mocap
- Real-Time and Offline Rendering

Porcino and Bullock

11:45 am Lessons Learned,

What's Ahead

- What Went Right
- What Went Wrong
- Challenges Ahead Takeaway Points

12:10 pm Questions and Answers

23

Geometric Modeling Based on Polygonal Meshes

Full-Day, Tuesday, 6 August, 8:30 am - 5:30 pm

Level: Intermediate

This course discusses the entire geometry processing pipeline based on polygonal meshes. Topics include fundamental concepts and recent developments for mesh generation, optimization, parameterization, and deformation. The course includes interactive demonstrations and provides full source code for most topics.

Prerequisites

Basic knowledge of geometric concepts, but not specific knowledge about polygonal meshes or the discretization of continuous problems for them.

Intended Audience

Computer graphics researchers, software developers, and engineers from CAGD, computer games, or the movie industry who are interested in geometry processing algorithms based on triangle meshes.

Co-Organizers Mario Botsch ETH Zürich botsch@inf.ethz.ch

Mark Pauly ETH Zürich Pauly@inf.ethz.ch

Lecturers Pierre Alliez INRIA Sophia-Antipolis, Geometrica

Leif Kobbelt RWTH Aachen

Bruno Levy LORIA/INRIA Lorraine

Room 7AB

Methods

Levy

Schedule 8:30 am Introduction **12:15 pm** Lunch **Botsch** 1:45 pm Mesh Decimation Surface Representations 8:45 am • Incremental Decimation • Explicit/Implicit Surface • Out-of-Core Decimation Representations Pauly • Triangle Meshes Kobbelt 2:20 pm Remeshing Isotropic 9:30 am Mesh Repair Quadrangle Types of Input Data • Error-Driven Surface-Based vs. Alliez Volumetric Repair Kobbelt 3:30 pm Break 10:15 am Break 3:45 pm Mesh Editing • Multiresolution Editing 10:30 am Mesh Smoothing • Differential Coordinates • Surface Analysis, Discrete · Linear vs. non-Linear Curvatures Methods · Laplacian Smoothing, Botsch Fairing Anisotropic, Bi-Lateral 4:50 pm Numerics Smoothing Linear System Solvers Pauly Comparison of Existing Libraries 11:15 am Mesh Parametrization **Botsch** • Harmonic Maps, Conformal Maps **5:10 pm** Wrap-Up • Free Boundary Maps Course Summary • Linear vs. Non-Linear • Demonstration of Code

Examples

ΔII

· Questions and Answers

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GPGPU: General-Purpose Computation on Graphics Hardware

Full-Day, Tuesday, 7 August, 8:30 am - 5:30 pm

Room 8

Schedule

Level: Advanced

Graphics processors (GPUs) have become powerful engines capable of a variety of computations beyond computer graphics. This course takes a detailed look at both basic and advanced issues related to computation on graphics hardware (GPGPU), with an emphasis on core computational building blocks and a focus on applications to graphics and simulation.

Prerequisites

Experience with a modern graphics API (OpenGL or Direct3D), including basic experience programming vertex and pixel shaders, and/or background with GPGPU languages. Some experience with GPGPU is helpful, but not necessary.

Intended Audience

Researchers and engineers interested in investigating general-purpose computation on graphics hardware, as well as graphics and game developers interested in incorporating these techniques into their applications.

Co-Organizers Mike Houston

Stanford University Mhouston@graphics.stanford.edu

Naga Govindaraju

Microsoft Corporation nagag@microsoft.com

Lecturers Mark Harris

NVIDIA Corporation

Jens Kruger

Technische Universität Munich

Aaron Lefohn

Neoptica

John Owens

University of California, Davis

Justin Hensley

Advanced Micro Devices, Inc.

8:30 am	Introduction Houston	Performand 1:45 pm	ce: Overview/GPU Bench Houston
8:50 am	GPU Architecture Overview Owens	2:05 pm	CUDA Harris
Building Blogs 9:15 am	ocks: Intro to Data Parallel Algorithms & Data Structures Owens	2:35 pm	CTM Hensley
9:45 am	Sorting/Data Queries Govindaraju	3:05 pm	Apps • Rendering • GPGPU and Rasterization Lefohn
10:15 am	Break		
Programmi	ng Models:	3:30 pm	Break
10:30 am	Overview Houston	3:45 pm	GPGPU and Raytracing Kruger
10:55 am	CUDA Buck	4:10 pm	Geometric Computing Govindaraju
11:35 am	CTM Hensley	4:30 pm	Physics - GPU Flow Kruger
12:15 pm	Lunch	4:50 pm	Game Physics Harris

5:15 pm

Closing Remarks/Questions

and Answers

ΔII

The Mobile 3D Ecosystem

Full-Day, Tuesday, 7 August, 8:30 am - 5:30 pm

Level: Intermediate

How to develop 3D applications for mobile devices, how they function, and where they are heading. The course focuses on OpenGL ES and M3G, and how to use these technologies to create efficient applications and deploy them in the mobile world. It covers the structure and evolution of 3D applications, shows programming examples, and provides tips and tricks for programmers and artists.

Prerequisites

Basic knowledge of 3D computer graphics. Working knowledge of a modern graphics API like OpenGL, D3D, X3D, or Java3D. Ability to read simple computer programs written in C and Java. Useful but not required: exposure to shading languages such as GLSL, HLSL, and Cg.

Intended Audience

Anyone who is interested in developing 3D graphics applications on mobile devices, although the content is targeted more towards programmers than artists.

Organizer Kari Pulli

Nokia Research Center kari.pulli@nokia.com

Lecturers Jani Vaarala Nokia Corporation

Ville Miettinen Hybrid Graphics, Ltd.

Robert J. Simpson AMD Finland

Tomi Aarnio Nokia Research Center

Mark Callow HI Corporation

Room 4

Schedule

Intro, Mobile Graphics, 8:30 am

OpenGL ES Pulli

9:10 am Using OpenGL ES 1.X Vaarala

10 am OpenGL ES on PyS60

Pulli

10:05 am Demos

10:15 am Break

10:30 am OpenGL ES Performance

Considerations Miettinen

11:15 am OpenGL ES 2.0

Simpson

12:15 pm Lunch

1:45 pm M3G Intro

Pulli

1:55 pm M3G API Overview

Aarnio

2:55 pm Demos

3:05 pm M3G in the Real World 1

Callow

3:30 pm Break

3:45 pm M3G in the Real World 2

Callow

4:45 pm M3G 2.0

Aarnio

5:15 pm Closing and Summary

• Current Status of OpenGL ES and M3G

• Other Related Mobile Multimedia Standards

Pulli

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The Morphology of Digital Creatures

Half-Day, Tuesday, 7 August, 8:30 am - 12:15 pm

Level: Beginning

Fundamental features of human and animal anatomy inform the structure of digital creatures, whether they are realistic or based upon novel combinations of known morphologies. This course connects the biomechanics and environmental adaptations of living and extinct organisms to techniques used to represent bone, muscles, and skin in digital creatures.

Prerequisites

Familiarity with 3D animation, character rigging, modeling, and deformation systems.

Intended Audience

Students and professionals interested in character design and performance.

Organizer Tim McLaughlin

Lucasfilm Animation scratchwc@yahoo.com

Lecturer Stuart Sumida

California State University San Bernardino

Room 11 AB

Schedule

8:30 am Introduction and Overview

McLaughlin

9 am Organisms Sculpted by Their

Environments

Sumida

9:45 am The Digital Expression of

Volume and Mass McLaughlin

10:15 am Break

10:30 am Basic skeletal Anatomy

Sumida

10:50 am Kinematic Systems

McLaughlin

11:15 am The Mechanics of Motion

Sumida

11:40 am Motion Generation

McLaughlin

Noon Questions and Answers

McLaughlin and Sumida

Anyone Can Make Quality Animated Films! The Eight Basic Steps to Success

Half-Day, Tuesday, 7 August, 1:45 - 5:30 pm

Level: Intermediate

How anyone with a little talent can apply industry-standard techniques to create professional animated films. Topics include: developing the client "pitch"; writing a winning script; creating a dynamite storyboard; character design; recording and/or gathering quality audio; animation production; 2D ink and paint process; and professional editing.

Prerequisites

Basic knowledge of 2D and 3D animation techniques, Photoshop, Flash, and Premiere or Final Cut Pro. Basic to advanced drawing skills.

Intended Audience

Anyone who is required or desires to produce an entire animation project, including: teachers and students; professionals who are producing demo reels; freelance artists who want to produce television commercials, cell phone games, or web presentations; and entrepreneurs who want to establish a small animation company.

Room 11 AB

Organizer Eric vanHamersveld

Art Institute of California-San Diego evanhamersveld@sbcglobal.net

Lecturers **Bob Hanon Debra Miller**

Art Institute of California-San Diego

Schedule

8:30 am Introduction

> vanHamersveld, Hanon, and Miller

8:50 am Step 1: Story & Script

vanHamersveld and Miller

9:20 am Step 2: Developing the Style

Hanon

9:50 am Step 3: Storyboarding

Hanon

10:15 am Break

10:30 am Step 4: The Audio

vanHamersveld and Miller

11 am Step 5: Layouts, Backgrounds &

Environments

11:15 am Step 6: Animation

vanHamersveld and Miller

11:30 am Step 7: Compositing

& Editing vanHamersveld, Hanon, and Miller

11:45 am Step 8: The Release Prints

vanHamersveld

Noon 8 Steps to Success -

vanHamersveld, Hanon, and Miller

Advanced Real-Time Rendering in 3D Graphics and Games

Full-Day, Wednesday, 8 August, 8:30 am - 5:30 pm

Level: Intermediate

The amazing power of the latest GPUs has spurred a real osmosis of ideas between the game developers and state-of-the-art graphics research. This course presents ground-breaking 3D rendering and innovative real-time algorithms from award-winning game engines that are pushing the visual boundaries and interactive experience of complex virtual worlds. These techniques are applicable in both real-time and offline domains.

Prerequisites

Working knowledge of a modern real-time graphics API like OpenGL or Direct3D. Familiarity with the concepts of programmable shading and shading languages.

Intended Audience

Technical practitioners and developers of graphics engines for visualization, games or effects rendering who are interested in interactive rendering.

Organizer Natalva Tatarchuk

AMD Graphics, 3D Application Research Group natashat@bu.edu

Lecturers **Christopher Oat**

AMD Graphics, 3D Application Research Group

Jason L. Mitchell Chris Green Valve Software

Johan Andersson DICE

Carsten Wenzel Crytek GmbH

Shanon Drone

Microsoft Corporation

Schedule

Room 7 AB

Introduction 8:30 am Tatarchuk

8:45 am Real-Time Particle System

on the GPU in Dynamic

Environments Drone

Real-Time Isosurface 9:30 am

Extraction and Rendering on

the GPU Tatarchuk

Break 10:15 am

10:30 am Surface Detail Maps With

Soft Self-Shadowing

Green

10:55 am Simple, Fast Vector Texture

Maps on GPU

Green

11:20 am Rendering Highly Detailed

Surfaces on the GPU

Tatarchuk

12:15 pm Lunch

1:45 pm Interactive Illustrative

Rendering in Team Fortress 2

Mitchell

2:30 pm Frostbite Rendering

Architecture and Case Study: Terrain Rendering

Andersson

3:30 pm Break

Real-Time Wrinkles 3:45 pm

Oat

4:20 pm Real-time Atmospheric

Effects in Games Revisited

Wenzel

5:15 pm Questions and Answers

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Crossing The Line: Moving From Film to Games (and Possibly Back)

Half-Day, Wednesday, 8 August, 8:30 am - 12:15 pm

Level: Beginning

As games have matured into the HDTV era, the need for rich, polished graphics is greater than ever. This course explores the impact that film artists can have upon video games and what game artists and studios can expect as game teams grow and more film people move into games.

Prerequisites

Very basic understanding of film production principles and an interest in video games. Recent experience with playing on current games consoles (Xbox, Xbox360 or Nintendo Game Cube) is also helpful.

Intended Audience

People in the film segments of the computer graphics industry who are considering a change to the games industry and artists, producers, and game developers who are working on their first next-generation game title.

Room 1 AB

Organizer Evan Hirsch Microsoft Corporation

evhirsch@microsoft.com

Lecturers

Rick Stringfellow Electronic Arts Canada Sal Melluso

Paul Amer Cliff Brett Brien Goodrich Tom Burlington Jamie Marshall Microsoft Game Studios Schedule

8:30 am Introduction and Story=Gameplay

Hirsch

9 am Team Structures and Workflows

Stringfellow

9:45 am Real-Time Character Pipelines

Amer

10:15 am Break

10:30 am Lighting/Post Processing

Goodrich and Marshall

11:15 am Transitioning Your Shader and FX

Skills Between Film and Real-Time

Brett

Noon Questions and Answers

All

30

Digital Art Techniques

Half-Day, Wednesday, 8 August, 8:30 am - 12:15 pm

Level: Intermediate

A partial survey of techniques for creation of digital art works. The course combines experiences of practicing artists with state-of-the-art research. Topics include: aesthetic concepts, novel interaction paradigms and mixed-media processing issues. Example works range from partially generative still imagery to VJ performances and interactive installations.

Prerequisites

Basic knowledge of computer graphics principles, audio and video signal processing, and human-computer interaction models.

Intended Audience

Interdisciplinary working artists and computer graphics scientists, especially those who are involved or interested in the development and use of software tools and digital techniques for the visual arts.

Co-Organizers Pascal Müller

ETH Zürich pmueller@vision.ee.ethz.ch

Stefan Müller Arisona

ETH Zürich Sma@corebounce.org

Lecturers Kenneth A. Huff Independent Artist

Bernd Lintermann

Zentrum für Kunst und Medientechnologie Karlsruhe

Room 4

Schedule

8:30 am Welcome, Introduction of Speakers, Short Overview

Müller

8:45 am One Artist's Work

- Inspiration From Nature
- Intent
- Conceptualization
- Development and Implementation
- Themes and Works
 Huff

9:30 am

am Performance Tools

- General Observations
- Example Tools Overview
- Real-Time Mixed Media Processing
- Design Oriented Authoring of Digital Art
- Example Works
- Arisona

10:15 am Break

10:30 am Live Visuals Tutorial

- Background
- Soundium
- Media Management
- Dynamic 2D Content
- Dynamic 3D Content
- Performance Workflow

Müller

11:15 am Interactive Generative Systems

Systems

- Introduction
- Organic ModelingSoftware: MTK
- Generative Systems
- Combinatoric Systems
- Immersive Environments
- Interactive Stage

Lintermann

Noon Wrap Up

All

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Fluid Simulation

Half-Day, Wednesday, 8 August, 1:45 pm - 5:30 pm

Level: Advanced

Animating fluids like water, smoke, and fire by physics-based simulation is increasingly important in visual effects and is starting to make an impact in real-time games. This course goes from the basics of 3D fluid flow to the state of the art in graphics. Topics include: the core concepts of fluid flow, a broad coverage of cutting-edge techniques, and details on implementing fluid simulators.

Prerequisites

Familiarity with differential equations at the graphics level, basic Newtonian physics, basic numerical methods. Attendees should know what a finite difference is and what F=ma means.

Intended Audience

Industrial developers who want to understand and implement state-of-the-art fluid simulators and researchers who are new to the field.

Organizer

Robert Bridson
University of British Columbia
Rbridson@cs.ubc.ca

Lecturer Matthias Müller-Fischer

AGEIA Inc.

Room 1 AB

Schedule

- 1:45 pm The Basics of Fluid Flow
 - Welcome and Overview
 - The Equations of Fluids
 - Advection Algorithms
 - Making Fluids
 - Incompressible
 - Advanced Boundary Conditions
 - Turning it Into Smoke
 - Turning it Into Liquid
 - Bridson

3:30 pm Break

3:45 pm Real-Time Fluids

- Reduced Dimension Models
- 3D Smoothed Particle
- Hydrodynamics **Müller-Fischer**

wuller-rische

4:45 pm Advanced Topics

- Coupling Fluids and Solids
- Advances in Surface Tracking

Bridson

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Interaction Tomorrow

Half-Day, Wednesday, 8 August, 1:45 - 5:30 pm

Level: Beginning

A comprehensive overview of user interface technologies on the newly emerging interactive tabletops and large wall displays. Topics include: input devices, interface metaphors, modality of interaction, sensing technologies, applications, and future directions. Examples are drawn from both commercial systems and research prototypes.

Prerequisites

Familiarity with the basics of traditional human-computer interaction, computer graphics, image processing, and interactive media. Prior knowledge of interactive environments is not necessary.

Intended Audience

Students, researchers, and industrial developers who are involved in or interested in gaining an understanding of design and implementation of interactive environments. Anyone who has a general interest in HCl, or in alternative interface design, tangible interfaces, gestural input, and interactive environments will find this course informative.

Room 4

Co-Organizers Michael Haller

Upper Austria University of Applied

Sciences

haller@fh-hagenberg.at

Chia Shen

Mitsubishi Electric Research Laboratories (MERL)

shen@merl.com

Lecturers Andy Wilson

Microsoft Research

Gerald Morrison

Smart Technologies Inc.

Bruce H. Thomas

University of Southern Australia

Schedule

1:45 pm Welcome and Introduction

Haller

2 pm Input Devices and Sensing

Technologies

Wilson

2:45 pm Interactive Tabletops:

User Interface Design, Metaphors and Gestures

Shen

3:30 pm Break

3:45 pm Interactive Wall Displays:

Interaction Techniques and Commercial Applications

Morrison

4:30 pm Pen-Based Interfaces:

Commercial Systems, New

Research Usage

5 pm What's Next? Outlook to the

Future

Thomas

5:30 pm Summary and Conclusions

Shen

Strands and Hair: Modeling, Animation, and Rendering

Full-Day, Wednesday, 8 August, 8:30 am - 5:30 pm

Level: Intermediate

The past six years has seen a Renaissance in hair modeling, rendering, and animation. This course covers the gamut of hair simulation problems and presents working solutions. Topics include recent and novel research ideas, and time-tested industrial practices that created spectacular imagery.

Prerequisites

Familiarity with fundamentals of computer graphics, physical simulation and physically based rendering is strongly recommended but not mandatory. Also recommended: understanding of numerical linear algebra, differential equations, numerical methods, rigid-body dynamics, collision detection and response, physicsbased illumination models, and fluid-dynamics.

Intended Audience

Special effects developers, technical directors, game developers, researchers, and anyone interested in physically based modeling for computer graphics.

Organizer Sunil Hadap

Adobe Systems Incorporated, formerly at PDI/DreamWorks

sunilhadap@acm.org

Lecturers Marie-Paul Cani

University of Grenoble & INRIA

Florence Bertails

University of British Columbia

Mina Lin

University of North Carolina at Chapel Hill

Kelly Ward

Walt Disney Animation Studios

Steve Marschner

Cornell University

Tae-Yong Kim

Rhythm & Hues Studios

Zoran Kacic-Alesic

Industrial Light + Magic

Room 7 AB

Schedule

Welcome 8:30 am

Hadap

8:35 am Virtual Hair: Motivations and

Challenges

Cani

8:55 am Oriented Strands - A

Versatile Dynamic Primitive

Hadap

9:35 am Super Helices - Dynamics of

Thin Geometry Bertails

10:15 am Break

10:30 am Coping With the Complexity

of Hair Interactions: Hair Density, Adaptive Wisp-Tree and Temporal Coherence

Cani

Multi-Resolution Hair-Gair 11 am

and Hair-Obstacle Interaction

Lin and Ward

12:15 pm Lunch

Hair Rendering 1:45 pm

Marchner and Kim

Hair and Strand Simulation 2:30 pm

at ILM Kacic-Alesic

3 pm Madagascar & Shrek The

Third - Strands and Foliage: Ears, Braid, Foliage and

Long Hair Hadap

3:30 pm Break

3:45 pm Chronicles of Narnia -

> Simulation of Lion Mane and Other Hair/Fur Techniques

Kim

4:30 pm Questions and Discussions

Location Rooms 6 AB, 6 CF, 6 DE, 6 ABCF

Days & Hours

Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August

8:30 am - 5:30 pm 8:30 am - 6 pm 8:30 am - 6 pm 8:30 am - 5:30 pm

Papers

The SIGGRAPH Papers program is the premier international forum for disseminating new scholarly work in computer graphics. This year the Papers Committee accepted 108 papers, a new record. These papers span the core areas of modeling, animation, rendering, and imaging, but they also touch on related areas such as visualization, computer vision, humancomputer interaction, and applications of computer graphics.

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Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

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Irfan Essa

Georgia Institute of Technology

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University of California, Berkeley

William T. Freeman

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

Tom Funkhouser

Princeton University

Craig Gotsman

Technion Center for Graphics and Geometric Computing

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Baining Guo

Microsoft Research Asia

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Sing Bing Kang

Microsoft Research

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Max-Planck-Institut für Informatik

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The Hebrew University of Jerusalem

Dinesh Manocha

University of North Carolina

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AGEIA Technologies

Fabrice Nevret EVASION/GRAVIR - INRIA ZIRST

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Trinity College Dublin

Mark Pauly

ETH Zürich

(*Area Coordinator)

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(*Area Coordinator)

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Francesca Regan Laurie Schall

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Mitsubishi Electric Research Laboratories (MERL)

Full Conference registration allows attendees access to all SIGGRAPH 2007 Papers. Seating is on a first-come, first-served basis. Please be sure to arrive early for the Papers Sessions you wish

Papers Discussants

New for SIGGRAPH 2007

To promote a lively exchange of ideas during the Papers program, we are introducing a system of per-paper discussants. Each paper in the program will be allotted 25 minutes, 20 minutes for presentation and five minutes for discussion of the paper, with the session chair serving as discussant.

Anyone may submit a question to the discussant for any session. These questions should be scholarly in nature, diplomatically phrased, and specific to one of the papers being presented in that session.

How do I submit a question?

At SIGGRAPH 2007:

The Program & Buyer's Guide and the Conference Locator will list a unique email address so that you can submit your questions electronically for each session. Also, as you walk into each paper session, there will be a box of index cards and pens at the door. Feel free to pick up a card, scribble a question (even during the talk), and hand it to a Student Volunteer, who will hand-deliver it to the discussant.

What will happen to my question after I submit it?

Emails sent to these addresses will be routed to the appropriate session chairs, who will check their email at least until the night before the session. Questions will not be shown to speakers beforehand.

Will my question remain anonymous?

In your questions, you may identify yourself or you may remain anonymous. (If you submit electronically, indicate whether you wish to be indentified or not.) In either case, don't forget to designate which of the papers in that session you are asking a question about.

8:30 - 10:15 am Room 6 AB & CF Session Chair/Discussant
Richard Szeliski, Microsoft Research

ImageAnalysis-Enhancement@siggraph.org

Image Analysis & Enhancement

Image Deblurring With Blurred/ Noisy Image Pairs

A novel method to deblur an image, with the help of another noisy image of the same scene. The paper also proposes new methods of de-ringing the deconvoluted image.

Lu Yuan

The Hong Kong University of Science and Technology

Jian Sun

Microsoft Research Asia

Long Quan

The Hong Kong University of Science and Technology

Heung-Yeung Shum

Microsoft Research Asia

Solid Texture Synthesis From 2D Exemplars

A novel method for synthesizing solid textures from 2D exemplars. In addition to producing compelling texture-mapped surfaces, this method models the material in the interior of solid objects.

Johannes Kopf

Universität Konstanz

Chi-Wing Fu

The Hong Kong University of Science and Technology

Daniel Cohen-Or

Tel Aviv University

Oliver Deussen

Universität Konstanz

Dani Lischinski

The Hebrew University

Tien-Tsin Wong

The Chinese University of Hong Kong

Photo Clip Art

An interactive system for inserting new objects into existing photographs using a vast image-based object library.

Jean-Francois Lalonde Derek Hoiem Alexei A. Efros Carnegie Mellon University

Carsten Rother John Winn Antonio Criminisi

Microsoft Research Cambridge

Scene Completion Using Millions of Photographs

A method for filling holes in images using semantically and structurally similar scenes from a large internet photo library.

James Hays Alexei A. Efros

Carnegie Mellon University

8:30 - 10:15 am Room 6 DE

Session Chair/Discussant

Michiel van de Panne, University of British Columbia

Character-Animation-I@siggraph.org

Character Animation I

Active Learning for Real-Time Motion Controllers

An active learning approach to real-time controllable motion. The approach builds the controller in an interactive capture session and optimizes for sample locations.

Seth Cooper

University of Washington

Aaron Hertzmann

University of Toronto

Zoran Popović

University of Washington

Responsive Characters From Motion Fragments

A data-driven animation controller designed for on-line, direct character-control applications that achieves good results by modeling user behavior.

James McCann Nancy Pollard Carnegie Mellon University Optimal Character Animation With Continuous User Control

A real-time character animation system that produces fluid, nearoptimal motion under continuously changing multidimensional user control.

Adrien Treuille Yongjoon Lee Zoran Popović University of Washington Constraint-Based Motion Optimization Using a Statistical Dynamic Model

A method for generating human animation from a variety of spatial-temporal constraints using a low-dimensional, statistical dynamical model (from motion capture data) as a motion prior in a trajectory optimization framework.

Jinxiang Chai Texas A&M University

Jessica K. HodginsCarnegie Mellon University

10:30 am – 12:15 pm Room 6 AB & CF Session Chair/Discussant
Aseem Agarwala, Adobe Systems Incorporated

Image-Slicing-Stretching@siggraph.org

Image Slicing & Stretching

Soft Scissors: An Interactive Tool for Real-Time High Quality Matting

An interactive tool for extracting high quality alpha mattes and creating high quality composites of foreground objects in real time.

Jue Wang

University of Washington

Maneesh Agrawala
University of California, Berkeley

Michael F. Cohen Microsoft Research Seam Carving for Content-Aware Image Resizing

Seam carving is a method for content-aware resizing that changes the size of an image according to its content. This paper shows applications to aspect-ratio change, image retargeting, and object removal.

Shai Avidan

Mitsubishi Electric Research Laboratories (MERL)

Ariel Shamir

The Interdisciplinary Center (IDC) and Mitsubishi Electric Research Laboratories (MERL)

Image Vectorization Using Optimized Gradient Meshes

A method to optimize gradient mesh for image vectorization.

Jian Sun Lin Liang Fang Wen Heung-Yeung Shum Microsoft Research Asia Detail Preserving Shape Deformation in Image Editing

When deforming an image, reshaping a textured portion will unrealistically stretch the texture. This paper resynthesizes texture and properly orients it to preserve texture detail in these regions.

Hui FangGoogle Inc.

John C. Hart

John C. Hart
University of Illinois at Urbana
Champaign

10:30 am – 12:15 pm Room 6 DE

Session Chair/Discussant
Carol O'Sullivan, Trinity College Dublin

Squish-Bounce-Collide@siggraph.org

Squish, Bounce, and Collide

Volume Conserving Finite Element Simulations of Deformable Models

A method for simulating incompressible deformable solids by preserving volume in one-ring around each node. The paper also presents a novel method for treating collision and contact constraints during Poisson solves.

Geoffrey Irving

Stanford University and Pixar Animation Studios

Craig Schroeder Stanford University

Ronald Fedkiw Stanford University and Industrial

Light & Magic

Many-Worlds Browsing for Control of Multibody Dynamics

A simple method for controlling rigid-body motion based on showing the user example motions and providing tools to browse and refine them interactively.

Christopher D. TwiggCarnegie Mellon University

Doug L. James Cornell University Continuous Collision Detection for Articulated Models Using Taylor Models and Temporal Culling

CATCH: Fast continuous collision detection (CCD) algorithm for articulated models using Taylor models and temporal culling. CATCH performs CCD at interactive rates for complex articulated models.

Xinyu Zhang Ewha Womans University

Stephane Redon

Minkyoung Lee Young J. Kim Ewha Womans University A Finite Element Method for Animating Large Viscoplastic Flow

A finite-element method for simulating materials such as shampoo, dough, and clay that exhibit a combination of elastic deformation and large viscoplastic flow.

Adam W. BargteilCarnegie Mellon University

Chris Wojtan
Georgia Institute of Technology

Jessica K. Hodgins Carnegie Mellon University

Greg TurkGeorgia Institute of Technology

3:45 – 5:30 pm Room 6 AB & CF Session Chair/Discussant

Doug DeCarlo, Rutgers University

ShapeDepiction-Stylization@siggraph.org

Shape Depiction and Stylization

Locally Controllable Stylized Shading

A set of simple stylized shading algorithms that allow the user to freely add localized light and shade in a manner that is consistent with conventional lighting techniques.

Hideki Todo

The University of Tokyo

Ken-ichi Anjyo William Baxter OLM Digital, Inc.

Takeo IgarashiThe University of Tokyo

Line Drawings Via Abstracted Shading

A new real-time method for producing computer-generated line drawings of 3D shapes.

Yunjin Lee Lee Markosian University of Michigan

Seungyong Lee POSTECH

John F. Hughes Brown University

Apparent Ridges for Line Drawing

Apparent Ridges are view-dependent versions of ridge and valley lines that encapsulate or enhance many previously defined feature lines.

Tilke Judd Frédo Durand

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

Edward H. Adelson

Massachusetts Institute of Technology, Department of Brain and Cognitive Sciences, and Computer Science and Artificial Intelligence Laboratory

Dynamic 2D Patterns for Shading 3D Scenes

A real-time method for rendering 3D scenes in halftone, hatching, and painterly styles based on dynamic image space stroke and halftone patterns.

Simon Breslav Karol Szerszen Lee Markosian University of Michigan

Pascal Barla Joelle Thollot INRIA Grenoble University

3:45 – 5:30 pm Room 6 DE Session Chair/Discussant Mark Pauly, ETH Zürich

Point-Sets@siggraph.org

Point Sets

Global Non-Rigid Alignment of 3D Scans

A new pipeline for non-rigid global registration of large, high-resolution 3D scanned data sets. This reduces visible misalignment artifacts such as tearing and blurring of detail.

Benedict J. Brown Szymon Rusinkiewicz Princeton University

Parameterization-Free Projection for Geometry Reconstruction

This paper introduces a locally optimal projection operator for surface reconstruction. The operator is parameterization-free, so it can deal with complex geometry and high noise level.

Yaron Lipman
Daniel Cohen-Or
David Levin
Tel Aviv University

Hillel Tal-Ezer Academic College of Tel-Aviv Yaffo

Algebraic Point Set Surfaces

An efficient and robust surface representation based on spherical fit that allows handling complex, low-sampled, point-based models. A normal evaluation procedure and sharp features are also included.

Gael Guennebaud Markus Gross ETH Zürich

Direct Visibility of Point Sets

This paper proposes a simple operator for determining the visible points in a point cloud, as viewed from a given viewpoint. Visibility is determined without reconstructing a surface or estimating normals.

Ayellet Tal Sagi Katz Technion

Ronen Basri

The Weizmann Institute of Science

8:30 - 10:15 am Room 6 AB

Session Chair/Discussant Steve Marschner, Cornell University

Lighting@siggraph.org

Lighting

The Lightspeed Automatic Interactive Lighting Preview System

A system for automatic interactive preview of RenderMan scenes during lighting design. Lightspeed automatically creates previews from unmodified input, supports final-quality motion-blur/transparency, and guarantees interactivity performance through progressive refinement.

Jonathan Ragan-Kelley

Massachusetts Institute of Technology

Charlie Kilpatrick **Brian Smith**

Industrial Light & Magic

Doug Epps

Tippett Studio

8:30 - 10:15 am Room 6 CF

Paul Green

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

Christophe Hery

Industrial Light & Magic

Frédo Durand

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

Matrix Row-Column Sampling for the Many-Light Problem

An approach to the many-light problem that samples rows and columns of the lighting matrix on the GPU. By exploiting the inherent structure of the matrix, this approach produces fast, highquality approximations.

Session Chair/Discussant Takeo Igarashi, The University of Tokyo

Milos Hasan

Cornell University

Fabio Pellacini Dartmouth College

Kavita Bala

Cornell University

Interactive Relighting With Dynamic BRDFs

A novel technique for interactive relighting in which lighting, viewing direction, and BRDFs can all be changed on the fly.

Xin Sun

Zhejiang University

Kun Zhou Yanyun Chen Steve Lin

Microsoft Research Asia

Jiaoving Shi

Zhejiang University

Baining Guo

Microsoft Research Asia

Frequency Domain Normal Map Filtering

A method of filtering normal maps that convolves the BRDF with the normal distribution function (NDF). The NDF can be represented in spherical harmonics or by using a new spherical vMF representation.

Charles Han Bo Sun Ravi Ramamoorthi Eitan Grinspun Columbia University

Illustration-Sculpture@siggraph.org

Illustration & Sculpture

Image-Guided Maze Construction

This system for designing mazes based on images can draw a wide variety of attractive mazes, with style and layout under control of a human designer.

Jie Xu Craig S. Kaplan University of Waterloo

Dynamic Planar Map Illustration

Live Paint allows editing of colored planar vector illustrations, maintaining the integrity of the original paths that define the geometry. Previous methods divided paths at intersections, decreasing editability.

Paul Asente Mike Schuster Teri Pettit

Adobe Systems Incorporated

Interactive Cutaway Illustrations of Complex 3D Models

A system for authoring and viewing interactive cutaway illustrations of complex 3D models using conventions of traditional scientific and technical illustration.

Wilmot Li Lincoln Ritter University of Washington

Maneesh Agrawala

University of California, Berkeley

Brian Curless David Salesin University of Washington

Digital Bas-Relief From 3D Scenes

Generation of bas-relief sculptures from 3D scenes.

Tim Weyrich Jia Deng **Connelly Barnes** Szymon Rusinkiewicz Adam Finkelstein Princeton University

10:30 am - 12:15 pm

Session Chair/Discussant James Davis, University of California, Santa Cruz

Performance-Capture@siggraph.org

Room 6 AB

Performance Capture

Multi-Scale Capture of Facial Geometry and Motion

A novel multi-scale representation and acquisition method for animation of high-resolution facial geometry and wrinkles. The model consists of high-resolution geometry, motion capture data, and expression wrinkles.

Bernd Bickel Mario Botsch **Roland Angst**

ETH Zürich

Wojciech Matusik

Mitsubishi Electric Research Laboratories (MERL)

Miquel Otaduy

ETH Zürich

Hanspeter Pfister

Mitsubishi Electric Research Laboratories (MERL)

Markus Gross

FTH Zürich

Capturing and Animating Occluded Cloth

Geometry capture of dynamic cloth garments with folding and occlusion using cloth printed with a color coded pattern.

Rvan White

University of California, Berkeley and University of Illinois at Urbana-Champaign

KM Crane DA Forsyth

University of Illinois at Urbana-Champaign

Practical Motion Capture in Everyday Surroundings

This system relies on ultrasonic time-of-flight measurements, linear accelerations, and angular velocities to compute joint configurations of a human body in almost any setting and for extended periods of time.

Daniel Vlasic

Massachusetts Institute of Technology

Rolf Adelsberger

Mitsubishi Electric Research Laboratories and ETH Zürich

Giovanni Vannucci John Barnwell

Mitsubishi Electric Research Laboratories (MERL)

Markus Gross

ETH Zürich

Woiciech Matusik

Mitsubishi Electric Research Laboratories (MERL)

Jovan Popović

Massachusetts Institute of Technology

Prakash: Lighting-Aware Motion Capture Using Photosensing Markers and Multiplexed Illuminators

A high-speed optical motion capture system also measures orientation and incident illumination via photosensing tags. Imperceptible tags work in natural lighting, to support on-set mocap or real-time broadcast of virtual sets.

Ramesh Raskar

Hideaki Nii

Mitsubishi Electric Research Laboratories (MERL)

Bert de Decker

Universiteit Hasselt

Yuki Hashimoto **Jay Summet Dylan Moore**

Yong Zhao Jonathan Westhues **Paul Dietz**

Mitsubishi Electric Research Laboratories (MERL)

Masahiko Inami

University of Electrocommunications, Japan

Shree Nayar

Columbia University

John Barnwell

Michael Noland

Mitsubishi Electric Research Laboratories (MERL)

Philippe Bekaert

University of Hasselt

Vlad Branzoi

Erich Bruns

Mitsubishi Electric Research Laboratories (MERL)

10:30 am - 12:15 pm

Room 6 CF

Session Chair/Discussant Sing Bing Kang, Microsoft Research

LightField-HDR-Imaging@siggraph.org

Light Field & High-Dynamic-Range Imaging

Veiling Glare in High-Dynamic-Range Imaging

Veiling glare limits the dynamic range that can be captured by high-dynamic-range imaging techniques. This method removes glare using a high-frequency mask to reduce noise and increase dynamic range.

Eino-Ville Talvala **Andrew Adams** Mark Horowitz Marc Levoy Stanford University Do HDR Displays Support LDR Content? A Psychophysical Evaluation

A set of psychophysical experiments compared high-dynamicrange, tone-mapping, and conventional imaging pipelines, and set guidelines to optimally display eight-bit legacy imagery on HDR display systems.

Ahmet Oguz Akvuz

Frik Reinhard University of Bristol

Bernhard E. Riecke Heinrich H. Bulthoff

University of Central Florida

Roland Fleming

Max-Planck-Institut für biologische Kybernetik

Session Chair/Discussant Tom Funkhouser, Princeton University Ldr2Hdr: On-the-Fly Reverse Tone Mapping of Legacy Video and Photographs

A method for on-the-fly boosting of the dynamic range of legacy video for viewing on high-dynamicrange displays.

Allan G. Rempel **Matthew Trentacoste** The University of British Columbia

Helge Seetzen The University of British Columbia and Brightside Technologies

H. David Young Wolfgang Heidrich Lorne Whitehead The University of British Columbia

Greg Ward Brightside Technologies Rendering for an Interactive 360-Degree Light Field Display

An autostereoscopic light field display using commodity graphics and projector hardware. It displays interactive 3D graphics or photographic 3D images with correct horizontal perspective and tracked vertical parallax.

Andrew Jones

USC Institute for Creative Technologies

Ian McDowall

Fakespace Labs

Hideshi Yamada Sony Corporation

Mark Bolas

USC School of Cinematic Arts

Paul Debevec USC Institute for Creative Technologies

Sketching-3DShapes@siggraph.org

Sketching 3D Shapes

FiberMesh: Designing Freeform Surfaces With 3D Curves

An interface for designing freeform surfaces using a collection of hand drawn 3D curves, which serve as handles for controlling the geometry.

Andrew Nealen

3:45 - 6 pm

Room 6 AB

Technische Universität Berlin

Takeo Igarashi

The University of Tokyo / PRESTO JST

Olga Sorkine Marc Alexa

Technische Universität Berlin

Editing The Topology of 3D Models by Sketching

A user-guided method for repairing and editing the topology of a 3D model.

Washington University in St. Louis

Qian-Yi Zhou Shi-Min Hu

Tsinghua University, China

Interactive Topology-Aware Surface Reconstruction

A topology-aware, interactive reconstruction technique that requires minimal user-input to make correct decisions at topology-weak regions. When the technique was applied to structured light scanned-models it reconstructed them with few scribbles.

Andrei Sharf

Tel Aviv University

Thomas Lewiner

Pontifícia Universidade Católica do Rio de Janeiro

Gil Shklarski Sivan Toledo **Daniel Cohen-Or** Tel Aviv University

ShapePalettes: Interactive Normal Transfer Via Sketching

A new markup metaphor for interactive modeling of complex 3D objects.

Tai-Pang Wu, Chi-Keung Tang The Hong Kong University of Science and Technology

Michael S. Brown

Nanyang Technological University

Heuna-Yeuna Shum Microsoft Research Asia

Plushie: An Interactive Design System for Plush Toys

An interactive system that allows non-professional users to design their own original plush toys.

Yuki Mori Takeo Igarashi The University of Tokyo

3:45 – 6 pm Room 6 CF Session Chair/Discussant
Irfan Essa, Georgia Institute of Technology

Physical-Simulation@siggraph.org

Physical Simulation

Curl Noise for Procedural Fluid Flow

A simple noise-based approach to procedurally modeling turbulent fluid flow that can handle arbitrary solid boundaries and more.

Robert Bridson

The University of British Columbia

Jim Hourihan

Tweak Films

Markus Nordenstam

Double Negative

Wrinkled Flames and Cellular Patterns

Using asymptotic detonationshock-dynamics to obtain fire and flames with characteristic cellular patterns, which provides better velocities for the level set in a coupled Navier-Stokes fire simulator.

Jeong-Mo Hong Tamar Shinar Ron Fedkiw Stanford University Adaptively Sampled Particle Fluids

An adaptive sampling algorithm based on an extended local feature size and a distance based surface definition for particle fluids.

Bart Adams

Stanford University and Katholieke Universiteit Leuven

Mark Pauly Richard Keiser ETH Zürich

Leonidas J. GuibasStanford University

Efficient Simulation of Inextensible Cloth

A method that efficiently obtains very low strain along the warp and weft using constrained Lagrangian dynamics. It can be easily integrated into existing cloth simulators.

Rony Goldenthal

The Hebrew University of Jerusalem and Columbia University

David Harmon

Columbia University

Raanan Fattal

University of California, Berkeley

Michel Bercovier

The Hebrew University of Jerusalem

Eitan Grinspun

Columbia University

TRACKS: Toward Directable Thin Shells

Tracking begins with a rough animation already set by the artist and uses physical simulation to add fine-scale details without deviating from the artist's intentions.

Miklós Bergou Saurabh Mathur

Columbia University

Max Wardetzky Freie Universität Berlin

Eitan Grinspun Columbia University

8:30 - 10:15 am Room 6 AB

Session Chair/Discussant

Hendrik Lensch, Max-Planck-Institut für Informatik

AppearanceCapture-Editing@siggraph.org

Appearance Capture & Editing

Multiscale Shape and Detail Enhancement From Multi-Light Image Collections

A new method to enhance detail and surface shading using a few images with different lighting. Our approach uses a new fast multiscale bilateral image decomposition.

Raanan Fattal Maneesh Agrawala

University of California, Berkeley

Szymon Rusinkiewicz

Princeton University

Post-Production Facial Performance Relighting Using Reflectance Transfer

Facial performance video relighting using quotient images and optical flow to transfer reflectance from a static reflectance field to the performance, showing both samesubject and cross-subject cases.

Pieter Peers

USC Institute for Creative Technologies

Naoki Tamura

The University of Tokyo and Mitsubishi Electric Research Laboratories (MERL)

Wojciech Matusik

Mitsubishi Electric Research Laboratories (MERL)

Paul Debevec

USC Institute for Creative Technologies

Interactive Editing and Modeling of Bidirectional **Texture Functions**

A new approach for interactively manipulating and creating bidirectional texture functions.

Jan Kautz

University College London

Solomon Boulos

University of Utah

Frédo Durand

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

AppWand: Editing Measured Materials Using Appearance-Driven Optimization

A stroke-based approach to editing spatially and time-varying measured reflectance that smoothly propagates user-supplied editing constraints using an appearancedriven optimization.

Fabio Pellacini Dartmouth College

Jason Lawrence University of Virginia

8:30 - 10:15 am Room 6 CF

Session Chair/Discussant Pierre Alliez, INRIA Sophia-Antipolis, Geometrica

Geometry-Processing-I@siggraph.org

Geometry Processing I

Rotational Symmetry Field Design on Surfaces

A framework for analysis and interactive design of rotational symmetry fields on surfaces, with applications in pen-and-ink sketching and geometry remeshing.

Eugene Zhang Jonathan Palacios Oregon State University Design of Tangent Vector Fields

Interactive design of smooth vector fields on surfaces using a sparse linear system formulation, which is amazingly fast.

Matthew Fisher Peter Schröder Mathieu Desbrun California Institute of Technology

Hugues Hoppe Microsoft Research Isosurface Stuffing: Fast Tetrahedral Meshes With Good Dihedral Angles

Tetrahedral mesh generation with strong guaranteed bounds on the dihedral angles at interactive speeds.

François Labelle Jonathan Richard Shewchuk University of California, Berkeley Robust On-line Computation of Reeb Graphs: Simplicity and Speed

A robust Reeb graph computation algorithm handling non-manifold, degenerate meshes of any dimension. The method uses little memory to process large models efficiently (374Mtriangle StMathew: 8.1 minutes, 67Mb of memory).

Valerio Pascucci Peer-Timo Bremer Ajith Mascarenhas Giorgio Scorzelli Lawrence Livermore National Laboratory

10:30 am - 12:15 pm Room 6 AB Session Chair/Discussant Kavita Bala, Cornell University

Light-Transport@siggraph.org

Light Transport

Eikonal Rendering: Efficient Light Transport in Refractive Objects

A new method for real-time rendering of sophisticated lighting effects in and around refractive objects. The method enables us to realistically display refractive objects with complex material properties.

Ivo Ihrke Gernot Ziegler Art Tevs

Christian Theobalt

Max-Planck-Institut für Informatik

Marcus Magnor

Technische Universität Braunschweig

Hans-Peter Seidel

Max-Planck-Institut für Informatik

Computing the Scattering Properties of Participating Media Using Lorenz-Mie Theory

This paper introduces a generalization of the Lorenz-Mie theory for computing the scattering properties of participating media and translucent materials given a description of the basic composition of the material.

Jeppe Revall Frisvad Niels Jorgen Christensen

Danmarks Tekniske Universitet

Henrik Wann JensenUniversity of California, San Diego

Implicit Visibility and Antiradiance for Interactive Global Illumination

A reformulated rendering equation that allows interactive global illumination computation using implicit visibility. This method shifts visibility to local iterations and stores directional "antiradiance" information, allowing an efficient GPU implementation.

Carsten Dachsbacher

REVES/INRIA Sophia-Antipolis

Marc Stamminger
Universität Erlangen-Nürnberg

George Drettakis

REVES/INRIA Sophia-Antipolis

Frédo Durand

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory A Theory of Locally Low Dimensional Light Transport

A theory of how the dimensionality of local light transport varies with patch area. This paper analyzes how rendering cost varies with patch size, deriving an optimal block size.

Dhruv Mahajan Columbia University

Ira Kemelmacher ShlizermanWeizmann Institute of Science

Ravi Ramamoorthi Peter Belhumeur Columbia University

10:30 am – 12:15 pm Room 6 CF Session Chair/Discussant
Nina Amenta, University of California, Davis

Geometry-Processing-II@siggraph.org

Geometry Processing II

Symmetrization

A symmetrization algorithm for geometric objects that enhances approximate symmetries of a model while minimally altering its shape. The algorithm successfully symmetrizes complex 2D and 3D shapes.

Niloy Mitra

Technische Universität Wien

Leonidas Guibas

Stanford University

Mark Pauly ETH Zürich

Geometric Modeling in Shape Space

This paper introduces a Riemannian space of shape and presents algorithms to geodesically interpolate and extrapolate shapes. More specific applications include shape exploration, isometric shape modeling, shape morphing, and deformation transfer.

Martin Kilian Niloy Mitra Helmut Pottmann

Technische Universität Wien

Geometry of Multilayer Freeform Structures for Architecture

Solutions for several fundamental geometric problems in the architectural design of freeform structures by optimization procedures based on a theory of parallel meshes, offset meshes, and discrete curvatures.

Helmut Pottmann Yang Liu

Technische Universität Wien

Johannes Wallner

Technische Universität Graz

Alexander Bobenko

Technische Universität Berlin

Wenping Wang

University of Hong Kong

A Variational Approach to Eulerian Geometry Processing

A density-based Eulerian framework for geometry processing of foliations. This paper demonstrates applications varying from variational surface processing, to volumetric medical data smoothing, and mass-preserving fluid simulation.

Patrick Mullen Alexander McKenzie Yiying Tong Mathieu Desbrun

California Institute of Technology

1:45 - 3:30 pm Room 6 AB

Session Chair/Discussant Marc Levov. Stanford University

Computational-Cameras@siggraph.org

Computational Cameras

Active Refocusing of Images and Videos

A system for refocusing images and videos of dynamic scenes using a single-view depth estimation method. This method is based on the defocus of a sparse set of projected dots.

Francesc Moreno-Noguer

CVLAB, Ecole Polytechnique Fédérale de Lausanne

Peter N. Belhumeur Shree K. Navar Columbia University

Multi-Aperture Photography

This paper describes a camera that simultaneously captures multiple images of a scene taken with different aperture settings and demonstrates algorithms for extrapolating depth-of-field, synthetic refocusing, and other editing.

Paul Green

Massachusetts Institute of Technology

Wenyang Sun Wojciech Matusik

Mitsubishi Electric Research Laboratories (MERL)

Frédo Durand

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

Dappled Photography: Mask-Enhanced Cameras for Heterodyned Light Fields and Coded Aperture Refocusing

This method exploits Fourierdomain remapping of 4D rayspace to capture 4D light field on a 2D sensor in a conventional camera using a transmissive mask. No lens array is used.

Ashok Veeraraghavan Ramesh Raskar **Amit Agrawal** Ankit Mohan Mitsubishi Electric Research

Laboratories (MERL) Jack Tumblin

Northwestern University

Image and Depth From a Conventional Camera With a Coded Aperture

A simple modification to a conventional camera that allows for simultaneous recovery of both high-resolution image information and depth information from a single image.

Anat Levin **Rob Fergus** Frédo Durand William T. Freeman

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

1:45 - 3:30 pm

Room 6 CF

Session Chair/Discussant Doug L. James, Cornell University

Articulation@siggraph.org

Articulation

Harmonic Coordinates for Character Articulation

This paper investigates the use of Laplace's equation to create deformations for use in high-end character articulation systems.

Pushkar Joshi

University of California, Berkeley and Pixar Animation Studios

Mark Mever Tony DeRose **Brian Green** Tom Sanocki

Pixar Animation Studios

Automatic Rigging and Animation of 3D Characters

A method for automatically rigging a 3D character for skeletal animation. Our prototype, called Pinocchio, can animate a given character mesh in under a minute.

Ilya Baran Jovan Popović Massachusetts Institute of Technology Real-Time Enveloping With Rotational Regression

A fast and accurate examplebased enveloping technique that can run on graphics hardware. Our technique seeks to be a replacement for linear blend skinning.

Robert Y. Wang Massachusetts Institute of Technology

Kari Pulli

Massachusetts Institute of Technology and Nokia Research Center

Jovan Popović Massachusetts Institute of Technology

Key Point Subspace Acceleration and Soft Caching

A statistical acceleration scheme that uses examples to compute a statistical subspace and a set of characteristic key points. Applications include articulation and rendering.

Mark Mever John Anderson Pixar Animation Studios

3:45 – 6 pm Room 6 AB Session Chair/Discussant Erik Reinhard, University of Bristol

Perception-Color@siggraph.org

Perception & Color

Color Images Visible Under UV Light

Fluorescent inks allow us to create color images visible only under UV light. This paper proposes spectral prediction, gamut mapping and juxtaposed half-toning methods specifically adapted to fluorescent ink halftones.

Roger D. Hersch Philipp Donzé Sylvain Chosson Ecole Polytechnique Fédérale de

Lausanne

Visual Equivalence: Towards a New Standard for Image Fidelity

Visual equivalence occurs when noticeably different images convey the same scene appearance to an observer. This paper analyzes this phenomenon for illumination transformations and proposes a metric for novel rendering optimizations.

Ganesh Ramanarayanan James Ferwerda Bruce Walter Kavita Bala Cornell University The Influence of Shape on the Perception of Material Reflectance

The shape of an object has a significant influence on the perception of its material. 3D modeling applications should offer material visualization and editing directly on the target object.

Peter Vangorp Jurgen Laurijssen Philip Dutré Katholieke Universiteit Leuven

Session Chair/Discussant
Fabio Pellacini, Dartmouth College

Sampling@siggraph.org

Sampling

Sampling With Polyominoes

A new general-purpose method for fast hierarchical importance sampling with blue-noise properties. The approach is based on self-similar tiling of the plane with rectifiable polyominoes.

Victor Ostromoukhov Université de Montréal Stochastic Simplification for Aggregate Detail

Complex scenes are simplified by randomly selecting a subset of the elements and altering them statistically to preserve overall appearance.

Rob Cook John Halstead Maxwell Planck David Ryu Pixar Animation Studios

3:45 - 6 pm Room 6 CF

Session Chair/Discussant Helmut Pottmann, Technische Universität Wien

Shape-Deformation@siggraph.org

Shape Deformation

Embedded Deformation for Shape Manipulation

An algorithm for natural deformations of a wide range of shape representations and editing scenarios, including traditional meshes, polygon soups, mesh animations, and animated particle systems.

Robert W. Sumner Johannes Schmid Mark Pauly ETH Zürich

Mesh Puppetry: Cascading Optimization of Mesh Deformation With Inverse Kinematics

A variational framework for detailpreserving mesh manipulation through a set of high-level, intuitive, and interactive design tools.

Xiaohan Shi Zhejiang University

Kun Zhou Microsoft Research Asia

Yiying Tong Mathieu Desbrun California Institute of Technology

Hujun Bao **Baining Guo** Microsoft Research Asia FastLSM: Fast Lattice Shape Matching for Robust Real-Time Deformation

An extremely simple technique that enables robust approximation of detailed, volumetric, large-deformation dynamics for real-time applications. This paper presents a linear-time fast-summation algorithm that exploits redundancy in shape-matching summations.

Alec R. Rivers Doug L. James Cornell University

Handle-Aware Isolines for Scalable Shape Editing

An introduction to handle-aware rigidity, and an isoline-based reduced model that respects rigidity and geometry for deformation applications, achieving resolutionindependent per-iteration cost and fast convergence.

Oscar Kin-Chung Au Hongbo Fu Chiew-Lan Tai The Hong Kong University of Science and Technology

Daniel Cohen-Or Tel Aviv University

Gradient Domain Editing of Deforming Mesh Sequences

A gradient domain editing framework for mesh animations.

Weiwei Xu Kun Zhou Microsoft Research Asia

Yizhou Yu University of Illinois at Urbana-Champaign

Qifeng Tan **Qunsheng Peng Baining Guo** Microsoft Research Asia

8:30 – 10:15 am Room 6 AB Session Chair/Discussant
Hanspeter Pfister, Mitsubishi Electric Research Laboratories (MERL)

Image-Based-Modeling@siggraph.org

Image-Based Modeling

Image-Based Procedural Modeling of Facades

Automatic derivation of 3D models of high visual quality from single façade images of arbitrary resolution. The method has applications in urban reconstruction and digital set creation.

Pascal Mueller Gang Zeng ETH Zürich

LIIIZUIICII

Peter Wonka Arizona State University

Luc Van Gool

ETH Zürich and Katholieke Universiteit Leuven VideoTrace: Rapid Interactive Scene Modeling From Video

VideoSketch is a system for interactively generating realistic 3D models of objects by sketching the shape to be modelled over one or more frames of video.

Anton van den Hengel Anthony Dick Thorsten Thormaehlen Ben Ward

University of Adelaide, Australia

Philip H. S. Torr Oxford Brookes University Image-Based Tree Modeling

An approach for generating 3D models of natural-looking trees from images that has the additional benefit of requiring little user intervention.

Ping Tan
The Hong Kong University of S

The Hong Kong University of Science and Technology

Gang Zeng Jingdong Wang

The Hong Kong University of Science and Technology

Sing Bing Kang Microsoft Research

Long Quan
The Hong Kong University of Science and Technology

Approximate Image-Based Tree-Modeling Using Particle Flows

A new method for creating an approximate but convincing 3D tree model from a single photograph or a set of photographs of an existing tree.

Boris Neubert Thomas Franken Oliver Deussen Universität Konstanz

8:30 - 10:15 am Room 6 CF Session Chair/Discussant Greg Humphreys, University of Virginia

Graphics-Architecture@siggraph.org

Graphics Architecture

Fast Triangle Reordering for Vertex Locality and Reduced Overdraw

Extremely efficient, novel algorithms that reorder triangles for post-transform vertex cache efficiency, view-independent overdraw reduction, suitable for use in run-time.

Pedro Sander

The Hong Kong University of Science and Technology

Diego Nehab

Princeton University

Joshua Barczak

Advanced Micro Devices, Inc.

A Hardware Architecture for Surface Splatting

This architecture for hardwareaccelerated rendering of point primitives implements a refined version of EWA splatting and allows for integration into conventional graphics pipelines to complement triangle-based rendering.

Tim Weyrich

ETH Zürich and Princeton University

Simon Heinzle

ETH Zürich

Timo Aila

Helsinki University of Technology and NVIDIA Research

Stephan Oetiker, Mario Botsch, Daniel Fasnacht, Cyril Flaig, Simon Mall, Kaspar Rohrer, Norbert Felber, Hubert Kaeslin, Markus Gross ETH Zürich Direct Manipulation of Subdivision Surfaces on GPUs

An algorithm for real-time deformation of subdivision surfaces, including displaced subdivision surfaces and subdivision surfaces with geometric textures.

Kun Zhou Xin Huang Weiwei Xu Baining Guo Heung-Yeung Shum Microsoft Research Asia PCU: The Programmable Culling Unit

The programmable culling unit, which is as flexible as the fragment program unit and capable of rapidly culling entire blocks of fragments.

Jon Hasselgren Tomas Akenine-Möller Lund University

10:30 am - 12:15 pm

Room 6 AB

Session Chair/Discussant

Ramesh Raskar, Mitsubishi Electric Research Laboratories (MERL)

Big-Images@siggraph.org

Big Images

Capturing and Viewing Gigapixel Images

A novel system to capture and view very high resolution, high dynamic range, wide angle imagery ("gigapixel images") of several billion pixels each.

Johannes Kopf

Universität Konstanz

Matt Uyttendaele

Microsoft Research

Oliver Deussen

Universität Konstanz

Michael F. Cohen Microsoft Research Efficient Gradient-Domain Compositing Using Quadtrees

A dramatic improvement in the efficiency of gradient-domain compositing, a widely-used algorithm in computational photography, by using quadtrees to build a greatly reduced linear system that well approximates the full solution.

Aseem Agarwala

Adobe Systems Incorporated

Image Upsampling Via Imposed Edge Statistics

A new method for upsampling images that preserves the sharpness of the edges and does not introduce halo artifacts by exploiting statistical relations between edges at different resolutions.

Raanan Fattal

University of California, Berkeley

Joint Bilateral Upsampling

The joint bilateral upsampling procedure can be used to upsample solutions run on downsampled input images for applications like tone mapping, colorization, stereo depth, and photomontage.

Johannes Konf

Universität Konstanz

Michael F. Cohen

Microsoft Research

Dani Lischinski The Hebrew University

Matt Uyttendaele

Microsoft Research Redmond

10:30 am - 12:15 pm

Room 6 CF

Session Chair/Discussant Markus Gross, ETH Zürich

Fluids@siggraph.org

Fluids

Bubbling and Frothing Liquids

A method to generate bubbles from gas contained in liquids and simulate their dynamic behavior using a particle-based fluid simulation technique has been presented.

Paul Cleary

Commonwealth Scientific and Industrial Research Organization

Soon Hyoung Pyo

Electronics and Telecommunications Research Institute

Mahesh Prakash

Commonwealth Scientific and Industrial Research Organization

Bon Ki Koo

Electronics and Telecommunications Research Institute

Simulation of Bubbles in Foam With Volume Control

Volumes of fluid regions in simulated bubbles are controlled by this proposed volume-control method, which applies carefully computed divergences to compensate for the volume error.

ByungMoon Kim Yingjie Liu

Georgia Institute of Techonology

Ignacio Llamas

NVIDIA Corporation

Xiangmin Jiao Jarek Rossignac

Georgia Institute of Technology

Wave Particles

A new method for real-time unconditionally stable simulation of fluid surface waves and their two-way interactions with floating objects of arbitrary shape.

Cem Yuksel Donald H. House John C. Keyser Texas A&M University A Fast Variational Framework for Accurate Solid-Fluid Coupling

A simple new simulation approach to animating fluid coupled with arbitrary solids, providing significantly faster simulation, sub-grid resolution, and a novel wall-separation boundary condition.

Christopher Batty Florence Bertails **Robert Bridson**

The University of British Columbia

3:45 - 5:30 pm

Room 6 AB

Session Chair/Discussant

Maneesh Agrawala, University of California, Berkeley

Video-Processing@siggraph.org

Video Processing

Factored Time-Lapse Video

A compact representation that separates time-lapse video into illumination, reflectance and shadow components, enabling applications including pseudo-normal estimation, compression, and intuitive video editing.

Kalyan Sunkavalli Wojciech Matusik Hanspeter Pfister

Mitsubishi Electric Research Laboratories (MERL)

Szymon Rusinkiewicz

Princeton University

Computational Time-Lapse Video

Techniques for generation of novel time-lapse videos that address the inherent sampling issues of traditional photographic time-lapse capture with the use of non-uniform sampling and non-linear filtering.

Eric P. Bennett Leonard McMillan

University of North Carolina at Chapel Hill

Real-Time Edge-Aware Image Processing With the Bilateral Grid

A new data structure, the bilateral grid, that enables real-time edgeaware image processing on highdefinition video.

Jiawen Chen Sylvain Paris Frédo Durand

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Laboratory

Video Watercolorization Using Bidirectional Texture Advection

A method for creating watercolor animation from video. The primary contributions are extensions of previous methods, including texturing (using advection) and abstraction (using mathematical morphology), for temporal coherence.

Adrien Bousseau

INRIA. Grenoble University and Adobe Systems Incorporated

Fabrice Nevret

LJK/IMAG-INRIA

Joelle Thollot

INRIA, Grenoble University

David Salesin

Adobe Systems Incorporated and University of Washington

3:45 - 5:30 pm

Room 6 CF

Session Chair/Discussant Okan Arikan, University of Texas at Austin

Character-Animation-II@siggraph.org

Character Animation II

SIMBICON: Simple Biped Locomotion Control

Controllers for physics-based simulation of bipedal gaits, including multiple styles of walking, running, and skipping. The controllers can mimic motion capture data, enabling dynamic interaction with captured motions.

Kangkang Yin Kevin Loken

Michiel van de Panne

The University of British Columbia

Construction and Optimal Search of Interpolated Motion Graphs

A method that uses discrete optimization to find a globally optimal motion that matches the user's specification in a motion graph constructed to support interpolation and pruned for efficient search.

Alla Safonova Jessica K. Hodgins

Carnegie Mellon University

Simulating Biped Behaviors From Human Motion Data

Planar articulated characters that are dynamically-simulated in real time, equipped with an integrated repertoire of motor skills learned from motion capture data, and controlled interactively to perform desired motions.

Kwang Won Sok Manmyung Kim Jehee Lee

Seoul National University

Efficient Symbolic Differentiation for **Graphics Applications**

D* is a simple, functional, symbolic language embedded in C# that allows for computation of very efficient symbolic derivatives.

Brian K. Guenter

Microsoft Corporation

Location
Room 1 AB, 6 DE, 9

Days & Hours
Tuesday, 7 August
Wednesday, 8 August

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

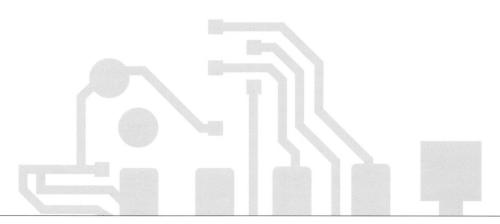
Panels

Debate, discussion, dissemination on the big topics in computer graphics and beyond: humanoid robots, worldwide intellectual property protection, brain/machine interfaces, virtual humans, the Uncanny Valley, and 22nd-century entertainment. Panelists present their positions, exchange opinions, and answer audience questions.

Panelist position papers are presented in the Full Conference DVD-ROM. Full Conference and Conference Select seating is on a first-come, first-served basis. Please be sure to arrive early for Panel sessions you wish to attend.

Jessica K. Hodgins SIGGRAPH 2007 Panels Co-Chair Carnegie Mellon University

Jerome Solomon SIGGRAPH 2007 Panels Co-Chair Industrial Light & Magic



10:30 am - 12:15 pm Room 1AB

The Uncanny Valley of Eeriness

In 1970, an eminent Japanese roboticist, Masahiro Mori, proposed the "uncanny valley" curve to describe the emotional response of humans to nonhuman agents. At the core of his proposal is the idea that as an agent is made more humanlike, the observer's familiarity does not linearly increase as one would intuit, but falls into a "valley of eeriness," when the agent closely yet imperfectly impersonates a human being. Although Mori used the uncanny valley to describe robots, the hypothesis has been revived to describe emotional responses to computer-animated agents in movies and videogames.

With computer hardware and software allowing increasingly elaborate rendering of forms and motion, the uncanny valley is becoming a highstakes concern of the entertainment industry: Is it an insurmountable boundary that one should avoid at all costs, or an outdated idea stemming from the technical limitations of more than 35 years ago? This panel presents different perspectives on the uncanny valley by combining an industrial perspective on the issues at stake (Joe Letteri), neuro-scientific investigations (Thierry Chaminade), and the views of developers of android robots (Karl MacDorman) and computer-animated avatars (Jessica Hodgins).

Panelists

Thierry Chaminade

University College London

Jessica K. Hodgins

Carnegie Mellon University

Joe Letteri

Weta Digital

Karl F. MacDorman

Indiana University

10:30 am - 12:15 pm

Room 9

IP & Patents for Art, Technology, and Entertainment

Right now art and entertainment are challenging the frontiers of patent and IP law in unexpected and, to some, alarming ways. Changes that are in motion today will no doubt affect you in the months and years to come. This panel presents a lively overview and discussion of the patent process, pitfalls, opportunities, and exploitation in the art and technology sectors. The discussion will help you understand the many ways to protect your content and discuss how others are protecting theirs.

Panelists

Robert P. Cogan

Nath Law Group

Andy Luckey

Greater Family, LLC

Greg Aharonian

Internet Patent News Service

▶ RELATED PROGRAM

IP Marketplace, a listing service for intellectual property (if there is sufficient interest). See page 5.

Wednesday, 8 August

10:30 am - 12:15 pm

Room 6DF

The Potential of End-User-Programmable Worlds: Present and Future

In Vernor Vinge's 1981 science fiction classic True Names, a global multi-user virtual world underlies the functioning of government and business. Some control this world in a literalminded, filing-cabinet fashion, and others with more colorful metaphors. Either style of interaction is a form of end-user programming. The power of cyberspace lies in the creativity and programming talent of its inhabitants.

Has that day arrived? Some view end-userprogrammable virtual worlds like Linden Labs' Second Life as a meaningful step in that direction. In fact, end-user-programmable worlds had their start in text-based virtual worlds: MUDs (1979) and MOOs (1990). Are these systems just a different style of multi-player game, or is something happening with broader implications? Will commerce embrace these worlds? What about education? Is the future "cyberspace" a world built in computer graphics, or is it more likely a proliferation of networked devices in real space? In this panel discussion, we consider the present and the future of end-user-programmable graphical worlds.

Organizers

Jessica K. Hodgins

Carnegie Mellon University

Amy Bruckman

Georgia Institute of Technology

Panelists

Paul Hemp

Harvard Business Review

Corv Ondreika

Linden Labs

Vernor Vinge

San Diego State University

Location

Room 1 AB, 3, 4, 6 DE, 9, 11 AB

Days & Hours

Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August

8:30 am - 5:30 pm 8:30 am - 5:30 pm 8:30 am - 5:30 pm 8:30 am - 5:30 pm

Sketches

Short illustrated talks on computer graphics and interactive techniques in art, cinema, advertising, design, science, and engineering. Sketch presenters summarize speculative breakthroughs, work in progress, and recent achievements. Following their presentations, they answer questions and discuss future implications of their work.

Sketches & Posters Committee

Marc Alexa

Sketches & Posters Co-Chair Technische Universität Berlin

Adam Finkelstein

Sketches & Posters Co-Chair Princeton University

Helen-Nicole Kostis

XSV Ex-Student Volunteer University of Maryland at Baltimore County & Goddard Space Flight Center, NASA

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The University of Tokyo

Bonnie Mitchell

Bowling Green State University

Ken Perlin

New York University

Peter Schröder

California Institute of Technology

Andrew Willmott

Maxis, Electronic Arts

Jury Members

Nina Amenta

University of California, Davis

Alexander Belyaev

Max-Planck-Institut für Informatik

Mario Botsch

ETH Zürich

Robert Bridson

The University of British Columbia

David Caeiro

Ilion Animation Studios

Alexis Casas

Weta Digital

Anna Chupa

Lehigh University

Daniel Cohen-Or

Tel Aviv University

Peter Comninos

NCCA - Bournemouth University

Tony DeRose

Pixar Animation Studios

Oliver Deussen

Universität Konstanz

Yoshinori Dobashi Hokkaido University

Tom Forsyth RAD Game Tools Inc.

Cindy Grimm

Washington University in St. Louis

Eitan Grinspun

Columbia University

Stefan Gumhold

Max-Planck-Institut für Informatik

Clinton Hanson

Electronic Arts

David Hart

FallLine/Disney Interactive Studios

Leo Hourvitz

Polygon Pictures

Masahiko Inami

The University of Electro-Communications

Victoria Interrante

University of Minnesota

Wendy Ju

Stanford University

Jan Kautz

University College London

Andruid Kerne

Texas A&M University

Liliva Kharevvch

California Institute of Technology

Gordon Kindlmann

Brigham & Women's Hospital

Midori Kitagawa

University of Texas at Dallas

Joe Kniss

University of New Mexico

David Laidlaw

Brown University

Caroline Larboulette

Vienna University of Technology

Joseph LaViola

University of Central Florida

Jehee Lee

Seoul National University

Jaakko Lehtinen

Helsinki University of Technology

Andy Lomas

Framestore CFC

Kwan-Liu Ma

University of California, Davis

Lee Markosian

University of Michigan

Daniel Maskit

Digital Domain

Jon McCormack

Monash University

Jason Mitchell

Valve

Ramon Montova

Walt Disney Animation Studios

Tamara Munzner

The University of British Columbia

Takeshi Naemura

The University of Tokyo

Andrew Nealen

Technische Universität Berlin

Konrad Polthier

Freie Universität Berlin

Sketches & Posters Committee (Continued)

Ocean Quigley Electronic Arts

Chris Rowland University of Dundee

Carlo Séquin

University of California, Berkeley

Claudio T. Silva University of Utah

Philipp Slusallek Universität des Saarlandes

Christa Sommerer Kunstuniversität Linz

Olga Sorkine Technische Universität Berlin

Jos Stam

Autodesk, Inc.

Ayellet Tal

Israel Institute of Technology

Rasmus Tamstorf Walt Disney Feature Animation

Emru TownsendFrames Per Second Magazine

Luiz Velho

Rüdiger Westermann

Instituto de Matemática Pura e Aplicada

Technischen Universität München

Eugene ZhangOregon State University

Matthias Zwicker University of California, San Diego **3:45 - 4:35 pm** Room 11 AB Session Chair

Morgan McGuire, Williams College

Highlights From I3D

A reprise of the Symposium on Interactive 3D Graphics and Games.

4:40 - 5:30 pm Room 11 AB

Session Chair

Drew Davidson, Art Institute of Pittsburgh

Highlights From Sandbox

A reprise of the annual ACM SIGGRAPH Video Game Symposium.

3:45 - 4:35 pm

Room 9

Session Chair

Dirk Reiners, LITE

Highlights From Emerging Display Technologies

A fast-forward reprise of Emerging Display Technologies 2007.

4:40 - 5:30 pm

Session Chair

Room 9

David Luebke, NVIDIA Corporation

Highlights From Graphics Hardware

A reprise of Graphics Hardware 2007, the international forum for exchanging experience and knowledge related to computer graphics hardware.

8:30 - 10:15 am

Room 1 AB

Session Chair

Joe Kniss, University of New Mexico

The Viz Biz

Light Threads - Illustrating Movement Dynamics in City Models

A novel method for illustrating the movement dynamics in urban space. The generated illustrative maps turn humans cognition of dynamics from a reflective into an experiential mode.

Marc Nienhaus

Universität Potsdam/mental images, Berlin marc.nienhaus.graphics@gmail.com

Jürgen Döllner

Universität Potsdam

Bruce Gooch

University of Victoria

8:30 - 10:15 am

Room 9

Mapping, Illuminating, and Interacting With Science

A world map and a science map that show 800,000 papers in 776 scientific paradigms can be interactively explored to understand the origin of scientific contributions and the impact of scientists.

Kevin W. Boyack

Sandia National Laboratories

Richard Klavans

SciTech Strategies, Inc.

W. Bradford Paley

Digital Image Design Incorporated

Katy Börner

SLIS, Indiana University katy@indiana.edu

Session Chair

Olga Sorkine, Technische Universität Berlin

The Regular Four-Dimensional 57-Cell

Besides the six regular four-dimensional "Platonic" polytopes, there exist two fascinating, highly symmetrical 4D objects with 11 and 57 non-orientable cells, respectively. This sketch summarizes an attempt to visualize these objects through stepwise construction.

Carlo H. Séquin James F. Hamlin

University of California, Berkeley sequin@cs.berkeley.edu

Multi-User Interaction on the DNA Workbench

With the DNA Workbench, participants use gesture-based input to engage and collaborate, forming a communal and kinesthetic learning experience for understanding DNA replication.

Alan Price

Vita Berezina-Blackburn The Ohio State University

aprice@accad.osu.edu

From DNA to 3D Organic Art Forms

A novel "biological" technique to define and evolve 3D art forms. The approach combines a reimplementation of the "FormGrow" system of Todd and Latham with an external source: DNA sequences.

William Latham Miki Shaw Stephen Todd Frederic Fol Leymarie University of London

w.latham.miki@gold.ac.uk

Lawrence Kelley Benjamin Jefferys Imperial College

Taking Shape

Surface Network Construction From Non-Parallel Cross-Sections

Given any set of planar cross-sections with piece-wise linear curve networks, this novel method produces a closed triangular surface network that smoothly interpolates the input curves.

Lu Liu Tao Ju

Washington University in St. Louis liulu351@gmail.com

Real-Time Constructive Solid Geometry

An improved BSP tree-merging algorithm for Boolean operations. The result is an order of magnitude faster (16-30x) and admits a straightforward implementation.

Mikola Lysenko

Michigan Technological University mclysenk@mtu.edu

Volume-Controlled Surface Fairing

A simple, efficient, and unconditionally stable surface-fairing scheme with a local near preservation of volume built into the surface flow.

Ilya Eckstein

University of Southern California ilyaeck@usc.edu

Yiying Tong

California Institute of Technology

C.C.-Jay Kuo

University of Southern California

Mathieu Desbrun

California Institute of Technology

Scalable Free-Form Deformation

A streaming system that allows performance of interactive freeform deformation on arbitrary gigantic objects on a single workstation.

Tamy Boubekeur

tamy.boubekeur@labri.fr

Olga Sorkine

Technische Universität Berlin

Christophe Schlick

LaBRI-INRIA

Nearly Rigid Deformation by Linear Optimization

An approach for fast, near-rigid 3D deformation achieved by approximating a rigid transformation of each point by a moving leastsquares optimization with a linear closed-form solution.

SoHveon Jeona Chang-Hun Kim

Korea University SoHyeon.Jeong@gmail.com

10:30 - 11:20 am

Room 6 DE

Session Chair

Bruce Gooch, University of Victoria

11:25 am - 12:15 pm Room 6 DF

Session Chair

Jovan Popović, Massachusetts Institute of Technology

Highlights From NPAR

A fast-forward reprise of the 5th International Symposium dedicated to non-photorealistic animation and rendering.

Highlights From SCA

A reprise of the Symposium on Computer Animation, the premier forum for innovations in the software and technology of computer animation.

3:45 - 4:35 pm

Room 6 DE

Session Chair Christine Alvarado, Harvey Mudd College 4:40 - 5:30 pm Room 6 DE

Session Chair

Steven Feiner, Columbia University

Highlights From SBIM

A reprise of the Fourth International Workshop on Sketch-Based Interfaces and Modeling.

Highlights From UIST

A reprise of the 19th annual ACM Symposium on User Interface Software and Technology.

3:45 - 5:30 pm

Session Chair

Helen-Nicole Kostis, University of Maryland at Baltimore County & Goddard Space Flight Center, NASA

Room 1 AB

Is This For Real?

Seamless Tangible Interaction Through Selective Stylization

A new style of tangible interaction that seamlessly displays physical objects and virtual models in a technical illustration style. Outside regions and the users' hands are shown unaltered.

Jan Fischer

University of Victoria ian@ianfischer.com

Daniel Flohr Wolfgang Strasser

Universität Tübingen

Illumination-Sensitive Dynamic Virtual Sets

A high-speed optical motion capture method that can measure three-dimensional motion, orientation, and incident illumination at tagged points in a scene.

Bert De Decker

Universiteit Hasselt bert.dedecker@uhasselt.be

Hideaki Nii University of Tokyo Yuki Hashimoto

University of Electro-Communications

Dylan Moore

Syracuse University

Jay Summet

Georgia Institute of Technology

Yong Zhao

Brown University

Jonathan Westhues Paul Dietz

John Barnwell

Mitsubishi Electric Research Laboratories (MERL)

Masahiko Inami

University of Electro-Communications

Philippe Bekaert

Universiteit Hasselt

Ramesh Raskar

Mitsubishi Electric Research Laboratories (MERL)

Teleshadow

An Andon-shaped light for private spaces that enables the user to feel the presence of another person in remote spaces by embodied messages: shadow.

Shunpei Yasuda Sho Hashimoto Mariko Koizumi Naohito Okude Keio University shunp@sfc.keio.ac.jp

The "Castelet": A Dynamically Reconfigurable Stage for Performing Arts

This modular stage machinery composed of simple building blocks allows implementation of complex surfaces that can be modified rapidly and dynamically during a performance.

Jean-Philippe Jobin Laval University jobin@gmc.ulaval.ca

Sylvain Comtois Clément Gosselin Denis Laurendeau Robert Faguy Université Laval

Implementing Wave Particles for Real-Time Water Waves With Object Interaction

Implementation details of a waveparticle approach that offers realtime and unconditionally stable simulation of fluid surface waves and their two-way interactions with floating objects.

Cem Yuksel Donald H. House John Keyser Texas A&M University cem@cemyuksel.com

3:45 - 5:30 pm Room 9

Session Chair

Matthias Zwicker, University of California, San Diego

It's All About the Environment

3D Scene Modeling Using Pose-Free Reconstruction

This sketch presents a fundamental change to the traditional 3D modeling pipeline. The method completely eliminates camera position and orientation parameters, significantly simplifying the process for creating a real-world 3D model.

Daniel G. Aliaga Ji Zhang Mireille Boutin

Purdue University aliaga@cs.purdue.edu Imaging and 3D Tomographic Reconstruction of Time-Varying, Inhomogeneous Refractive Index Fields

A technique for 2D imaging and 3D tomographic reconstruction of time-varying, inhomogeneous refractive index fields. This method can be used to reconstruct phenomena such as gas plumes or liquid mixing.

Bradley Atcheson

The University of British Columbia atcheson@cs.ubc.ca

Ivo Ihrke

Max-Planck-Institut für Informatik

Derek Bradley Wolfgang Heidrich

The University of British Columbia

Marcus Magnor

Technische Universität Braunschweig

Hans-Peter Seidel

Max-Planck-Institut für Informatik

Modeling Repetitive Motions in Real-World 3D Scenes

A methodology for modeling repetitive motions in 3D scenes, an efficient passive multiple-viewpoint modeling method using two cameras, and an active structured-light method for acquiring dense color and depth samples.

Yi Xu Daniel G. Aliaga

Purdue University xu43@cs.purdue.edu

1001 Acquisition Viewpoints: Efficient and Versatile View-Dependent Modeling of Real-World Scenes

An automated modeling approach based on sampling the scene sparsely from a dense set of acquisition viewpoints. The system acquires complex scenes from thousands of viewpoints in minutes.

Mihai Mudure Voicu Popescu

Purdue University

Interactive Procedural Street Modeling

Procedural techniques for modeling street networks. The techniques use methods from tensor field modeling to provide high-level interaction and control of more traditional procedural techniques.

Gregory Esch

Oregon State University eschgr@eecs.oregonstate.edu

Peter Wonka

Arizona State University

Pascal Mueller

ETH Zürich

Eugene Zhang Oregon State University

8:30 - 10:15 am Room 3

Session Chair

Lee Markosian, University of Michigan

I've Got You Covered

Stencil-Routed A-Buffer

A GPU technique to capture all the fragments in a frame eight times faster than depth peeling, by using render to multisample textures with stencil routing.

Kevin Mvers Louis Bavoil

NVIDIA Corporation kmyers@nvidia.com

Fast Poisson Disk Sampling in Arbitrary Dimensions

An O(N) algorithm to generate Poisson disk samples that can be trivially implemented in arbitrary dimensions.

Robert Bridson

The University of British Columbia rbridson@cs.ubc.ca

8:30 - 10:15 am

Room 6 DE

Session Chair Jos Stam, Autodesk, Inc.

Pixmotor: A Pixel-Motion Integrator

We present a fast, high-quality, image-based technique for applying motion blur to a static image. Rhythm & Hues has used it extensively for visual effects in major motion pictures.

Ivan Neulander

Rhythm & Hues Studios ivan@rhythm.com

Efficient Rendering of Human

A new sum-of-Gaussians representation of diffusion profiles allows highly realistic real-time rendering of multi-layer skin by modifying texture-space diffusion and translucent shadow maps.

Eugene d'Eon **David Luebke Eric Enderton NVIDIA** Corporation edeon@nvidia.com

Approximation of Subdivision Surface for Interactive **Applications**

A new approximation of subdivision surfaces for interactive applications, with low CPU support, single-pass GPU adaptive rendering, and higher visual quality than previous fast smoothing methods.

Tamy Boubekeur Christophe Schlick

LaBRI-INRIA tamy.boubekeur@labri.fr

The Oasis

Effects for the Birth of Sandman

An overview of the techniques used to create the effects elements for the Birth of Sandman Sequence in "Spider-Man 3."

Christoph Ammann Doug Bloom Jonathan M. Cohen John Courte Lucio Flores Sho Hasegawa **Terrance Tornberg** Laurence Treweek **Bob Winter Chris Yang** Sony Pictures Imageworks

Rendering Tons of Sand

Production techniques for rendering massive amounts of sand in loose and tightly packed arrangements. Details covered include rendering millions of grains with limited memory and custom LODscriptable sand modeling.

Chris Allen Doug Bloom Jonathan M. Cohen Laurence Treweek Sony Pictures Imageworks callen@imageworks.com

How to Build a 60-Foot Man of Moving Sand

In the final battle of "Spider-Man 3," Sandman forms into a 60-foottall version of himself. The character, made of moving sand and debris, was a "big" challenge.

Jamie Pilgrim **Terrance Tornberg**

Sony Pictures Imageworks jamie@imageworks.com

Levelsets in Production: "Spider-Man 3"

For "Spider-Man 3," Sony Pictures Imageworks created a rich toolset of levelset-based modeling and animation tools, including methods for converting between geometry and levelsets and many other surface-editing operators.

Daniel P. Ferreira Jonathan M. Cohen **Doug Bloom** Chris Allen Sho Hasegawa Cory McMahon

Sony Pictures Imageworks dferreira@imageworks.com

Artistic Direction of Foliage

A modeling tool for trees in which the canopy is first sketched using simple geometric primitives then replaced automatically by procedurally grown foliage elements.

Amaury Aubel David Allen

DreamWorks Animation SKG Amaury.Aubel@dreamworks.com

3:45 - 5:30 pm

Room 3

Session Chair

Eitan Grinspun, Columbia University

Let's Get Physical

Modal Locomotion: Controlling Passive Elastic Dynamics

A method that uses modal analysis to create simple locomotion controllers for animals with complex biomechanical structures.

Paul G. Kry LNRS/INRIA paul.kry@imag.fr

Lionel Reveret INRIA

François Faure Marie-Paule Cani INRIA/UJE

Contact Trees: Adaptive Contact Sampling for Robust **Dynamics**

An accurate and adaptive contactgeneration approach that tightly integrates hierarchical collision detection with generation of wellsampled contact constraints.

Danny M. Kaufman

The University of British Columbia and Rutgers University kaufman@cs.rutgers.edu

Shiniiro Sueda

The University of British Columbia

Dinesh K. Pai

The University of British Columbia and Rutgers University

Real-Time Voxelization of Triangle Meshes on the GPU

Two algorithms to generate voxelizations of triangle meshes on the GPU. Because all the data are generated on the GPU, the algorithms are useful for GPU-based physical simulation.

Ignacio Llamas **NVIDIA** Corporation illamas@nvidia.com

Dynamic Execution Tracing of Physical Simulations

To address the performance analysis and debugging needs of simulation software such as fluid or cloth dynamics engines, Imageworks developed an embedded tracing language, sstrace, based on Sun's DTrace language.

Jonathan M. Cohen Sony Pictures Imageworks jcohen@imageworks.com

Blobtacular: Surfacing Particle Systems in "Pirates of the Caribbean 3"

A tool for efficient and flexible surfacing of particle systems using various novel techniques. The specific application was for production of "Pirates of the Caribbean 3."

Ken Museth Michael Clive Nafees Bin Zafar Digital Domain museth@acm.org

3:45 - 4:45 pm Room 6 DE

Session Chair

Randal Kleiser, RK Productions

All in a Dream: The Award Winning Films of the SIGGRAPH 2007 Computer Animation Festival

Dreammaker Jury Honors

Leszek Plichta

Filmakademie Baden-Württemberg

En Tus Brazos Award of Excellence

François-Xavier Goby **Edouard Jouret** Matthieu Landour Supinfocom Valenciennes fxgoby@gmail.com

Ark Best of Show

Grzegorz Jonkajtys gj@thearkfilm.com

Marcin Kobylecki

5 - 6 pm Room 6 DE Session Chair

Michael Kass, Pixar Animation Studios

Vogue!

High Fashion in Equations

With the 3D animation "High Fashion in Equations," MIRALab-University of Geneva brought to life virtually 18 haute couture garments after designs from Marc Bohan, Serge Guérin and Hubert de Givenchy.

Christiane Luible Pascal Volino Nadia Magnenat-Thalmann

MIRALab-University of Geneva luible@miralab.unige.ch

Data-Driven Cloth Animation

A data-driven method for cloth animation that manipulates segments of detailed cloth motion capture data to match a human motion capture skeleton.

Ryan White

University of California, Berkeley and University of Illinois at Urbana Champaign

ryanw@cs.berkeley.edu

Keenan Crane D.A. Forsyth

University of Illinois at Urbana Champaign

Driving Motion Control by Motion Capture Using CG

A novel pipeline of motion data: from motion capture to a CG skeleton and then to a practical rig.

Alex Frisch James LeBloch Gil Baron Method Studios

Thursday, 9 August

8:30 - 10:15 am Room 1 AB

Session Chair

Ayellet Tal, Technion - Israel Institute of Technology

Bend and Stretch

Optimization-Based Interactive Motion Synthesis for Virtual Characters

An optimization-based approach to synthesizing interactive character animation, emphasizing both physical realism and user controllability. This approach also provides a generic framework for designing intuitive and versatile controllers.

Sumit Jain Yuting Ye C. Karen Liu

University of Southern California sumit@graphics.usc.edu

Simulating Coordinated Movement With Tendons

A novel simulation framework for efficiently and accurately simulating the coupled dynamics of tendons and bones.

Shinjiro Sueda Dinesh K. Pai

The University of British Columbia sueda@cs.ubc.ca

Musculo-Skeletal Shape Skinning

Unique muscle and skin binding, pose-space and skin-simulation system, procedural volume primitive weighted-quaternion binding algorithm with fully integrated pose-space technology coupled with layered dynamic simulation. The system was used on "Spider-Man 3."

Erick Miller Joe Harkins

Sony Pictures Imageworks erickmiller@yahoo.com

Fantastic Four: Stretching The Limits

The unique challenge of rigging, deforming, performing realistic coth-simulation, and photo-realistic rendering of Mr. Fantastic, an all-CG character that can stretch 1,500+ feet and deform into any shape imaginable.

Erick Miller Jeremy Butler Rudy Grossman Russell Pearsall Hydraulx erickmiller@yahoo.com

8:30 - 10:15 am

Room 4

Session Chair

Joseph LaViola, University of Central Florida

Nice Gestures

Wearable Haptic Display to Present Virtual Mass Sensation

A wearable haptic display that presents the weight sensation of a virtual object on the fingerpad without proprioception. This device will provide a new form of ubiquitous haptic interaction.

Kouta Minamizawa Souichiro Fukamachi

The University of Tokyo kouta_minamizawa@ipc.i.u-tokyo.ac.jp

Hirovuki Kaiimoto

The University of Electro-Communications

Naoki Kawakami Susumu Tachi

The University of Tokyo

8:30 - 10:15 am

Room 6 DE

Visualizing Collision Effects Between Penetrating and Non-Penetrating Objects

This novel method for visualizing collision effects between penetrating or non-penetrating objects is useful for virtual sculpting, surgery simulation, games, and generation of special effects.

Carlos Correa Deborah Silver

Rutgers University cdcorrea@caip.rutgers.edu

Subtle Gaze Direction

Combining eye-tracking with subtle image-space modulation, this new technique involuntarily draws an observer's gaze to specific image locations.

Session Chair

Ken Perlin, New York University

Revnold Bailey

Washington University in St. Louis rjb1@cse.wustl.edu

Ann McNamara

St. Louis University

Cindy Grimm Nisha Sudarsanam

Washington University in St. Louis

Motion Belts

A novel approach to make visual outlines of motion capture clips. The method is suitable for checking multiple clips at the same time, unfolding the motions into twodimensional stripes of keyframes.

Hiroshi Yasuda Ryota Kaihara Suguru Saito Masayuki Nakajima

Tokyo Institute of Technology yasuda@img.cs.titech.ac.jp

DirectCam: A Gestural System for Animatic Creation

A system that uses optical tracking of hand postures and gestures to allow users to create animatics on large-scale displays for interactive design of rough animation.

Noah Lockwood Patricio Simari Patrick Coleman Karan Singh

University of Toronto lockwood@dgp.toronto.edu

Oh. Rats!

Chop It Up!: Animation-Driven Modeling, Simulation, and Shading in the Kitchen

For Disney Pixar's "Ratatouille," the authors designed and developed an animation-driven system for chopping food to quickly create complex models, motion, and shading based on the motion of a pre-animated knife.

Patrick Coleman

Pixar Animation Studios and University of Toronto patrick@dgp.toronto.edu

Eric Froemling

Pixar Animation Studios

Virtual Tailoring for "Ratatouille": Clothing the Fattest Man in the World

The dynamic costumes used in "Ratatouille" required extensive development and innovation in Pixar's cloth pipeline. This sketch describes new cloth modeling, simulation, and rendering techniques dictated by the film's requirements.

Christine Waggoner David Baraff

Pixar Animation Studios cmw@pixar.com

Articulating The Appeal

How character artists used articulation to make rats appealing on "Ratatouille."

Sonoko Konishi Michael Venturini

Pixar Animation Studios sonoko@pixar.com

500 Million and Counting: Hair Rendering on "Ratatouille"

An overview of the technologies developed for hair rendering on "Ratatouille," which achieved an order-of-magnitude reduction in render time and memory for complex scenes.

David Rvu

Pixar Animation Studios rvu@pixar.com

Fast, Soft Reflections Using Radiance Caches

A technique that utilizes radiance caches to significantly speed up the calculation of soft reflections.

The sketch also summarizes the accuracy trade-offs inherent in this approach.

Apurva Shah **Justin Ritter** Chris King Stefan Gronsky

Pixar Animation Studios apurva@pixar.com

Effective Toon-Style Rendering Control Using Scalar Fields

Using scalar fields to produce well-behaved 2D edge/contour lines from 3D models. This method creates lines of varying thickness, is fast, looks good, and is easy to control.

Alex Harvill

Pixar Animation Studios aharvill@pixar.com

10:30 am - 12:15 pm

Room 4

Session Chair

Cindy Grimm, Washington University in St. Louis

Making Faces

Anatomically Accurate Modeling and Rendering of the Human Eye

A novel method for recovering the iris structure and scattering features from a single eye photograph. The resulting model is rendered in real time using graphics hardware

Guillaume François

IRISA/INRIA and France Télécom R&D gfrancoi@irisa.fr

Pascal Gautron Gaspard Breton

France Télécom R&D

Kadi Bouatouch

10:30 am - 12:15 pm Room 3 Sketching Facial Expressions

A recognition-based interface for driving facial expression with sketches. This work focuses on the robustness of recognition in the presence of unconstrained sketches.

Gabriele Nataneli Petros Faloutsos

University of California, Los Angeles nataneli@cs.ucla.edu

A High-Resolution Face-Scanning System Using Polarized Gradient Illumination

This face-scanning system combines polarized spherical-gradient illumination and stereo. The system produces reliable

Session Chair

Claudio T. Silva, University of Utah

high-resolution geometry, normals, and texture.

Wan-Chun Ma Tim Hawkins Pieter Peers Charles-Felix Chabert Malte Weiss Paul Debevec

USC Center for Creative Technologies timh@ict.usc.edu

Light Shower: A Poor Man's Light Stage Built With an Off-the-Shelf Umbrella and Projector

An inexpensive light-stage system that consists of an off-the-shelf projector and a white umbrella.

Makoto Okabe Kenshi Takayama Takashi Ijiri Takeo Igarashi

The University of Tokyo makoto21@ui.is.s.u-tokyo.ac.jp

Fast and Reusable Facial Rigging and Animation

Manual creation of individual facial rigs is time-consuming. This application, which implements a novel deformation method, automatically transfers rig and animations between characters, and it is 90-99 percent faster than traditional techniques.

Veronica Costa Orvalho Antonio Susin

Universidad Politecnica de Catalunya veronica.orvalho@gmail.com

Traveling Light

GPU-Based Light Wavefront Simulation for Real-Time Refractive Object Rendering

This sketch presents technical implementation details for the SIGGRAPH 2007 paper Eikonal Rendering: Efficient Light Transport in Refractive Objects. It describes the GPU-based wavefront simulation through refractive objects and the rendering pass.

Gernot Ziegler Ivo Ihrke Art Tevs

Christian Theobalt

Max-Planck-Institut für Informatik gz@geofront.eu

Marcus Magnor

Technische Universität Braunschweig

Hans-Peter Seidel

Max-Planck-Institut für Informatik

Ray Tracing Dynamic Scenes Using Selective Restructuring

A novel algorithm to selectively restructure bounding volume hierarchies (BVH) to improve the performance of ray tracing massive dynamic scenes.

Sung-Eui Yoon

Lawrence Livermore National Lab sungeui@cs.unc.edu

Sean Curtis
Dinesh Manocha

University of North Carolina at Chapel Hill

Radiance Caching for Participating Media

An extension of irradiance caching to participating media. This method is several orders of magnitude faster then path tracing and can efficiently handle scenes that are difficult for photon mapping.

Wojciech Jarosz Craig Donner Matthias Zwicker Henrik Wann Jensen

University of California, San Diego wjarosz@ucsd.edu

Interactive Light Transport Editing for Flexible Global Illumination

A new approach to lighting design based on intuitive light-transport editing with an interactive painting interface. The interface provides more flexibility for lighting with global illumination.

Juraj Obert

University of Central Florida

Jaroslav Krivanek Daniel Sýkora

Czech Technical University xkrivanj@fel.cvut.cz

Sumanta Pattanaik University of Central Florida Global Illumination Using Precomputed Light Paths for Interactive Light Condition Manipulation

A global illumination solution for moving the viewpoint and light sources and modifying the characteristics of materials in interactive frame rates. The solution handles diffuse BRDFs and low-frequency glossy BRDFs.

Yonghao Yue

The University of Tokyo yonghao@nis-lab.is.s.u-tokyo.ac.jp

Kei Iwasaki

The Wakayama University

Yoshinori Dobashi

The Hokkaido University

Tomoyuki Nishita
The University of Tokyo

10:30 am - 12:15 pm

Room 6 DE

Session Chair

Daniel Maskit, Digital Domain

Drat, More Rats!

Acting With Contact: Interactive Cartoon Collision & Response

An intuitive approach and technology that enables 3D animators to act with cartoon contact, interactively controlling and shaping response as characters self-collide, squish against their environment, and contact props and each other.

Gordon Cameron Robert Russ

Adam Woodbury

Pixar Animation Studios gocam@pixar.com

Rivers of Rodents: An Animation-Centric Crowds Pipeline for "Ratatouille"

An overview of the techniques, technology, and animation-cen-

1:45 - 3:30 pm

Room 1 AB

tric approach to crowd simulation used to create hero-quality animation for the rat colony in "Ratatouille."

David Ryu Paul Kanyuk

Pixar Animation Studios rvu@pixar.com

Extracting and Parametrizing Temporally Coherent Surfaces From Particles

A fluid-surfacing technique used in "Ratatouille" to efficiently extract temporally coherent surfaces from particles with parametrization that allows textural details to be later added in rendering.

Chen Shen Apurva Shah

Pixar Animation Studios csh@pixar.com

Session Chair

Jan Kautz, University College London

An Effects Recipe for Rolling Dough, Cracking an Egg, and Pouring a Sauce

How cooking effects were created for materials ranging from elastoplastic solids to viscous liquids, illustrated with several shot examples from "Ratatouille."

Tolga G. Goktekin Jon Reisch Darwyn Peachey Apurva Shah

Pixar Animation Studios goktekin@eecs.berkeley.edu

Simulating Whitewater Rapids in "Ratatouille"

The techniques and tools used to simulate and render a thrilling whitewater rapids sequence with waves, splashes, waterfalls, foam, spray, mist, and bubbles in "Ratatouille."

Eric Froemling Tolga Goktekin Darwyn Peachey

Pixar Animation Studios peachev@pixar.com

Rat-Sized Water Effects in "Ratatouille"

Achieving believable water-related effects from the point of view of a rat for a particular sequence in "Ratatouille."

Gary Bruins Jon Reisch

Pixar Animation Studios bruins@pixar.con

Let There Be Light

Geometric Modeling Using Focal Surfaces

A new framework for modeling discrete surfaces consistent with a differential geometry specified by an associated piecewise linear (PL) focal-surface approximation.

Jingyi Yu

University of Delaware vu@cis.udel.edu

Xiaotian Yin Xianfeng Gu

State University of New York, Stony Brook

Leonard McMillan

University of North Carolina at Chapel Hill

Steve Gortler

Harvard University

Real-Time Shading With Filtered Importance Sampling

An efficient technique for imagebased lighting of objects with spatially varying materials, where BRDF-proportional importance sampling is combined with environment-map filtering to evaluate the illumination integral in real time.

Mark Colbert

University of Central Florida colbert@cs.ucf.edu

Jaroslav Krivanek

Czech Technical University

High-Dynamic-Range Image Hallucination

A user-friendly, interactive tool to hallucinate an HDR image from a single LDR input. The technique

strives for visually pleasing results, not precise reconstruction, which is usually impossible.

Lvdi Wang

Microsoft Research Asia and Tsinghua University

Li-Yi Wei Kun Zhou **Baining Guo**

Heung-Yeung Shum

Microsoft Research Asia liyiwei@stanfordalumni.org

Mesostructure From Specularity Using Coded Illumination

A technique for measuring mesostructure using N controlled light sources but only O(log N) images instead of O(N). This improvement on previous work is achieved by using coded illumination patterns.

Yannick Francken **Tom Mertens** Jo Gielis Philippe Bekaert

Universiteit Hasselt yannick.francken@uhasselt.be

Fast Image-Based Separation of Diffuse and Specular Reflections

A novel image-based method for separating diffuse and specular reflections of real objects under distant environmental incident illumination.

Bruce Lamond Pieter Peers

Paul Debevec

USC Institute for Creative Technologies

1:45 - 3:30 pm

Room 4

Session Chair

Emru Townsend, Frames Per Second Magazine

Looking Good

Anime-Perspective

Two tools for creating images with anime-perspective, a surreal view used in traditional animations: Anime-Pers deformer and Anime-Lens shader.

Yosuke Katsura Ken Anjyo

OLM Digital, Inc. ykatsura@gmail.com

Data-Driven Efficient Production of Cartoon Character Animation

Proposed technologies to improve the efficiency of Japanese Anime production. Animators can directly express their sensibilities in 3D characters, especially their styles and motions.

Shigeo Morishima

Waseda University shigeo@waseda.jp

Shigeru Kuriyama

Toyohashi University of Technology

Shinichi Kawamoto

ATR Tadamichi Suzuki Toyohashi University of Technology

Masaaki Taira

Session Chair

Trilogy Future Studio Inc.

Tatsuo Yotsukura Satoshi Nakamura

ATR

Sketching Curves With Immediate Feedback

A fast, robust, and accurate method for fitting a G1-continuous, piecewise polynomial curve to a sequence of digitized points as they are drawn rather than after a pen-up event.

Sarah F. Frisken

Tufts University

Semi-Regular Patterns on Surfaces

A technique for decorating surfaces with seamless ornamental designs. Planar patterns belonging to certain symmetry groups can easily be mapped onto surfaces with semiregular parameterizations.

Craig S. Kaplan

University of Waterloo csk@cgl.uwaterloo.ca

Combining Computer Vision and Physics Simulations Using GPGPU

A system that uses the computational power of graphics processors (GPUs) to enable a computer vision algorithm, such as stereo depth extraction, to drive a physics simulation in an interactive environment.

Justin Hensley John Isidoro

Arcot Preetham

Advanced Mirco Drives, Inc. justin.hensley@amd.com

1:45 - 3:30 pm Room 6 DE

Spor(T)

Player-Driven Procedural Texturing

Two forms of player-driven procedural texturing for game models. Because the game models are also player-created, this poses unique challenges.

Andrew Willmott Ocean Quigley Henry Goffin Chris Hecker Shalin Shodhan David DeBry

Maxis awillmott@maxis.com

Creating Spherical Worlds

Leo Hourvitz, Polygon Pictures

Production of Spore required creating spherical planets rather than the more usual 2D terrain. This sketch describes how the spherical worlds were created and presents Maxis' system for procedurally generating four billion planets.

Andrew Willmott Ocean Quigley James Grieve Christian Stratton Kate Compton Eric Todd Ed Goldman

Maxis awillmott@maxis.com

Fast Object Distribution

The problem: How to quickly place objects with attribute variation according to density maps, in a visually pleasing way. The solution: An incremental Halton sequence.

Andrew Willmott

Maxis awillmott@maxis.com

Rigblocks: Player-Deformable Objects

Deformable building blocks that allow players to create their own creatures, buildings, or vehicles, which can then be used in-game, providing a richer player experience.

Andrew Willmott Ocean Quigley Lydia Choy Brian Sharp Ryan Ingram

Maxis awillmott@maxis.com

Improving Real-Time Motion

With its new animation tool, called ANT, Electronic Arts Canada has taken a major step toward achieving believable videogame motion.

Eric Armstrong
Electronic Arts Canada

3:45 - 5:30 pm

Room 4

Session Chair

Victoria Interrante, University of Minnesota

Image is Everything

Digital Restoration of Moldy Aged Films

A learning-based defect-detection method and a flow-based repair algorithm for restoration of films that have been seriously damaged by mold and dust.

Chieh-Ju Tu

National Taiwan University

Shun-Huei Kuan

Digimax Inc.

Yung-Yu Chuang

National Taiwan University

Jiann-Rong Wu

Digimax Inc.

Bing-Yu Chen Ming Ouhyoung

National Taiwan University cyy@csie.ntu.edu.tw

3:45 - 6 pm

Room 6 DE

A Texture-Synthesis Approach to Elastica Inpainting

A new algorithm for solving Euler's elastica energy-based inpainting using texture-synthesis techniques. The algorithm repairs smoothimage areas while maintaining edge connectivity.

Kangvu Ni

University of California, Los Angeles kangyu.ni@gmail.com

Doug Roble

Digital Domain

Tony Chan

University of California, Los Angeles

Image Morphing for Space-Time Interpolation

A real-time space-time interpolation method for images taken by unsynchronized multi-camera setups. Because it takes human visual perception into account, no proxy geometry, depth information, or camera calibration is necessary.

Timo Stich Marcus Magnor

Technische Universität Braunschweig stich@cg.cs.tu-bs.de

Stabilizing Video While Keeping Resolution and Capturing Intention

A novel, robust, automatic, and practical method of video stabilization by preserving original video

resolution and considering the capturing intentions of the user.

Bing-Yu Chen Jong-Shan Lin Wei-Ting Huang

National Taiwan University robin@ntu.edu.tw

Video Enhancement Using Reference Photogrpahs

A technique to enhance a lowquality video sequence based on high-resolution photographs taken at the same time.

Cosmin Ancuti

Universiteit Hasselt cosmin.ancuti@uhasselt.be

Tom Haber Tom Mertens Philippe Bekaert Universiteit Hasselt

Go With The Flow

End of the World Waterfall Setup for "Pirates of the Caribbean 3"

The tools and pipelines developed to manage the shot-iteration cycles for rendering the volumetric waterfall in "Pirates of the Caribbean: At World's End."

Ryo Sakaguchi **Todd Dufor** Jens Zalzala **Paul Lambert** Alan Kapler

Digital Domain ryo@d2.com

Wave Displacement Effects for "Surf's Up"

Techniques used to create ocean displacement effects for "Surf's Up," including ambient waves, surfing wave effects, and

character-driven ripples, wakes, and foam patterns.

David Hart, FallLine/Disney Interactive Studios

Deborah Carlson

Sony Pictures Imageworks dcarlson@imageworks.com

"Surf's Up" Beach Break

Overview of a highly procedural and efficient setup for beach break on "Surf's Up," which allowed the animators to generate the shot in less than an hour.

Tom Kluyskens

Sony Pictures Imageworks tkluyskens@imageworks.com

Making Waves for "Surf's Up"

The Hero procedural, predefined data-type-driven wave system, treated as characters within a

nonlinear ocean-system pipeline and interpolated in a non-timestep-reliant system that generates unlimited wave types for surfboard wake trails, crashing and breaking energy, and oceansurface ripple previews.

Erick Miller **Rob Bredow** Daniel Kramer Matt Hausman **Deborah Carlson Peter Shinners** John Clark

Sony Pictures Imageworks erickmiller@yahoo.com

Simulation, Simulation, Simulation

For "Superman Returns" and "Happy Feet," Rhythm & Hues Studios developed various fluidsimulation techniques and created a flexible process to maximize the ability to art-direct each step.

Markus Kurtz Jerry Tessendorf

Rhythm & Hues Studios markusk@rhvthm.com

300's Liquid Battlefield: Fluid Simulation Spartan Style

An in-depth look at Scanline's CG shots with crashing ships in digital oceans simulated with Flowline.

Stephan Trojansky Thomas Ganshorn Oliver Pilarski

Flowline, ScanlineVFX

Location
Sails Pavilion

▶ Poster Presentations

Poster authors will stand by their posters to talk with attendees and demonstrate their work during these times:

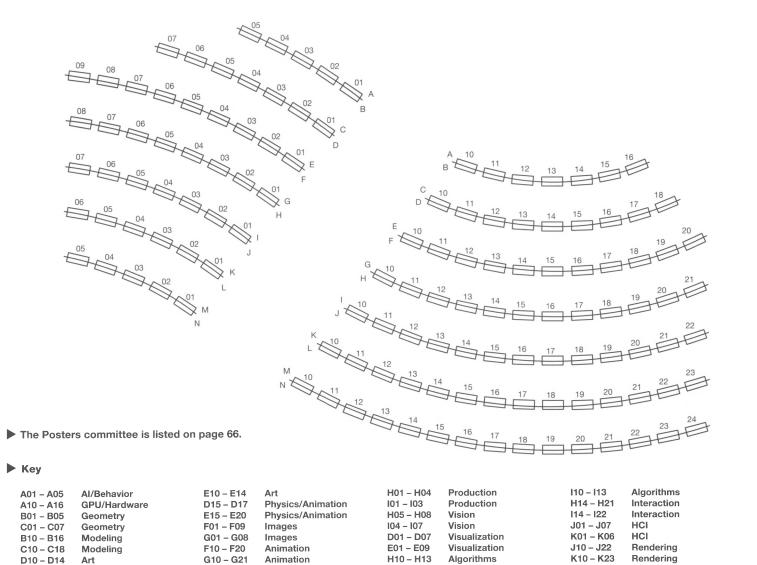
Monday, 6 August Wednesday, 8 August 12:15 – 1:15 pm 12:15 – 1:15 pm

Days & Hours

Sunday, 5 August Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August 8:30 am - 5:30 pm 8:30 am - Noon

Posters

Graphic displays of incremental, preliminary, partial, and innovative insights that are important but not fully developed. Posters are displayed throughout the conference week, and presenters discuss their work in scheduled sessions.



Al/Behavior

Designing and Implementing Knowledge Bases for Narrative

Animation Systems

David Ramamonjisoa Iwate Prefectural University dramamon@computer.org

Synaesthetics

Emrah Kavlak Damla Tamer

Sabanci University emrahk@su.sabanciuniv.edu

Toward Real-Time Object Manipulation in Dynamic Environments

Xiaoxi Jiang

Marcelo Kallmann

University of California, Merced xjiang2@ucmerced.edu

A04.

Emergent Geometry: Procedural Modeling Through Behavior

Christopher Mortonson

Aaron Cooper

Rensselaer Polytechnic Institute mortoc@gmail.com

A05.

Robot Gaming and Learning Using Augmented Reality

Mykhaylo Kostandov Jonas Schwertfeger

Odest Chadwicke Jenkins

Radu Jianu Mark Buller

Dan Hartmann

Matt Loper

Aggeliki Tsoli

Marek Vondrak

Wenjin Zhou

Brown University cjenkins@cs.brown.edu

Mark Fiala

National Research Council of Canada

GPU/Hardware

Implementing Wave Particles for Real-Time Water Waves With Object Interaction

Cem Yuksel

Donald H. House

John Keyser

Texas A&M University cem@cemyuksel.com

Saving the Z-Cull Optimization

Stephan Mantler Markus Hadwiger

VRVis Research Center step@acm.org

Christian Sigg

NVIDIA Corporation

A12.

A GPU Interpolating Reconstruction From Unorganized Points

Carlos Buchart

Diego Borro

Aiert Amundarain

CEIT and Tecnun (Universidad de Navarra) cibi3d@siggraph.org

A13.

GPU-Accelerated SPH Particle Simulation and Rendering

Yanci Zhang

Barbara Solenthaler

Renato Pajarola

Universität Zürich zhang@ifi.uzh.ch

A14.

Anywhere Pixel Compositor

Ruigang Yang

University of Kentucky ryang@cs.uky.edu

Anselmo Lastra

University of North Carolina at Chapel Hill

A15.

Hardware Accelerated Broad

Phase Collision Detection

Muiris Woulfe

John Dingliana

Michael Manzke

Trinity College Dublin woulfem@cs.tcd.ie

Metatextures: A Brief Introduction

University of North Carolina at Chapel Hill ctoates@email.unc.edu

Geometry

Feature-Based Subdivision Surface Fitting

Guillaume Lavoué Florent Dupont

LIRIS, INSA-Lyon

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Part Analogies of 3D Objects

Lior Shapira

Tel Aviv University

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Ariel Shamir

Interdisciplinary Center Herzliya

Daniel Cohen-Or

Tel Aviv University

Geometry-Sequence-Based Progressive Mesh

Compression

Jiheng Yang Baocai Yin

Yanfeng Sun

Dehui Kong

Beijing University of Technology iasonme@emails.biut.edu.cn

B04.

Eureka: Euler Spiral Splines

Raph Levien Carlo Séquin

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B05.

Leather Texture Generation Considering Sulci

Flow

Kaisei Sakurai

Kazunori Miyata

Japan Advanced Institute of Science and Technology kaisei@jaist.ac.jp

Naoki Kawai

Kazuo Matsufuji

Dai Nippon Printing Co., Ltd.

Surface-Based Deformation for Disconnected

Mesh Models

Kenta Ogawa

Masuda Hiroshi

kogawa@nakl.t.u-tokyo.ac.jp

Interactive Modeling for Augmented Reality

Russell Freeman

Anthony Steed

University College London rfreeman@cs.ucl.ac.uk

C03

Shape-Preserving Gray-Scale Skeletonization on

3D Density Maps

Sasakthi S. Abeysinghe

Tao Ju

Washington University in St. Louis

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C04

4-D/n-D Computer-Aided Design

Ichiroh Kanaya

Yoshito Ogata

Kazuo Kawasaki

Osaka University kanaya@sens.sys.es.osaka-u.ac.jp

Fast and Accurate Estimation of Principal Curva-

tures and Directions for Morphable Models **Justin Solomon**

Stanford University

justin.solomon@stanford.edu

C06.

Robust Fitting of Super Helices to Parametric

Curves

Mattias Bergbom

Linköpings universitet mattias.bergbom@gmail.com

Ken Museth Doug Roble Digital Domain

A Fast Mesh Deformation Tool for Blender

James Verrill

Joan Lasenby

University of Cambridge

iames.verrill@cantab.net

Modeling

Origamizing 3D Surface by Symmetry Constraints Tomohiro Tachi

The University of Tokyo tachi.tomohiro@gmail.com

Facial Muscle Adaption to Customize Facial

Expressions Yasushi Ishibashi

Kubo Hiroyuki Akinobu Maeiima

Waseda University i.yasushi@toki.waseda.jp

Demetri Terzopoulos

University of California, Los Angeles

Shigeo Morishima

Waseda University

Baked Crepe Texture Generation

Kaisei Sakurai

Japan Advanced Institute of Science and Technology kaisei@iaist.ac.ip

Akihiko Shirai **Fabien Goslin**

ENSAM P&LLab

Kazunori Mivata

Japan Advanced Institute of Science and Technology

B13

Speech-Animation Synthesis With Variable

Speech Rate

Akane Yano Hirovuki Kubo

Yoshihiro Adachi

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Demetri Terzopoulos

University of California, Los Angeles

Shigeo Morishima

Waseda University

SketchBook: Silhouette-Based 3D

Sketching Interface

Jeehyung Lee

Princeton University jeehyung@princeton.edu

Principal-Components Analysis on

3D Scanned Human Heads

Pengcheng Xi

Chang Shu Marc Rioux

National Research Council of Canada

perryxi@gmail.com

B16

A Real-Time Deformation Model Using

Patient-Specific Medical Data

Manabu Nagasaka Kentaro Takanami

Shin Hongo

Takafumi Terada

Takaaki Kikukawa

Masato Ogata

Mitsubishi Precision Co., Ltd.

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C10

Tile-Based Ambiguous Modeling

Maki Terai

Jun Fujiki

Reiji Tsuruno Kivoshi Tomimatsu

Kyushu University maki@verygood.aid.design.kyushu-u.ac.jp

A Procedural Workflow for Set Building

and Rendering

Christopher P. Redmann

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C12

Facial Type, Expression, and Viseme Generation

James Skorupski

Jerry Yee

Josh McCov

James Davis

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C13.

Sketch-to-Collage

David Gavilan

Suguru Saito Masayuki Nakajima

Tokyo Institute of Technology

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Simulation of Autumn Leaves

Xiaoyu Chi

Institute of Software, Chinese Academy of Sciences

Bin Shena

University of Macau

Yanvun Chen Microsoft Research Asia

vachen@microsoft.com

University of Macau & Chinese Academy of Sciences

Surface Network Construction From

Non-Parallel Cross-Sections

Lu Liu

Tao Ju

Washington University in St. Louis

liulu351@gmail.com

Chandrajit Bajaj

University of Texas at Austin

Daniel Low

Washington University, St. Louis

C16

A Free-Hand Drawing With Simultaneous

Projection of Predicted Guidelines

Hirokatsu So

Osaka University

sou@sens.sys.es.osaka-u.ac.ip

Ichiroh Kanava

Osaka University, PRESTO, Japan Science

and Technology Agency

Kosuke Sato

Osaka University

C17.

Modeling Repetitive Motions in Real-World

3D Scenes

Yi Xu

Daniel G. Aliaga

Purdue University

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C18

The D-BRDF Model as a Basis for BRDF

Acquisition

Abhijeet Ghosh

Wolfgang Heidrich The University of British Columbia

ghosh@cs.ubc.ca

Art

Hanahana: An Interactive Image System Using

Odor Sensors

Yasuaki Kakehi

PRESTO, Japan Science and Technology Agency

kakehi@hc.ic.i.u-tokyo.ac.jp

Motoshi Chikamori Kyoko Kunoh

Plaplax Ltd.

D11.

Towards the Living Canvas

Martin Naef

Glasgow School of Art

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D12

Designing a New Car-Body Shape by PCA

of Existing Car Database Tatsunori Hayakawa

Yusuke Sekine

Akinobu Maeiima

Shigeo Morishima

Waseda University tatsunori-nonkun@toki.waseda.jp

Dewy: A Condensation Display

Amanda Parkes

Dietmar Offenhuber

Massachusetts Institute of Technology Media Lab amanda@media.mit.edu

D14.

Magnetosphere

Kumiko Kushiyama

Tokyo Metropolitan University Kushi@ea.mbn.or.jp

Shinii Sasada

Masashi Yasuda

Yasu Suzumura

Japan Electronics College

3D Computer Arts in Clinical Radiology

John McGhee

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Graeme Houston

Ninewells Hospital

Rosemary Chesson

The Robert Gordon University

E11.

Nausea Transformer

Nancy Diniz

University College London

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Cesar Branco

Augmented Architectures

Miguel Dias

Instituto Superior de Ciências do Trabalho e da Empresa

nite aura: An Audio-Visual Interactive Immersive

Installation

Jinsil Seo **Grea Corness**

Simon Fraser University

iinsils@sfu.ca

Proprioceptive Sense in an Art Installation:

Amputation Box

David Jhave Johnston

Jinsil Seo

Diane Gromala

Simon Fraser University

iinsils@sfu.ca

E14.

MyTree: An Entertainment System for Lifelong

Visualization

Shin Seol

Yamaguchi Masahiro Hashimoto Kotaro

Tomohiro Tanikawa

Iwai Toshio

Michitaka Hirose

The University of Tokyo shin@cyber.t.u-tokyo.ac.jp

Physics/Animation

Optimization-Based Interactive Motion Synthesis

for Virtual Characters

Sumit Jain Yuting Ye

C. Karen Liu

University of Southern California

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D16.

Real-Time Particle-Based Simulation on GPUs

Takahiro Harada Masayuki Tanaka Seiichi Koshizuka

Yoichiro Kawaguchi The University of Tokyo

takahiroharada@iii.u-tokyo.ac.jp

Elastic Objects for the Computer Graphics

Field Using the MPS Method

Masahiro Kondo

Masayuki Tanaka

Takahiro Harada Seiichi Koshizuka

The University of Tokyo kondo@mps.q.t.u-tokyo.ac.jp

E15.

Visual Simulation of Smoke Using

Overlapping Grids

Yoshinori Dobashi

Tsuyoshi Yamamoto

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Poseable Dynamics for Knee-Length Beards

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Environment-Based Physical Motion

for Secondary Characters

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Fluid Flow on Interacting Deformable Surfaces

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F19

Creating Realistic CG Honey

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Simulation of a Pliable Jellyfish in Fluids

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Images

Mapping Normal Vectors and Colors

Onto Kaleidogram

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F02.

Pseudo Expansion of Field of View

for Immersive-Projection Displays

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Histogram-Based HDR Video

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F04. Video Super-Resolution Using

Texton Substitution

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Example-Based Super-Resolution Using

an Internet Photo Collection

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F06.

High-Dynamic-Range Image Capture

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Model-Based Color Manipulation

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Multi-Frame Video Representation Using Feature-Preserving Directional Blur

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Color Correction of High-Dynamic-Range Images

at HDR Level Hyun Jin Yoo

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G01.

Filling Time by Plugging the Holes

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G02.

Video Enhancement Using

Reference Photographs

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GPU-Oriented Light-Field Compression

for Real-Time Streaming

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Vectorization of Gridded Urban Land Use Data Chris Sexton

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Decomposing Non-Rigid Cell Motion Via

Kinematic Skeletonization

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G06.

Light-Source Estimation Using

Segmented HDR Images

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G07.

A Catadioptric Projector System With

Application to Pseudo HDR Display

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From Photographs to Procedural Façade Models

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Animation

F10.

The Basic and General Idea of Motion

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A Method of Melting Snow Animation Using

Mathematical Morphology

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Hair Motion Reconstruction Using a Motion

Capture System Takahito Ishikawa

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Magnetic Motion Capture System Measuring

Movements of Hands and a Body Simultaneously

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Evaluation of Similarity of Motion in Dancing Using Information of Correlation Relationships in Motion

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F16.

Perceptually Valid Facial-Expression Blending

Using Expression Units

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F17.

Global Illumination Using Precomputed Light

Paths for Interactive Light Condition Manipulation

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F18.

Interface Techniques for 3D Control of Spatial Keyframing

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Reactive Episode Control System

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F20.

Speech-Driven Head Motion Synthesis Based on a Trajectory Model

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Behavior Graph for Crowd Simulation

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G11.

Imposing Constraints on Fragmented Body Motion for Synthesis

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G12.

DirectCam: A Gestural System for Animatic Creation

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G13.

Extraction of a Feature of a Word Expressing a Human Motion From Motion Capture Data

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G14.

Nearly Rigid Deformation by Linear Optimization

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G15.

Insect Project **Hung Keung**

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Keyframe Animation Using an Artist's Doll

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G17.

Human Motion Perception: Does Actor Size

Matter in Motion Capture? Pierfrancesco Celada

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Smooth Key Framing Using the Image Plane

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A Compact Representation for Articulated Human

Motion

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G20.

Real-Time Generation of CG and Sound

of Liquid With Bubble

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G21.

Smart Motion Synthesis

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Production

From Movie to Comic, Informed by the

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Interactive City Generation

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Developing Software for Translation of Comic

Strips

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H04.

10,000 Samurais in The War of Sekigahara

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103.

Preference Galleries for Material Design

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Vision

3D Point of Regard and Subject Motion From a Portable Video-based Monocular Eye Tracker

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H06.

Subjective Assessment of Luminance

Compensation for Projected Images

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Camera Motion Estimation in Ocean Scenes

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360-Degrees-Viewable Display of 3D Solid Images

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Wave-Animation Synthesis Directly From A Real Video

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Filling In Stochastic Texture

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Multi-Resolution and Local Search Methods for Optimizing Visual Tracking Processes on GPU Raúl Cabido

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Planar Tracking Using the GPU for Augmented Reality and Games

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Visualization

Identifying and Visualizing Surface Detail on

Michelangelo's David John Rugis

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Photorealistic Facial Reconstruction of Ramses II for Virtual Sets

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D03.

BRDF Display

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D04.

3D Computer Graphics and Diabetes Disease

Understanding

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D05.

GRADE-IV: Visualizing Graphics Library

Operations in an Executing Program

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Tree Model Simplification for Fast Interactive

Rendering

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D07.

A Plane-Based Model of Four-Dimensional

Snowflakes

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Bridging the Resolution Gap: Superimposition of Multiple Multi-Channel Volumes

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E02.

Dyeing Theory Based Liquid Diffusion Model on

Woven Cloth

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State-of-the-Art Rendering Techniques in

Real-Time Architectural Visualization

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Visualizing Many-Particle Astronomical

Simulations

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Daily Life in the Middle Ages - Parma in the

Cathedral Age

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F06.

All About the Data: Effective Visual Pipeline

Management

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F07.

Graphlets: A Method for Visualizing Dynamic Data

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Flattened Anatomy for Interactive Segmentation

and Measurement

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Interactively Mitigating Visual Confusion Through

The Use of a Visual Mixing Board

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Similarity Metrics for Bounding Volumes

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Vision-Space Imaging

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H12.

Real-Time Constructive Solid Geometry

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H₁₃.

Generating Freehand-Style Drawings With SVG

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Global Illumination With Replica-Exchange Monte

Carlo Method Shinya Kitaoka

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Reassembling Ancient Monuments Via

Constrained Registration

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3,000+ Variations of the Voronoi Diagram

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GDPS: Geometric Animation-Based Dynamic

Photo System

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Interaction

H14

The Sound of Touch

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H15.

Freatric Game

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An Electrical Muscle Stimulation Haptic Feedback

for Mixed-Reality Tennis Game

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Persistence and Propagation of Shadow Direction

in Mobile and Multi-Device Graphics

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H18.

Haptic Telexistence

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HECTOR - Scripting-Based VR System Design

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Tangible User Interface for Supporting Disaster

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H21.

inter-glow

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Neurofloat: Real-Time State-Sensitive Brain

Spaces

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Spellbinder: A Medium for Interaction in Branded

City Space

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Tiny Dancing Robots: Display-Based Computing

for Multi-Robot Control Systems

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TimeWarp: An Explorative Outdoor Mixed-Reality

Game

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Meshless Visual and Haptic Interaction From a

Real-Time Depth Image

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Shape and Material Property Modeling

With Haptic Interaction Beom-Chan Lee

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Magic Lens Augmented Reality: Tabletop and Augmentorium

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The Audiator: A Device-Independent Active Marker for Spatially Aware Displays Alex Olwal

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122.

A Touchable 3D Museum With Maximum Usage of Haptics: MuseSpace

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HCI

J01.

Perceptual Interaction of Optical BCI Applications

Kei Utsugi Akiko Obata Hiroki Sato Takusige Katura Kazuhiko Sagara Atsushi Maki Hideaki Koizumi

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J02.

Clay Tone: A Music System Using Clay for User Interaction

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Applying Second Life to a CAVE-Like System for the Elaboration of Interaction Methods With Programmable Interfaces

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J04.

Tangible Search System Using RFID Technology

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Development of a High-Precision Hand Motion Capture System and an Auto-Calibration Method for a Hand Skeleton Model

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J06.

Gazecoppet: Hierarchical Gaze Communication in **Ambient Space**

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J07.

Mamagoto: "Playing" With Food

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AaahCam: A Tool a Small Child Can Use to Capture and Play With Images

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K02.

A Context Visualiser: The Generative Web Site

Project

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A Ball-Type Vibro-Tactile Space Mouse Using One Web Camera

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K04.

The Effect of Using Large High-Resolution Stereoscopic Displays for Flow Visualization

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K06.

Facial Expression Affective State Recognition for Air Traffic Control Automation Concept

Exploration

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Rendering

J10.

Spatial Image-Based Lighting

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J11.

Texturing on Patterned Cloth With Wrinkles in a 2D Illustration

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Interactive Shade Control for Cartoon Animation

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Faster Ray Packets - Triangle Intersection

Through Vertex Culling Alexander Reshetov Intel Corporation Alexander.Reshetov@intel.com

Computational Lighting Reproduction for Facial Live Video With Rigid Facial Motion

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Interactive Rendering of Fenestration Materials for Architectural Design

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J16.

DXRenderFarm: An Xgrid-Based Render Farm for Mava

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Real-Time Rendering of Dynamic Clouds

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J18.

Simple Cellular Texturing for Medieval Castles **Brett Hall**

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Single-Pass Shadow Volumes for Arbitrary Meshes

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Subtle Gaze Direction

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J21.

Interactive Back-Projected Soft Shadows With an Occlusion Camera Shadow Map

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Better Faster Noise With the GPU

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Image Morphing for Space-Time Interpolation Timo Stich

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Noise-Free BSSRDF Rendering on the Cheap

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Fast Rendering of Realistic Faces With Wave-

length-Dependent Normal Maps

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Interactive Rendering of Dynamic Environment

Using PID Control Chee-Kien Gabriyel Wong

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An Optical System for Single-Image Environment

Maps

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K15.

NPR in Production: Animating the Sung Dynasty

Painting, Children at Play

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K16

Multi-Scale Shape Manipulations in Photographs Alexandrina Orzan

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K17.

Extended Diffuse Reflection Model for

Reflectance Estimation

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Real-Time Volume Shading for Deformable Model

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A Low-Cost Test Bed for Light-Field Capture

Experiments

Ashok Veeraraghavan

University of Maryland

Ankit Mohan

Northwestern University ankit@northwestern.edu

Ramesh Raskar

Amit Agrawal

Mitsubishi Electric Research Laboratories (MERL)

Jack Tumblin

Northwestern University

K20.

Fast Approximate Ambient Occlusion

Gilles Cadet

École nationale supérieure de l'aéronautique et de

l'espace

gilles.cadet@supaero.fr

Bernard Lécussan

HPC - SA

Skin Image Rendering by Multi-Resolution Texture

Synthesis Motonori Doi

Osaka Electro-Communication University

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Shoji Tominaga

Chiba University

Image-Based Particle Emission

Jaakko Konttinen Sumanta Pattanaik

Charles E. Hughes University of Central Florida

jaakko@gmail.com

K23.

4D View Synthesis: Navigating Through Time

and Space

Mingxuan Sun **Grant Schindler**

Georgia Institute of Technology

cynthia@cc.gatech.edu

Sing Bing Kang

Microsoft Research

Frank Dellaert Georgia Institute of Technology ► Location Room 8 and 9 ▶ Days & Hours Wednesday, 8 August Thursday, 9 August

8:30 am - 5:30 pm 8:30 am - 5:30 pm

Educators Program

Sessions and sharing that augment the quality of curricula, improve student learning, and inspire others to adopt the lifelong pursuit of advancing education, technology, and culture. Educators Program offerings are formal (papers, panels, workshops, QuickTakes, and forums) and informal opportunities to reinforce the teaching-learning community's inspiration and commitment.

Educators Program Committee

Educators Program Chair Janese Swanson The Art Apprentice

Educators Program Committee Rick Barry Pratt Institute

Patricia Beckmann-Wells

DreamWorks Animation SKG

Fred Bunting PDI/DreamWorks

Susan Gold International Game Developer's Association

Maria C.R. Harrington University of Pittsburgh

Paula Hindman
Piedmont Community College

Brian Immel PDI/DreamWorks

William Joel
Western Connecticut State University

Educators Program Activities & Events

Pioneer Mentor Program

Fifteen students from the The San Diego County Regional Occupational Program will be selected to attend SIGGRAPH 2007. Students will be paired with mentors to learn more about the conference and the history and direction of computer graphics. Students are required to write a one- or two-page summary of their experiences at the conference.

Guerilla Studio

Room 16 AB and 15 AB

A select group of local elementary-school students and senior citizens will attend a special experience at the Guerilla Studio on Tuesday, 7 August at 9:45 am. Featured fun includes both The Lenticular and Animation areas of the Guerilla Studio!

CLICKS

Room 6 Lobby

Educators throughout San Diego County have worked tirelessly to incorporate isteNETS into a comprehensive educational program to provide students with the technology literacy they need to be skilled, functioning participants in an everchanging global society. The innovative CLICKS to LEARN! interactive program has totally revolutionized acquisition of isteNETS Technology

Foundation Standards for all of the district's elementary students, instructional teaching staff, and parents.

iVIE Awards Display

Room 6 Lobby

The award winners from this year's iVIE Festival of videos produced by students (K-12) and teachers in the San Diego public schools. Shown each day throughout at SIGGRAPH 2007, the winners are outstanding examples of videos in 10 categories: animation, math and science, language arts, humanities, social issues, broadcast journalism, public-service announcements, documentaries, visual and performing arts, and interactive media.

iVIE Contact Becky Goel bgoehl@sdcoe.net

The Sage Canyon Wheels on the Bus Exhibit

Hall D Lobby

A collection of about 500 multimedia works by elementary-school (kindergarten through sixth grade). The work is an example of collaborative teaching and integration of technology throughout the curriculum, as required by California grade-level standards. The exhibit song was produced and recorded by Mani Music and JH Productions, and performed by John Hughes.

8:30 - 9:30 am

Educators Ramp In & Space-Time Awards Room 8

9:30- 10:15 am QuickTake

Fizzees (Physical Electronic Energisers) Room 8

A prototype project that enables young people (ages 10 and 11) to care for a digital pet through their own physical actions. In order to nurture their digital pet and keep it healthy and growing, children must themselves act in physically healthy ways.

Fizzees encourages them to undertake greater amounts of physical activity whilst developing a better understanding of the constituent parts of a healthy lifestyle. It uses a dual sensor device that measures heart rate and accelerometer data, and a scoring system that equates the maturation process of the digital pet with the recommended levels (and types) of physical activity for young people. In addition to the wearable technology, a web site gives children an opportunity to compare their Fizzee with others and explore other aspects of healthy lifestyles, such as healthy eating.

Hans Daanen

Futurelab hans.daanen@futurelab.org.uk

9:30- 10:15 am QuickTake

Fountaineers Room 8

Together, Futurelab, Stakeholder Design, and Luckwell Primary School are designing a programmable and interactive fountain that will be built on the schoolground. Luckwell students will own the fountain; decide how it is used; program it; and organize its use, management, and maintenance. The fountain will become part of everyday school life and a powerful resource. Children will increasingly direct their own learning and continue to invent ever more creative ways of using it.

As debate continues about what a 21st-century education should look like, and the UK earmarks £45 billion for the Building Schools for the Future programme, Fountaineers aims to demonstrate that children and teachers have enormous influence over reconfiguration of their buildings and outdoor spaces, and great potential to use the environment to model new

learning habits and more adventurous, curiousmindsets.

Hans Daanen

Futurelab hans.daanen@futurelab.org.uk

9:30 - 10 am Paper

Rethinking Graphics and Gaming Courses Because of Fast Ray Tracing Room 9

Most current games are implemented using the graphics processing units (GPUs) found on almost every PC. These GPUs use the z-buffer algorithm to do visibility calculations. Ray tracing, an alternative to the z-buffer algorithm, delivers higher visual quality than the z-buffer algorithm but has historically been too slow for interactive use.

Recent hardware improvements have enhanced ray tracing's speed and utility, and many believe that it will replace the z-buffer algorithm as the visibility engine in games. If that happens, it will imply fundamental changes in both the API and capabilities of 3D graphics engines. This paper discusses the implications for games and graphics-oriented classes if and when this switch to ray tracing occurs.

Kelvin Sung

University of Washington Bothell Ksung@u.washington.edu

Peter Shirley Erik Brunvand Alan Davis Steven Parker Solomon Boulos University of Utah

10 - 10:15 am Paper

Active Learning to Interactive Design: The Rise of Web Rich Media to Engage Art Dialogue Room 9

Educators now use Flash as their standard client to deliver effective rich-media interactions not only for online courses, but also for in-classroom settings. This paper fosters creation of interactive Flash movies to engage e-learning in art for all ages. Based on interactive learning and teaching theory, the paper presents tips, best practices, common mistakes, and misconceptions about applying technology to deliver successful curriculum. It also examines the skill sets and knowledge bases that empower authoring tools in interface design, course

architecture development, and reusability of online assessment. After the presentation, an open dialogue focuses on sharing insights about how to rethink the impact of interactive learning and how human factors will influence the future of interactive education

Mei-Fen Chen

Robert Morris College

10:30 - 11 am Paper

Critters in the Classroom: A 3D Computer-Game-Like Tool for Teaching Programming to Computer Animation Students Room 8

A discussion of 3D computer game technology employed in a game-like tool for teaching computer programming. The paper presents examples of how this can be exploited to provide engaging exercises to create a rewarding learning experience for students.

Eike Falk Anderson

NCCA Bournemouth University Eanderson@bournemouth.ac.uk

Leigh McLoughlin

NCCA Bournemouth University

10:30 - 11 am Paper

Web With Art and Computer Science Room 9

This paper describes the integrative, cooperative instruction in programming that applies art to technical instruction. Students work in an interdisciplinary style, drawing upon concepts from programming, web design, computer graphics, art, and design, in an interdisciplinary-studies format and in a web-design class. The presentation includes examples of student work.

Anna Ursyn

University of Northern Colorado ursvn@unco.edu

Terry Scott

University of Northern Colorado

11 - 11:30 am

Paper

An Interactive Interface: Animated Sign Language, Self-Learning With Fun Room 9

Learning sign language can be time-consuming, confusing, and boring. This self-learning tool combines a web site and online software to offer learners an interactive, animated sign-language sequence of the words they type. Like a chat browser, it empowers people with disabilities to enjoy their interactive learning experience. It also demonstrates how humancomputer interaction can strengthen awareness of computers among people with hearing and speaking disabilities.

Bipin Bagravat

Motionsonique agravatb@yahoo.com

11 am - 12:15 pm

QuickTake

Remix and Robo: Controllers for Performative Play With Robotic Building Toys Room 8

Two sampler/sequencer controllers that allow children to engage in storytelling and competitive endeavors with a modular robotic toy. The controllers are based on Topobo, a constructive assembly system with kinetic memory that features the ability to record and playback physical

Remix is a tangible interface used to sample, organize, and manipulate several kinetic records. Robo is a modified game controller used to capture robotic motions, adjust global motion parameters, and execute kinetic recordings in real-time.

Hayes Raffle

Massachusetts Institute of Technology Media Lab haves@media.mit.edu

11 am - 12:15 pm

QuickTake

Jabberstamp: Embedding Sound and Voice in Traditional Drawings Room 8

The first tool that allows children to synthesize their drawings and voices. To use Jabberstamp, children create drawings, collages, or paintings

on normal paper, then press a special rubber stamp onto the page to record sounds into their drawings. When children touch the stamped image with a small trumpet, they can hear the sounds retell the stories they have created.

Children four years of age and older can use Jabberstamp to embed names, narratives, characters, voices, and environmental sound effects in their original drawings. Their compositions help them communicate their stories to peers and adults, and allow them to record and situate stories in personally meaningful contexts to share with others, before they have mastered

Haves Raffle

Massachusetts Institute of Technology Media Lab hayes@media.mit.edu

Cati Vaucelle

Massachusetts Institute of Technology Media Lab

11:30 am - 12:15 pm

QuickTake

Interactive Multimedia Oral Language Instruction for At-Risk Students Room 9

This presentation introduces an interactive-multimedia program designed to teach oral language skills and discusses research data that demonstrates its effectiveness. The software applies post-production compositing of videos with embedded alpha channels to demonstrate various skills. Flash animation is used to enhance the software, particularly in the interactive practice activities that students use to review content. The system also includes a coded tracking system to monitor the user's progress and guizzes to evaluate the user's knowledge throughout the program.

Tools used to develop this project: Flash Professional 8.0, Adobe Photoshop, Pro Tools LE, Final Cut Pro, Sorenson Squeeze, and Bryce.

Jerry Ann Dowdle

Edge Enterprises, Inc. Jdowdle@edgeenterprisesinc.com

Sue Vernon

Edge Enterprises, Inc.

11:30 am - 12:15 pm

QuickTake

Interactive Gaming Tools to Help Illiterate and Disabled People Acquire Mouse Control

One-third of the world's non-literate people live in India. Teaching them how to use a computer or interactive kiosk is a very difficult challenge for both the instructor and the learner. Before they can begin to understand the machine's functions and benefits, they must first learn to control the mouse, synchronize its movement with the cursor's movement on the screen, and click or double click to request responses.

This presentation shows how a simple, effective, enjoyable game or interface can overcome these problems and help illiterate and disabled users acquire mouse control.

Bipin Bagravat

Motionsoniaue agravatb@vahoo.com

1:30 - 2 pm

Paper

SMILE: An Immersive Learning Game for Deaf and Hearing Children Room 9

This paper describes implementation and evaluation of the second iteration of SMILE (Science and Math in an Immersive Learning Environment), an immersive learning game that employs a fantasy 3D virtual environment to engage deaf and hearing children in math and science-based educational tasks. The second iteration improves learning and enjoyment by combining strategies used in commercial computer games with lessons from educational research on learning and motivation. A user study assessed the game's usability and appeal.

SMILE is the first bilingual, immersive virtual learning environment for deaf and hearing students that combines key elements of successful computer games, emotionally appealing graphics, and realistic real-time 3D signing with goal-oriented, standards-based learning activities that are grounded in research on effective pedagogy.

Nicoletta Adamo-Villani

Purdue University Nadamovi@purdue.edu

Kelly Wright

Purdue University

1:30 - 2 pm

Paper

Artbotics: Community-Based Collaborative Art and Technology Education Room 8

A collaboration between artists and computer scientists that uses robotics technologies to teach computer science and art to undergraduates and high school students. Through a partnership with a local museum, project-based courses culminate in public exhibitions, and the learning outcomes are presented to the entire community. Collaborators work closely to design various levels of curriculum including the afterschool program for local high school students and the service-learning interdisciplinary course for undergraduate students.

The presentation describes the formation and progress of the collaboration, introduces various levels of curriculum development, shares the technology used, and summarizes the outcomes of the program.

Hvun Ju Kim

University of Massachusetts Lowell hjkim@hyunjukim.com

Holly A. Yanco Fred G. Martin Linda Silka

University of Massachusetts Lowell

2 - 3 pm

QuickTake

The Animatronics Workshop Room 8

An after-school activity in which middle schoolers create complete theme-park-style, robotic shows. Development began with simple hand puppets with individual personalities and motions. The students then machined simple motorized aluminum skeletons using kid-friendly hand tools. They also designed a stage and various props. A script was created based on suggestions from the kids, and auditions were held for the speaking roles. The actors were recorded separately, and various sound effects and background music were added. Finally, the kids programmed the motions for their characters. The result is a uniquely interdisciplinary project that teaches kids how to combine deep technical and creative skills to achieve a desired result.

Paul H. Dietz

Animatronics Workshop Paul@animatronicsworkshop.com Catherine Dietz

Animatronics Workshop

Alexander Dietz Olivia Dietz

Hopkinton Middle School

2 - 3 pm

Paper

3D Computer Visualization and Animation in Clinical Care Room 9

The School of Media Arts & Imaging in collaboration with the School of Medicine at Dundee University is exploring how newly created medical 3D visualizations can facilitate mediation and interaction between the disciplines of computer animation and clinical research.

Three-dimensional technologies are transforming the way in which medical images are created, but what are the implications for education and future computer animators? This paper explores how postgraduate students, researchers, educators, clinicians, and patients are collaborating to improve interaction and communication in clinical care.

Steven Flack

University of Dundee s.r.flack@dundee.ac.uk

2 - 3 pm

A Graduate-Level Course on Real-Time Medical Graphics Room 9

Medical issues often generate interest in computers and their benefits, because individuals have so much to gain from computer-supported diagnoses. This course works with a heart and diabetes center that uses PET as an imaging method to detect coronary heart disease, a diagnosis that, until recently, was mainly performed with invasive methods.

Teaching students medical graphics will enhance the tools and knowledge required to support better and faster work in hospitals.

Gitta Domik

Universität Paderborn domik@uni-paderborn.de

3 - 3:30 pm

QuickTake

Developing Educational Virtual Worlds With Game Engines Room 8

Game engines are often overlooked in explorations of virtual worlds technologies. From firstperson shooters and head-to-head death-match play to full-blown massively multiplayer online role-playing games, videogames have a lot in common with virtual worlds. Modifying games as well as authoring engines and toolkits not only creates a new opportunity for the educator but also allows them to dip into a well-supported and well-populated world of creative energy, talent, and help. Also, because educators are not the primary audience for the gaming industry, many game companies are eager to work with educators, and some are very generous with their licensing. The educator's task is to repurpose these tools for pedagogical requirements.

This presentation outlines some of the challenges, applications, and current results in educational virtual worlds development at Case Western Reserve University.

Jared Bendis

Case Western Reserve University Jaredjared@earthlink.net

3 - 3:30 pm

QuickTake

Inventing a Collaborative Full-Dome Production Course Room 9

ARTS Lab at the University of New Mexico is now offering the world's first full-semester course in production techniques for digital multiprojector, hemispheric, immersive full-dome theaters. Developed for students from visual arts and design as well as gaming and scientific visualization, the full-dome course requires students to work in collaborative teams to produce short large-format, immersive digital works. Participants have included university students as well as visiting artists and high school students. Each semester ends with a student screening at the LodeStar Astronomy Center in the New Mexico Museum of Natural History and Science. Student projects have ranged from domed tetris blocks to intriguing artistic abstractions and an interactive domed pong game.

Hue Walker

ARTS Lab, University of New Mexico huebk@unm.edu

3:45 - 4 pm

QuickTake

Red Hat High: Using Open Source Software in a Technology Camp Room 8

In 2006 and 2007, 50 8th- and 9th-grade students attended a week-long residential technology summer camp at North Carolina State University. Named for the program's initiator, Red Hat High's mission was to expose students to technology and software that they otherwise might not be aware of. Using open source software, students were introduced to audio creation, video creation, 3D modeling and animation, and web design. Because the work was done with freely available open source applications, students could continue working and learning after the camp was over and share their tools and projects with their peers at home.

This presentation covers the specific software used, some of the challenges that such a camp presents, and presents some of the outstanding work produced by Red Hat High students.

Jason van Gumster

Hand Turkey Studios iason@handturkevstudios.com

3:45 - 4 pm

Paper

Collaboration and Dialogue: Video as an Agent in Extending and Enriching Learning and Writing Room 8

Imagine reading student papers in which you can watch short video clips that encapsulate their exploration of ideas, critiques of their own work, peers' critiques, and reflection. Multimedia technology enhances writing with sounds and moving images to provide multiple options for expression, idea development, and reflection. This presentation explores the use of video to facilitate the collaborative learning process as an integrated extension of writing. It includes an example of a video-embedded paper.

Christine L. Liao

The Pennsylvania State University cll212@psu.edu

3:45 - 4:15 pm

Paper

Enhance Science Learning With Art Assignments

This paper describes a novel approach to cooperative, integrative instruction in science and examines the effect of non-restrained, spontaneous creation of sketches, versus writings, on the effectiveness of student learning.

Anna Ursyn

University of Northern Colorado, School of Art and Design Ursvn@unco.edu

Ruwang Sung

University of Northern Colorado, School of Health and Natural Science

4 - 4:30 pm

Paper

Space Mission: Ice Moon Room 8

A multimedia web site with videoconferencing that supports a role-playing activity for Key Stage 3 (11-16) science students. The project puts pupils in the roles of scientific experts in an Emergency Response Team after a space disaster. Working in five teams, 18 to 30 pupils have to manage and oversee the rescue of four astronauts who have become lost in ice tunnels on Jupiter's moon Europa. They must use and develop all their skills as scientists, mathematicians, planetary geographers, and communicators. The role of Mission Commander is played by a facilitator.

The overarching aim of the project is to support the vision and goals of the 21st Century Science curriculum by enabling students to work as scientists and engage with ideas that will enable them to be scientifically literate and well-informed consumers of science.

Hans Daanen

Futurelab hans.daanen@futurelab.org.uk

4:15 - 5 pm

Paper

Play to Learn II: Designing **Educational Games** for Museums Room 9

This sequel to the SIGGRAPH 2006 Educators Paper, Play to Learn: Exploring Educational Games in Museums, provides further discussion on how to design educational games for the museum context, based on numerous followup inquiries from non-museum professionals. This paper hopes to help commercial gaming developers extend their skills and expertise in order to produce learning games through which children can learn more about museum objects and exhibits. It hopes to enhance understanding of how to embed learning outcomes in the gaming design process. And it summarizes the challenges associated with creating these games: graphic design, narration, scripting, character development, and design of the learning sequences. Most importantly, this paper discusses educational game design from the perspective of a museum educator.

Herminia Wei-Hsin Din

University of Alaska Anchorage hdin@uaa alaska edu

4:30 - 5 pm

Paper

RSS as a Course Information-**Delivery Method** Room 8

As social networking and collective intelligence become primary facilitators of course information, technology has changed the way students interact with instructors. One such method emerging with each new web creation is the integration of really simple syndication (RSS). Although RSS came about in the 1990s, it is only in recent years that it has taken on a form of delivery that can easily be applied to the classroom.

This presentation details a study in which RSS was implemented into a freshman-level course as a method of distributing course announcements. It also summarizes findings that influence the usefulness and effectiveness of RSS in the classroom.

Ronald J. Glotzbach

Purdue University Riglotzbach@purdue.edu

James L. Mohler

Purdue University

Jaime E. Radwan Incredible Technologies

5 - 5:30 pm

Paper

SoundScapes: Non-Formal Learning Potentials From Interactive VEs Room 8

SoundScapes utilises various non-invasive sensor technologies to enable intuitive interaction with 3D natural gestures mapped to multisensory virtual environments. Today, this technique is not new, but in 1987 when the work began, it synthesized performance art with human performance therapy for the first time and created a new means of expression. Over the years, SoundScapes evolved to become a new platform for interdisciplinary research, knowledge exchange, and product development. Digital artists are exploring the growing use of real-time interactive multimedia technologies in therapy. New training methods are evolving alongside advances in technologies. Eight patents have been awarded to SoundScapes applications.

This paper summarizes the platform and its evolution, including its application in Olympic cultural events in 1996 and 2000, at New York NewWave 1999, and in European Cultural Capital events in 1996 and 2000.

Anthony L Brooks

Aalborg Universitet Esbjerg Tonybrooks@aaue.dk

Eva I Petersson

Aalborg Universitet Esbjerg

Thursday, 9 August

8:30 - 9:30 am

Panel

Tov Panel Room 8

An interactive panel discussion on five QuickTake presentations:

- Remix and Robo: Controllers for Performative Play With Robotic Building Toys
- Jabberstamp: Embedding Sound and Voice in Traditional Drawings
- Fizzees (Physical Electronic Energisers)
- **Fountaineers**
- The Animatronics Workshop

9:30 - 10:15 am

Paper

Visualizing the Origins of Life

How did life evolve on earth, and what form did it take? Biochemists at Harvard University are delving into this question in part by using molecular clues in our own cells. At a molecular level, all cells, from bacteria to human cells, share a system of storing genetic information through nucleic acids, such as DNA and RNA, which is then used to carry out processes essential for growth. The first living cell probably evolved this system from simple chemical compounds.

This project, funded by the National Science Foundation, uses molecular animation to illustrate the leading theories on how life evolved. The presenter, a biochemist by training, also discusses the technical and aesthetic challenges of designing animations that accurately portray events at the molecular scale. The animations are designed for exhibits at the Boston Museum of Science and technical scientific presentations.

Janet Iwasa

Harvard University, Massachusetts General Hospital jiwasa@gmail.com

9:30 - 10:15 am

Paper

MobiMissions Room 8

A mobile phone game and based on the concept of creating missions, dropping them off into particular locations for other people to find, picking them up, and moving them around. Players can create a mission on their mobile phone and attach information (a question, a challenge, or an observation) and content (such as pictures and sound files). When a mission has been created, players can drop it from their phones into their current phone cell location, where it will remain until discovered by another player. Other players use their phones to search the cell they're in, and after reviewing the list of available missions, pick up one or more to

carry with them on their phones. They can then respond to the mission until they drop it off again, perhaps in a different cell. In this way, missions can move from place to place, evolving as they go.

Hans Daanen

Futurelab hans.daanen@futurelab.org.uk

9:30 - 10:15 am

Forum

Student Demo Reels Room 9

A distinguished group of computer-animation professionals discusses (and illustrates by example) what they look for when reviewing demo tapes and portfolios of recent college graduates. The session addresses such topics as what to include and what not to include in demo reels, what length and what format the reel should be, audio for the demo reel, and issues in the job-application process.

Art Durinski

Otis College of Art and Design durinski@otis.edu

10:30 - 11 am

QuickTake

A GPU Shader Programming Workshop Room 8

Shader programming is fast becoming an essential skill for computer graphics students. Using shaders, programmers have the flexibility to perform amazing vertex-by-vertex and pixelby-pixel effects, and they use parallel-processor performance to apply shaders in interactive graphics applications. Because shader programming is new, experience with teaching it is scarce. As part of a university class, this project developed a hands-on program called glman, which allows students to write a shader scenedescription file that automatically creates a 3D scene and an interactive user interface to adjust shader parameters. The program creates a fast and fun learning curve for students.

In this hands-on workshop, attendees have access to the glman software, documentation, class notes, and many example files. The workshop offers a shortcut to educators who want to offer similar courses at their own institutions.

Mike Bailey

Oregon State University mib@cs.oregonstate.edu

Steve Cunningham Grinnell College

10:30 - 11:30 am

Forum

Undergraduate Research Projects Room 9

The nature of computer graphics is such that students at all levels need exposure to research opportunities to better hone their skills. This forum allows attendees to hear and discuss ideas concerning undergraduate computer graphics research, including appropriate subjects for undergraduates and institutional support.

Beginning with SIGGRAPH 2003, a Birds of a Feather session has been held to explore these and other related issues. This forum is an offshoot of those sessions and the SIGGRAPH Education Committee's addition of undergraduate research to its list of initiatives.

William J. Joel

Western Connecticut State University joelw@wcsu.edu

11 - 11:30 am

Paper

Rear Window Redux: Learning From the Architecture in Hitchcock's Film Using 3D Modeling and Animation Room 8

In university architectural programs, the study of existing buildings is an essential, traditional component of the educational process. In this project, an upper-level architectural design studio applied the copying-to-learn concept with a twist. Instead of a built work, the students were asked to look at the set of Alfred Hitchcock's 1954 film, "Rear Window." The set was modeled in 3D, and a scene from the film was animated. After copying the existing work in this new medium, students were asked to redesign the set for a 2006 remake of the film and create an animated scene. The objective of the project was to understand how Hitchcock used architecture to support the ideas in the film, how filmmaking techniques expressed that architecture, and application of these ideas to the students' own architectural set design.

Matthew Knox

Kansas State University mknox@ksu.edu

11:30 am - noon

Paper

Lessons Learned From an ARTS/CS Game-Design Collaboration Room 8

This paper describes the first iteration of a game-design collaboration between ARTS (modeling in Maya) and CS (scripting the Torque Game Engine). The missteps of the collaboration are chronicled and a list is provided of the lessons learned to create a successful collaboration. The paper includes specifications for developing textured game models with animations.

Torben Lorenzen

Bridgewater State College Lorenzen@Bridgew.edu

11:30 am - noon

QuickTake

openPipeline: Teaching Animation Production Pipelines in the Arts Context Room 9

openPipeline is an open-source, community developed, production pipeline framework intended for use on small independent animation projects and, most effectively, student films. In addition to its contribution to animation production, it offers a way to demonstrate and implement production pipeline design and use in an animation curriculum. Asset management, revision control, collaborative notation, and scene population (common ideas in commercial production environments) are not commonly applied in the pedagogy of animation, though they are equally crucial in that context. As more academic programs and small production studios evolve the framework and use the associated implementations, a larger community will develop around openPipeline.

Rob O'Neill

Pratt Institute Digital Arts Research Lab roneill@dal.pratt.edu

Paris Mavroidis

Pratt Institute Digital Arts Research Lab

Meng-Han Ho

Pratt Institute

noon- 12:15 pm

QuickTake

Designing a Portable High-Definition Stereoscopic Camera System for Capturing Cultural Content Room 8

Part of the Cleveland Museum of Art's expansion project is an 84-seat docent-controlled, immersive virtual reality, and advanced distance-learning theater for presenting art, historical, and cultural content as well as multi-site live

experiences. One of the challenges is in creating high quality cultural content. This presentation outlines one of the challenges associated with collecting and presenting such content: design and use of a high-definition stereoscopic camera system that is both portable and built from off-the-shelf components.

Jared Bendis

The Cleveland Museum of Art jaredjared@earthlink.net

1:30 - 2 pm

Paper

Team-Based Pedagogy for Object-Oriented Game Design

Computer science teachers often struggle with design programming assignments that both introduce students to object-oriented design and provide meaningful opportunities for students to develop object-oriented programming skills. As a result, teachers seek creative alternatives for educating the next generation of computer scientists.

Using the context of game design, this project identified a team-based pedagogical strategy to help students understand object-oriented design principles. Team-based pedagogy includes a well-defined rubric, application-focused team programming assignments, software development tools, and built-in incentives for individual and team learning. The project extended Microsoft's Flight Simulator X-game platform as a software development tool for team programning assignments that reinforce object-oriented game design. It also developed team-based learning tools that promote social interactions as part of the learning process.

This presentation summarizes the results and proposes a method for evaluating team-based pedagogy applicable to computer programming courses that influence positive learning outcomes for students.

Yolanda Rankin

Northwestern University Yrankin@northwestern.edu

Tom Lechner

Northwestern University

Bruce Gooch

University of Victoria

1:30 - 3 pm

Workshop

So You Want to Start a Game Program? IGDA Education SIG presents the Curriculum Framework Initiative & Curricular Room 9

Though the field of game studies is young, the number and variety of game-related educational institutions is already vast, and no single curriculum can apply to them all. In 2003, the International Game Developer's Association (IGDA) held an Academic Summit in which members of the videogame industry and academic specialists worked together on curriculum recommendations. The summit developed a framework based on a modular approach, rather than a single detailed curriculum.

As a practical document, the framework is designed to assist educators and students on a variety of levels, from creation of individual courses to development of full degree programs, within a single department or across several. It is also a guide for students who are creating individualized courses of study at institutions that do not offer game-related majors.

The IGDA Education SIG's mission is to create community resources that will strengthen the academic membership of the IGDA while enhancing the education of future and current game developers. The main goal of this workshop is to discuss and present the current recommendations of the IGDA Curriculum Framework. Because the Education SIG is in the process of updating the framework, the discussion will emphasize the fundamentals that need to be included in any successful program.

Susan Gold

IGDA Education SIG Chair

Tracy Fullerton Magy Seif El-Nasr

IGDA Education SIG Curriculum Initiative

2 - 2:30 pm

Paper

Agora: A Collaborative Virtual Learning Environment Room 8

In 2007, the Canadian Heritage Information Network launched Agora: The VMC Learning Centre. This pilot project aims to position Canadian museum content as an essential part of today's elementary and secondary classrooms. Using wikis, blogs, web conferencing, a unique content-aggregation tool, and other technologies, Agora provides teachers with online learning tools and encourages knowledge sharing between museum educators and students.

This paper discusses the intention of the project from inception to pilot release and future phases. It explores the design and policy decisions that addressed the many challenges associated with working in a public-sector environment and emphasizes the importance of these decisions in creating an accessible, open, and collaborative educational environment that is ripe with authoritative content.

Corey Timpson

Canadian Heritage Information Network corey_timpson@pch.gc.ca

Valérie Chartrand

Canadian Heritage Information Network

2:30 - 3:15 pm

Paper

Integrating Digital Art Practice and Art History Studies Room 8

Many professionals in the digital art and design industry emphasize the importance of classical art skills and knowledge as the foundation of digital artists. But this approach may not be sufficient to bridge the gap between traditional art theory and contemporary studio work practice for students who want to be information designers, computer artists, or technical directors. This paper is based on an introductory-level lesson plan for university students. Students are asked to make drawings focused on relationships such as those between mythology and character design, abstract art and digital painting, Japanese traditional picture scroll and character storytelling, and so on. Results indicate that students begin to understand theories of visual art more easily by participating in hands-on exercises rather than simply listening to lectures.

Tomoko Hatanaka

Takushoku University Hatanakatomoko@nifty.com 2:30 - 3:15 pm

Paper

What is "Computer Animation?" Examining Technological Advancements and Cultural Aesthetics of Japanese Animation Room 8

This paper examines three current narratives of computer animation in the United States:

- · The ideology driven by the search for a perfect representation of reality
- The mythology based on the modernist paradigm of progression
- The hegemony established by a habitual mode of production.

By investigating current computer animation in the United States and Japan, the paper argues that in different socio-cultural contexts, computer animation acquires different cultural meanings and styles, and re-constitutes a specific cultural aesthetic for the society in which it resides. By examining "Final Fantasy VII: Advent Children" (2005), it identifies divergent perceptions through which computer animation acquires its cultural meaning and aesthetics: the hyper-spectacle embedded in a superflat culture and the tradition of contingency.

Lien F Shen

Ball State University lshen@bsu.edu

3:30 - 5:15 pm

ACM Education Committee Forum Room 9

5:15 - 5:30 pm

Ramp Out Room 9

► Location Rooms 20 A-D Days & Hours

Sunday, 5 August Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August 1 - 6 pm 9 am - 7 pm 9 am - 6 pm 9 am - 6 pm 9 am - 3:30 pm

Art Gallery: Global Eyes

Artwork that expands awareness of people and nature. Illuminates the role digital media play in shaping, extending, and reflecting world views and cosmologies. Explores ecological, social, and political issues in imaginative and innovative ways. And fosters respect, tolerance, and empathy among people and nations. The SIGGRAPH 2007 Art Gallery is collaborating with ISAST Leonardo to build bridges between people working creatively in art, science, and technology all around the world.

Art Gallery Jury & Committee

Art Gallery: Global Eyes Chair

Vibeke Sorensen

University at Buffalo New York, USA

Art Gallery: Global Eyes Associate Chair and Travelling Art Show Chair

Lina Yamaguchi

Stanford University California, USA

Art Gallery: Global Eyes Jury

Heitor Capuzzo

Universidade Federal de Minas Gerais Minas Gerais, Brazil

Sue Gollifer

University of Brighton United Kingdom

Francisco Marinho

Universidade Federal de Minas Gerais Minas Gerais, Brazil

Victoria Szabo

Duke University North Carolina, USA

Cristina Venegas

University of California, Santa Barbara California, USA

Ruth G. West

University of California, San Diego California, USA Jana Whittington

Purdue University Calumet Indiana, USA

Shahrokh Yadegari

University of California, San Diego California, USA

Art Gallery: Global Eyes Committee at SIGGRAPH 2007

Robert Epp

University of Manitoba Manitoba, Canada

Heitor Capuzzo

Universidade Federal de Minas Gerais Minas Gerais, Brazil

Sue Gollifer

University of Brighton Brighton, United Kingdom

Francisco Marinho

Universidade Federal de Minas Gerais Minas Gerais, Brazil

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Video Technology Subcommittee Chair

Purdue University Indiana, USA

Shahrokh Yadegari

Performance Subcommittee Chair University of California, San Diego California, USA

Goldie Chaudhuri

XSV Ex-Student Volunteer

Art Gallery: Global Eyes Online Jury

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Brunel University United Kingdom

Marc Böhlen

University at Buffalo, Universität Zürich AILAB New York, USA; Switzerland

Paul Brown

University of Sussex United Kingdom

Patricia Clark

Arizona State University Arizona, USA

Beatriz da Costa

University of California, Irvine California, USA

Janeann Dill

University of Alabama Alabama, USA

Art Gallery Jury & Committee (Continued)

Sarah Drury

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Heather Elliott-Famularo

Bowling Green State University Ohio, USA

Cliff Eyland

University of Manitoba Manitoba, Canada

Gregory Garvey

Quinnipiac University Connecticut, USA

Phillip George

University of New South Wales New South Wales, Australia

Taraneh Hemami

California College of the Arts California, USA

Paul Hertz

Northwestern University Illinois, USA

Erkki Huhtamo

University of California, Los Angeles California, USA

Masa Inakage

Keio University Japan

Lisa Jevbratt

University of California, Santa Barbara California, USA

Philip Mallory Jones

Ohio University Ohio, USA

Kristy Kang

University of Southern California California, USA

Linda Lauro-Lazin

Pratt Institute New York, USA

Shawn Lawson

Rensselaer Polytechnic Institute New York, USA

George Lewis

Columbia University New York, USA

Richard Loveless

Global Connections: Art and Technology Consulting Services Arizona. USA

Bonnie Mitchell

Bowling Green State University Ohio, USA

Barbara Mones

University of Washington, University of Canterbury USA; United Kingdom

Catherine Richards

University of Ottawa Ontario, Canada

Christiane Robbins

University of Southern California/Jetztzeit Studios California, USA

Michael Scroggins

California Institute of the Arts California, USA

Bill Seaman

Rhode Island School of Design Rhode Island, USA

Mark Shepard

University at Buffalo New York, USA

Agueda Simó

Universidade da Beira Interior Portugal

LiQin Tan

Rutgers University New Jersery, USA

Bill Tomlinson

University of California, Irvine California, USA

Eduardo Villanueva

Pontificia Universidad Católica del Perú Perú

Stephen Wilson

San Francisco State University California, USA

Walter Wright

119 Gallery Massachusetts, USA

Art Gallery: Global Eyes Administrative Support

Angela Anderson Laurie Schall

Talley Management Group, Inc.

Special Performance Weekend Saturday, 4 August – Monday, 6 August

Art Gallery digital performances and site-specific installations are presented at the California Institute for Telecommunications and Information Technology (Calit2) and the Center for Research in Computing and the Arts (CRCA) at the University of California, San Diego. SIGGRAPH 2007 shuttle bus service is available for round-trip transportation from the San Diego Convention Center, Hall B Lobby to the performance venues.

Installations

Chiara Boeri

METROBOSCO: More Than a Green Belt for a City Art Gallery, Atkinson Hall, UCSD

Yoichiro Kawaguchi

Hydrodynamics Ocean Art Gallery, Atkinson Hall, UCSD

Daria Tsoupikova

Rutopia 2 CRCA Studio 1607, Atkinson Hall, UCSD

Noah Wardrip-Fruin

Screen

Immersive Visualization Lab (IVL), Atkinson Hall, UCSD

Ruth G. West

ATLAS in Silico

Immersive Visualization Lab (IVL), Atkinson Hall, UCSD

Digital Performance Schedule Saturday, 4 August

5 - 7:15 pm

Substitute Judgment; e*scapes; Walking into a Leonardo Masterpiece; Takashi's Seasons; Autopoiesis/Mimesis Calit2 Auditorium, Atkinson Hall, UCSD

7:30 - 8 pm

What If I am Not Real CRCA Studio 1613, Atkinson Hall, UCSD

8 - 10 pm

Visual Music Marathon Calit2 Theater, Atkinson Hall, UCSD

Sunday, 5 August

11 am - noon

Dynamic Spaces Calit2 Auditorium, Atkinson Hall, UCSD

noon - 12:30 pm

What If I am Not Real CRCA Studio 1613, Atkinson Hall, UCSD

2 -4 pm

Rage to Know; Rhyme of Tang Dynasty; Bibigi; Imago; Performing Arts for the Future Mobile Generation Calit2 Theater, Atkinson Hall, UCSD

4 - 4:30 pm

What If I am Not Real CRCA Studio 1613, Atkinson Hall, UCSD

5-7 pm

e*scapes: Substitute Judgment: Performing Arts for the Future Mobile Generation; Autopoiesis/Mimesis Calit2 Auditorium, Atkinson Hall, UCSD

7-9 pm

Visual Music Marathon Calit2 Theater, Atkinson Hall, UCSD

Monday, 6 August

11 am - 1 pm

Rage to Know; Rhyme of Tang Dynasty; Bibigi; Imago; Performing Arts for the Future Mobile Generation Calit2 Theater, Atkinson Hall, UCSD

Dynamic Spaces; AutoCosm; Takashi's Season; Performing Arts for the Future Mobile Generation Calit2 Auditorium, Atkinson Hall, UCSD

4:15 - 4:45 pm

What If I Am Not Real CRCA Studio 1613, Atkinson Hall, UCSD

Animation

Vladimir Bellini

Buenos Aires, Argentina vlasvlasvlas@gmail.com La grua y la jirafa (The crane and the giraffe)

Shunsaku Havashi

Invited Artist Osaka, Japan hava4sa9@work.odn.ne.ip Ireva

Arina Melkozernova

Invited Artist Arizona, USA amelk98@yahoo.com Self-Transparency

Dennis H. Miller

Northeastern University Massachusetts, USA dhmiller@comcast.net Selected works from the 2007 Northeastern University Visual Music Marathon

Nagata Takeshi, Monno Kazue

Japan Media Arts Festival Invited Artists Tokyo, Japan eleqitel@tochka-factory.com Lighting Doodle Project "Pika Pika"

Artist Books

Kathy Beal

New Mexico, USA kathy@kathybeal.com Seven Sisters

Lyn Bishop

California, USA lvn@lvnbishop.com

Collaborators: Kumkum Nadig (India), Kathy Beal (USA), Palash Mukhopadhyay (India), Pallavi Agarwala (India), Pia Kaul (India), Radha Pande (India), Rashmi Kakde (India), Samira Gupta (India), Stephan Powilat (Germany), Mathias Vogel (Germany), Larry Danque (USA), Amy Wang (USA) If Dreams Could Talk

Dena Elisabeth Eber

Bowling Green State University

Ohio, USA deber@bgnet.bgsu.edu These are Some Jews that Hitler Did Not Get: American Jews and the Survival of a People

Philip Mallory Jones

Ohio University Invited Artist Ohio, USA philipmalloryjones@yahoo.com Collaborator: Dorothy Mallory Jones LISSEN HERE!

Kent Manske

PreNeo Press California, USA kentm@preneo.com

West meets East: Artworks based on a journey to China

Ellen McMahon

University of Arizona, Tucson Invited Artist Arizona, USA emcmahon@email.arizona.edu Collaborators: Ben Kirby, Kelly Leslie

NaturArte: A Bi-National, Interdisciplinary Wetlands Conservation Project in Sonora, México

Art Panels

Local Concerns - Global Art 9 - 10:45 am Monday, 6 August Room 30 A

Digital art is native to a global forum. Its immaterial methods of production and distribution are comparable with those behind economic globalization. What occurs when sensibilities are prompted by the particularities of local conditions? Do these ideas fall victim to some of the same forces that critics of globalization bemoan, such as homogenization of culture in the service of a hegemonic aesthetic status quo? Or does the work gain insight from a broad discourse of artistic sensibility? In this panel, several artists present work that grows out of particular aesthetic, political, and conceptual conditions connected to issues of concern in the artworld at large.

Organizer

Sheldon Brown

University of California, San Diego sgbrown@ucsd.edu

Panelists

Sheldon Brown

Professor of Visual Arts University of California, San Diego

Ricardo Dominguez

Assistant Professor of Visual Arts University of California, San Diego

Alex Dragulescu

Manager, Experimental Game Lab University of California, San Diego

Shahrokh Yadegari

Assistant Professor of Theater and Dance University of California, San Diego

Alternative Networks 11 am - 1 pm Monday, 6 August Room 30 A

Despite Thomas Friedman's contention in The World is Flat that digital technologies have equalized or "flattened" differences in the world, the members of this panel are convinced that many variations and disparities remain to be described and analyzed. Networks and infrastructures are certainly not the same all over the world. They are amalgams of old and new systems, relics of various stages of capitalism and/or socialism, they involve both bodies and machines, and they have different histories and uses. They are embedded in different patches of earth, operate at various scales and speeds, and serve different populations.

This panel features presentations by artists and scholars who work on the visualization of networks and infrastructures in different parts of the world. They explore the social, cultural, and economic effects of network technologies, the visualization of different systems, and the tactical appropriation of them by disenfranchised groups. The goal of the session is to provoke discussion of the variations and differences within categories such as "network" and "infrastructure," and to develop new modes of aesthetic and critical engagement with

Organizer

Lisa Parks

Department of Film and Media Studies University of California, Santa Barbara

Art Panels (continued)

parks@filmandmedia.ucsb.edu

Panelists

Lisa Jevbratt

Department of Art

University of California, Santa Barbara

Rita Raley

Department of English University of California, Santa Barbara

Warren Sack

Department of Film and Digital Media University of California, Santa Cruz

Cristina Venegas

Department of Film and Media Studies University of California, Santa Barbara

Lisa Parks

Department of Film and Media Studies University of California, Santa Barbara

Chinese Media Art Preview 3:30 - 5:15 pm Monday, 6 August Room 30 A

Chinese economic and institutional reforms have helped create a new media art scene in China that is accomplished and capable of international recognition. This panel focuses on significant historical predecessors of media art since the 1990s and the extensive development of media art in China since 2000. In addition, topics such as cultural and social issues, art form changes, media art education, and technological advancements involved with Chinese modern media art creation are addressed. Finally, Chinese media artists in the US are highlighted and compared to media artists ir. China.

Organizer

LiQin Tan

Rutgers University

Panelists

Weihua Gao

Communication University of China

LiQin Tan

Rutgers University

Robert Wang

Peking University

The World Has Changed: The Leonardo Network After 40 Years

The Leonardo network was founded 40 years ago in Paris. In these two panels, members of the Leonardo Education Forum discuss the work of artists who are addressing environmental issues, how the art-sciencetechnology landscape has evolved over 40 years, and new initiatives such as the YASMIN Mediterranean Region Network.

Roger Malina

Leonardo/ISAST, Leonardo Education Forum

ISAST I: The Planet Has Changed: Art, Environment, and Sustainable Development

9 - 10:45 am

Tuesday, 7 August

Room 30 A

Human societies face a number of important issues related to the problems of sustainable development, environmental change, and climate change. Many artists have been involved in these issues over the last decades within the environmental and green movements. A new generation of artists, scientifically and technically literate, is engaging in new ways. The new planetary information-technology infrastructures and new-media technologies provide different approaches than were possible 40 years ago.

Moderator

Sheila Pinkel

Pomona College

Panelists

Roger Malina

Leonardo, The International Society for the Arts, Sciences and Technology

Andrea Polli

Director Integrated Media Arts, Hunter College

Mike Phillips

University of Plymouth

ISAST II: Artists Have Changed: Art, Science, Technology Interaction 11 am - 12:45 pm

Tuesday, 7 August Room 30 A

When Leonardo was founded 40 years ago, the theoretical context was the "two cultures" debate of C.P.Snow. Few artists were trained in science or engineering contexts, and access to new technologies drove a number of initiatives such as the E.A.T. programs and the MIT Center for Advanced Visual Studies, and new venues such as the SIGGRAPH Art Gallery, Ars Electronica, and ZKM. A new generation of artists, born digital and scientifically literate, is now radically altering the way these issues will be addressed in the future. This panel provides a 40-year perspective on how the work of artists and institutions has evolved, new trends, and future directions.

Moderator

Michael Naimark

University of Southern California

Panelists

Roger Malina

Leonardo, The International Society for the Arts, Sciences and Technology

Stephen Wilson

San Francisco State University

Eddie Shanken

Savannah College of Art and Design

Anna Ursvn

University of Northern Colorado

Database Documentaries and Global Knowledge Production: Transnational City Symphonies, Interactive Science, and Constructivist Courseware on Russian Modernism From The Labyrinth Project 3:30 - 5:15 pm

Tuesday, 7 August Room 30 A

Theory and practice in database documentaries from USC's Labyrinth Project: Tracing the Decay of Fiction, a transnational city symphony; Einstein in California, a contradictory portrait; and Russian Modernism, constructivist courseware.

Moderator

Marsha Kinder

Director of The Labyrinth Project and Professor of Critical Studies, School of Cinematic Arts, University of Southern California

Panelists

Rosemary Comella

Creative Director, The Labyrinth Project, School of Cinematic Arts, University of Southern California

Kristy H.A. Kang

Creative Director, The Labyrinth Project and Adjunct in the Division of Animation & Digital Arts, School of Cinematic Arts, University of Southern California

Scott Mahoy

Creative Director, The Labyrinth Project, School of Cinematic Arts, University of Southern California

Indigenous People and Digital Media

1 - 2:45 pm

Wednesday, 8 August

Room 30 A

An exploration of the role of digital media-making in indigenous communities: its uses, forms, issues, and intentions. Representing several unique and varied cultural groups from across the globe, these esteemed aboriginal filmmakers, photographers, and multimedia artists discuss how contemporary technologies allow them to simultaneously work with their respective cultural and ancestral iconographies while creating new ones and how issues of identity, sexuality, cultural/political sovereignty, and land are played out through their art, not only in their respective post-colonial contexts, but also in this era of intense globalization.

Cedar Sherbert

Santa Ysabel Band, Kumeyaay Nation iipav@hotmail.com

Damián López Castillo

Filmmaker and Media Activist Oaxaca, México

Artist

New South Wales, Australia

Anthony Deiter

Artist

Santa Fe, New Mexico, USA

Cedar Sherbert

Artist and Filmmaker

Santa Ysabel Band, Kumeyaay Nation

Global Environment and Digital Media 11:15 am - 1 pm Thursday, 9 August Room 30 A

This panel of experts in interactive art, visualization, and socially responsible media explores the use of graphical and interactive technology for art relating to global environmental issues.

Organizer and Moderator **Bill Tomlinson**University of California, Irvine wmt@uci.edu

Panelists William Brent

University of California, San Diego

Heitor Capuzzo

Universidade Federal de Minas Gerais

Natalie Jeremijenko

University of California, San Diego

Michael Moshell

University of Central Florida

Vibeke Sorensen

University at Buffalo

Shahrokh Yadegari

University of California, San Diego

Art Papers

Building Possible Dreams

Heitor Capuzzo

Professor and Director, midia@rte Laboratory, Universidade Federal de Minas Gerais Belo Horizonte, Brazil hecapuzzo@yahoo.com

Never before in our history has media had such a strong effect on our lives as in the 21st century. Does digital media increase our understanding of life and culture? Is is possible to know ourselves better by recreating life in an artificial environment? Is the fascination with artificial worlds proof of our limited understanding of the "analog" human experience? It is possible to control and destroy cultures? When it happens, human heritage is impoverished, resulting in less diversity and less focus.

The digital media revolution is a kind of involution, a return to the type of colonial-era destruction that exploited continents. With the current level of destruction at its most intense, perhaps at its limit, our life experience is disconnected from the real world. Digital media can be a negative game, entertaining young people with virtual destruction, preparing them for analog wars, and a multifaceted complex system of economic domination. Misinformation, decreased plurality of viewpoints, increased disconnection with life, and the spectacularization of human experience are only some of the symptoms of the strategies used by the corporate media world. Our analog lives need analog values connected to nature and respect for our planet and its fragile resources. This must inform our digital world.

Identifying New Myths for Convergence and Creative Collaboration in the Age of Digitalia

Richard L. Loveless

Global Connections: Art and Technology Consulting Services Arizona, USA rloveless2@cox.net

To assume that it is possible to predict the future of technological innovation beyond the next week, month, or year is sheer folly. To believe that our participation in endless think tanks, conferences, or seminars will shape a consensual vision, one that we all agree may be worth perpetuating, is merely an elitist group exercise in courage.

This paper proposes another scenario: that business, educational, and cultural institutions exist as the sum total of the myths they believe about themselves. In this context, myths are not only about who we are, they are essential to the development of all human understanding and belief systems. This practice is not to be confused with acquired situational narcissism, a self-bestowed sense of ingratiation, but a shared belief that the invention of new myths is an on-going design and discovery process unique to all sensing and feeling human beings. Such an enterprise evolves into the creation of enlightened and expressive forms through continuous real-time simulation of living and learning in the stacking of moments. The challenge is to prepare individuals to adapt to rapid changes, ones we can't even imagine: to prepare to be comfortable living through one's imagination; and to trust and embrace the inevitable transformations that will challenge future participatory energies.

Transdisciplinarity, Yesterday and Today

Carlos Antônio Leite Brandão

Presidente do Instituto de Estudos Avançados Transdisciplinares, Universidade Federal de Minas Gerais Belo Horzonte, Brazil brandao@arq.ufmg.br

In the first section, this paper intends to show some symptoms and reasons for the advent of transdisciplinarity as a strategy of knowledge in the 21st century. In the second section, it develops the basis for a transdisciplinary attitude required to solve complex and contemporary problems, and to promote a new articulation among science, art, technology, and culture.

Around the Antenna Tree: The Politics of Infrastructural Visibility

Lisa Parks

University of California, Santa Barbara California, USA parks@filmandmedia.ucsb.edu

With the globalization of mobile telephony during the past two decades, cell towers have sprouted up across the world. The "unsightliness" of these towers has generated responses ranging from neighborhood protests to manufacturers' concealment strategies.

This paper explores the installation of towers in a variety of locations, from urban spaces to national parks, and considers how their emergence relates to a set of concerns about technology, knowledge, and power. In addition to examining cell towers in different environments, the paper describes various "concealment strategies," including covering towers in tree camouflages and hiding equipment in mosque minarets, flagpoles, birds' nests, and other hiding places. It explores what is at stake in hiding infrastructure and how such practices end up trading technological awareness for a highly synthetic version of "nature." By disguising infrastructure as part of the natural and/or built environment, concealment strategies keep citizens naive and uninformed about the network technologies they subsidize and use. Finally, the paper considers whether it might be possible to develop modes of affective engagement with infrastructure sites such as cell towers by discussing the work of artists such as Robert Voit (Enchanted Wood), Marijetica Potrč (Permanently Unfinished House with Cell Phone Tree) and Olaf Nicolai (Antenna Tree).

Art Talks

Wednesday, 8 August

9 - 10 am

Reproductions of Globality and Views From the Dateline

Ingo Günther

Independent Artist New York, USA

Wednesday, 8 August

10 - 11 am

In The Sweet Bye & Bye: Tracing The Migration And Transformation of Concepts And Materials, And Convergence of Technologies in Temporal Terrains

The realization of the digital art installation, In The Sweet Bye & Bye in Second Life, marks a path that is illuminated by exploring a portfolio of artworks spanning 15 years.

Philip Mallory Jones

The Aesthetic Technologies Lab, Ohio University Artist in Residence, SIGGRAPH 2007 Guerilla Studio

Wednesday, 8 August

11 am - noon

INFO: Screenspace, Panoramas, and the Documentary Image

Considering art, anthropology, geography, and technology, how can we combine various media tools and disciplinary traditions to bend conventions of spatial and temporal construction and evoke modal forms of knowledge about places and experience within places --- both those that are familiar and those that are exotic and strange?

Roderick Coover

Temple University Pennsylvania, USA

Wednesday, 8 August

3 - 4 pm

Crossing Aesthetic Territories: Ideology, Art, and Race

Drawing on work with Virtual Migrants, this talk discusses key approaches to deconstructing the borders that restrict media art from engaging with political and racial themes.

Kooj Chuhan

Independent Artist and Co-Director of Virtual Migrants United Kingdom

Wednesday, 8 August

4 - 5 pm

Building Possible Dreams

Looking at the history of moving images through the 20th century and into the digital revolution, we find evidence of the potential for humanistic inclusion and exclusion in the vision and agendas of filmmakers, corporations, and governments.

Heitor Capuzzo

Universidade Federal de Minas Gerais Belo Horizonte, Brazil

Thursday, 9 August

9 - 10 am

Distort/Rectify: Questioning Human Perception

Is the intuitive certainty which we confer on our perceptual experience valid or should art, by means of distortion, rectify this illusion?

Guy Hoffman

Massachusetts Institute of Technology Media Lab Massachusetts, USA

Thursday, 9 August

10 - 11 am

► Location Room 30A

> Mobile Heart Health: Designing Feedback Displays for Emotional Self-Awareness

Wearable sensors now permit biofeedback in everyday life. To foster mindfulness and behavioral change, however, this data must be translated into psychologically and aesthetically compelling feedback displays. This talk presents recent examples of such feedback displays, including "mobile heart health," which translates cardiovascular monitoring into visual metaphors to promote emotional self-regulation.

Margaret Morris

Intel Corporation Oregon, USA

Thursday, 9 August

3:30 - 4:30 pm

Life Squared: Animating the Archives of Lynn Hershman

When Stanford University bought the archives of artist Lynn Hershman it began a collaborative exploration to animate her body of work. This talk tells the story of how Hershman's work over the past year has been reframed inside the virtual world of Second Life.

Henrik Bennetsen

Stanford University California, USA

Thursday, 9 August

4:30 - 5:30 pm

Human Modes and Digital Codes: Materiality Versus Immateriality, or Why is it Hard to Eat Jello With Chopsticks?

Human experience like the creation of art is numinous or site specific. In this talk, the tradition of using tools to shape materials is contrasted with post-analog art practices that embrace the immateriality of virtual experience.

Richard L. Loveless

Global Connections: Art and Technology Consulting Services Arizona, USA

Digital Performance

J. Walt Adamczyk

Invited Artist California, USA

Autocosm 2007

This piece is a continuation of the ongoing Autocosm project, in which the artist creates artificial worlds in solo live performances. An "autocosm" is a self-contained personal world, apart from the world we all share. In this case, it is a world of growth and evolution, of life and transformation.

Mariela Cádiz, Kent Clelland, Denis Lelong

Paris, France

e*scapes

Taking live cinema to a new level, the Cadiz/Clelland/ Lelong trio performs live electronic music to live remixed footage and vice versa. By combining contemporary dance music structures and sounds with traditional electro-acoustic music techniques, and by deconstructing the common use of nature documentary footage and exploring its cinematic qualities, the trio's live mixing thrives on mesmerizing, forceful, and unexpected relationships.

Maja Cerar, Liubo Borissov

Columbia University Invited Artist New York, USA Collaborators: Liubo Borissov, Maja Cerar

Autopoiesis/Mimesis

Autopoiesis is a work that imagines realities and is, in part, a humorous document of the discussions between the two authors about the beginning of the universe. It is followed and complemented by Mimesis, a more serious exploration of the ancient tension between imperfect reality and ideal form as furthered by art's mimicry.

Kooj Chuhan

Invited Artist Manchester, United Kingdom Collaborators: Tang Lin, Aidan Jolly, Jilah Bakhshayesh, Miselo Kunda, Hafiza Mohamed, and others

What If I'm Not Real

Three masked figures on rafts at sea appear in each of three screens arranged as a circular triptych: an official, a migrant parent, and a child. The anxious official denies the parent access to safe land and community while engaging in lucrative military games. The conclusion poses an inevitable consequence of current conflicts.

Exhale

Exhale: local streets, global waters, bloodstained papers. This is an electronic publication covering five years of video, music, and electronic art engaging with asylum and migration in a new world order, by Virtual

Collaborators: Keith Piper, Tang Lin, Aidan Jolly, Jilah Bakhshayesh, Misalo Konda, Hafiza Mohamed, and others

Joreg

Linz, Austria

Collaborators: Dietmar Bruckmayr, Michael Strohmann, Joreg, Diane Preyer, Lars Oeschler, Michael Höpfel

imago

In imago, a piece for solo vocalist about multimedial representation, the singer is reduced to face and voice, and stylized as a triptych: his real head flanked left and right by three-dimensional clones. He relinquishes himself to the point of self-abnegation. His digital portraits begin to develop lives of their own.

Takashi Kawashima

UCLA Design | Media Arts California, USA takashi@takashikawashima.com

Collaborators: Togo Kida, Yoshimasa Niwa

Takashi's Seasons

A sequential live shadow-puppet/video performance of interpretations of the four seasons. Working in precarious unison, the shadows of the puppets are synchronized with the animation, creating a unique live-action performance. Animation and sound are composited with shadows in real time, and the artist produces "motion pictures" via a combination of seasonal sounds, live shadow-puppet manipulation, and projection of shadow-like animation sequences.

Hyung Min Lee

Soongsil University Seoul, South Korea bongisin@ssu.ac.kr

Collaborators: The Band (Hyung Min Lee, Woo Ram Son, Jae Young Kim)

Bibigi (Theremin Based on Computer Vision Technology)

In this music scoring and sequencing device, pitch, timbre, and loudness are computed based on the transformed images' hue, saturation, and intensity.

Steve Mann

University of Toronto Ontario, Canada mann@eecg.toronto.edu Collaborators: James Fung, Raymond Lo, Chris Aimone, Mir Adnan Ali, Sadek Ali

CyborGLOGGER Performance of Globalevesation

Samantha Hazan, Stephanie Reilly

Michael Masucci

18th Street Arts Center California, USA mmasucci@eztvmedia.com Collaborators: Choregrapher: Donna Sternberg Digital Artists: Michael Masucci, Kate Johnson, Dancers: Alheli Montano, Vincent Hederman,

RAGE TO KNOW

This piece utilizes concepts from quantum mechanics and string theory, and attempts to illustrate through dance some of the more complex theories concerning multi-dimensionality, time displacement, and the warping of space.

Location

Calit2 and CRCA Studio, Atkinson Hall, University of California, San Diego. For the Digital Performance Schedule, see page 98.

Hiroshi Matoba, Yasushi Matoba, Hiroyo Hattori, Nanako Heisho

Shizuoka University of Art and Culture Shizuoka, Japan matoba@suac.ac.jp

Collaborators: Natsumi Tahara, Yoshimi Horie, Satomi Hori, Yuko Takeda, Umika Obata

Performing Arts for the Future Mobile Generation

These two performance works predict new styles of play that children will enjoy with future mobile phones. One is made from six units of wireless displays based on LCD technology. The other is based on three units of wireless LED projectors.

Pauline Oliveros Rensselaer Polytechnic Institute

New York, USA paulino@deeplistening.org Collaborators: Curtis Bahn, Jonas Braasch, Chris Chafe, Tomie Hahn, Soundwire Ensemble, Tintinnabulate Ensemble, Dan Valente, Bart Woodstrup

Dynamic Spaces

This project explores the relationships within an acoustic and electronic performing ensemble for improvised music in virtual environments with deliberately varying characteristics. Variations in acoustics provide a new dynamic parameter of music in addition to harmony, melody, and rhythm. The performance is enhanced by dynamic visual elements with interwoven artistic images and views of the performers in a shared virtual space.

Xiaohua Sun, Ping Jin, Lei Lihong, Nan Zhang

Massachusetts Institute of Technology Massachusetts, USA Xhsun@mit.edu

Walking Into a Leonardo Masterpiece Maurizio Seracini

A Rhyme of the Tang Dynasty

A performance that uses interactive audio/visual techniques to enhance the aesthetic effect of Chinese traditional dance. Max/MSP/Jitter generate real-time music and graphics.

Jeffrey Treviño and Ross Karre

University of California, San Diego California, USA jeffrey.trevino@gmail.com Collaborators: Ross Karre, percussionist, videographer, performer; Jeffrey Treviño, composer and sound engineer

Substitute Judgment + Metal Catalogue This piece explores the synchronization and hybridization of media to create a unified and balanced work of art. Jeffrey Treviño created Substitute Judgment as an autonomous solo multi-percussion work, inspired by his readings of philosophical inquiries into the ethics of Alzheimer's Disease patients' legal status as decision makers. Ross Karre created Metal Catalogue, a synchronized video response to Treviño's work, from still photographs of decaying metal farm equipment on a 150 year-old ranch (the T-Lazy-7) in Aspen, Colorado.

Installations

Harriete Estel Berman

Artist in Residence, Guerilla Studio California, USA bermaid@harriete-estel-berman.info Consuming Conversation, 2001-2004

Caitlin Berrigan

Massachusetts, USA caitlin@membrana.us
Viral Confections

Chiara Boeri

Studio Boeri Milano, Italy chiaraboeri@gmail.com METROBOSCO:

More Than a Green Belt for a City*

Sheldon Brown

University of California, San Diego California, USA sgbrown@ucsd.edu Collaborators: Alex Dragulescu, Mike Caloud,

Collaborators: Alex Dragulescu, Mike Caloud Erik Hill, Carl Burton, Joey Hammer

The Scalable City

Anna Chupa

Leheigh University
Pennsylvania, USA
anna.chupa@lehigh.edu
Collaborators: Anna and Michael Chupa
Nou I a

Christian Croft, Ed Purver, Ariel Efron

New York, USA xncroft@gmail.com Future Perfect

Maaike Evers and Mike Simonian

Artists in Residence, Guerilla Studio California, USA info@mikeandmaaike.com Windowseat Lounge

Jun Fujiki

Fukuoka, Japan jun_fujik@hotmail.com Collaborators: Jun Fujiki, Taketoshi Ushiama, Kiyoshi Tomimatsu OLE Coordinate System

Gregory Garvey

Quinnipiac University Invited Artist Connecticut, USA greg.garvey@quinnipiac.edu

The Automatic Confession Machine: A Catholic Turing Test

Adrian Goya

México contact@adriangoya.com FACES

Ingo Günther

Invited Artist New York, USA ingo@worldprocessor.com i-gun@refugee.net Worldprocessor.com

Topography Drive (Pacific Rim)

Qinglian Guo

Kanazawa Institute of Technology Ishikawa, Japan kaku@infor.kanazawa-it.ac.jp Collaborator: Yiwei He

Osaka Electro-Communication University

A digital window for watching snow scenes

Yoichiro Kawaguchi

The University of Tokyo Tokyo, Japan yolchiro@iii.u-tokyo.ac.jp

Collaborators: Takahiro Harada, Tsuruoka Shuhei

Hydrodynamics Ocean*

Osman Khan

Pennsylvania, USA ok@osmankhan.com Collaborators: Cesar Cedano, Alica Ko, Drura Parish, Matt Zinski Fruits of our labor

Thomas Kienzl

Graz, Austria
inbox@kommerz.at
Collaborators: Idea: Florian Grond
Concept, Idea, Production, Design: Florian Grond,
Thomas Kienzl

Photo: Gabriele Engelhardt Interactive 3D programming, interaction design: Ulf Marsche, Otti Brosch, Kamil Jozwiak,

_zur form

Haemin Kim and Junghyun Ahn Seoul, South Korea

info@tactualseries.info
Collaborators: Changkyung Kim, Hyunsuk Jun
Dreaming a Fingertip Conversation with
You_tactual[si:gak] series

Tammy Knipp

Florida Atlantic University Florida, USA tknipp@fau.edu Collaborators: Eric Moon, Danny Knipp CASE STUDY 9983 & 9983-B

Shawn Lawson**, Wafaa Bilal

Rensselaer Polytechnic University New York, USA lawsos2@ rpi.edu Wu Wei**

A Bar at the Folies Bergère

Francisco MarinhoUniversidade Federal de Minas Gerais

Invited Artist

Belo Horizonte, Brazil chicomar@uol.com.br
Collaborators: Alckmar Luiz dos Santos, Alvaro Andrade Garcia, Carla Viana Coscarelli, Carlos Augusto Pinheiro de Sousa, Cristiano Bickel, Daniel Poeira, Delaine Cafiero, Fernando Aguiar, Gustavo Morais, Jalver Bethonico, Leonardo Souza, Lucas Junqueira, Marcelo Kraiser, Marilla Bergamo, Rafael Cacique Rodrigues, Ricardo Takahashi, Tania Fraga, Walisson Costa Palavrador

➤ Note: Installations with an (*) are located at Atkinson Hall, University of California, San Diego. All other installations are located in the Art Gallery, Room 20 A-D.

Margaret Morris

Intel Corporation Invited Design Researcher Oregon, USA margaret.morris@intel.com

Collaborators: Stefanie Danhope-Smith, Bill DeLeeuw, Dominic D'Andrea, Michael Labhard, Farzin Guilak, JM Vanthong, Intel Corporation; Larry Jamner, University of California, Irvine; Richard Sloan, Ethan Gorenstein, Columbia University

Mobile Heart Health

Lucy Petrovich and Johnie Hugh Horn

University of Arizona Arizona, USA lucy@email.arizona.edu Desert View, Desert Deaths

Rudy Poat

Deep Dark Invited Artist British Columbia, Canada rpoat@ea.com

Deep Dark: Real-Time Interactive Cinema Project

Catherine Richards

University of Ottawa Ontario, Canada richards@uottawa.ca

Collaborator: Peter Sewell, vacuum physicist I was scared to death/I could have died of joy

Scenocosme

Lyon, France scenocosme@gmail.com Collaborators: Gregory Lasserre, Anais met den Ancxt SphèrAléas

James Sears

New York, USA insears@jamesnsears.com

The Orb

Mark Shepard University at Buffalo

Invited Artist
New York, USA
shepard6@buffalo.edu
Collaborators: Fiona Murphy, Achint Thomas,
Viral Modi, Ajeya Krishnamurthy, Aaron Flynt,
Matthew Jording

Tactical Sound Garden Toolkit

Koh Sueda

Tokyo, Japan info@ching-dong.com Collaborators: Koji Ishii Chang-tei System

Monitor-Based Work

Keiko Takahashi

Japan Electronics College Tokyo, Japan

Art Direction: Keiko Takahashi; Programming: Taku Oizumi, Takahide Mikami, Shinji Sada; Sound: Saburo Ubukata; supported by NEC Display Solutions, Ltd.

Diorama Table

Masato Takahashi

Keio University Kanagawa, Japan t03595mt@sfc.keio.ac.jp Collaborator: Hiroya Tanaka bogs: Instrumental Aliens

Tamiko Thiel

München, Germany tamiko@alum.mit.edu Collaborators: Music: Ping Jin

Sound Effects: Dietmar Elflein The Travels of Mariko Horo

Daria Tsoupikova

University of Illinois at Chicago Illinois, USA datsoupi@uic.edu Rutopia 2*

Noah Wardrip-Fruin

University of California, San Diego Invited Artist California, USA nwf@ucsd.edu Collaborators: Sascha Becker, Josh Carroll, Robert Coover, Shawn Greenlee, and Andrew McClain With Stephen Boyd, Ava Pierce, and Jeffrey Kuramoto Screen*

Ruth G. West University of California, San Diego

Invited Artist California, USA rwest@ncmir.ucsd.edu Collaborators: Ruth G. West, J.P. Lewis, Todd Margolis, Iman Mostafavi, Jurgen Schulze, Javier J. Girado, Rajvikram Singh, Kayo Arima ATLAS in Silico*

Ming-Yang Yu, Po-Kuang Chen

Taipei, Taiwan vuminyung@gmail.com Collaborators: Yu-Jen Chen, Meng-Chieh Yu, Jen-Yuan Chiang, Chien-Lin Tang, Jack Hsieh, Bing-Yu Chen eco-echo

Anya Belkina

Duke University Invited Artist North Carolina, USA belkina@duke.edu Crowded with Voices

Devika Coles

New York, USA devikacoles@hotmail.com Places of Memory

Roderick Coover

Temple University Pennsylvania, USA rcoover@temple.edu Collaborators: Deb Olin Unferth, Jodi Gilbert Something That Happened Only Once

EA Game Innovation Lab

University of Southern California

California, USA tfullerton@cinema.usc.edu Collaborators: Bill Viola, Kira Perov, Tracy Fullerton, Todd Fumanski, Kurosh ValaNejad, Scott Fisher, Andreas Kratky, Juri Hwang, Richard Almodovar, Mike Rossmassler, Aimee Dozois, Jamie Antonisse, Michael Sweet

Executive Producers: Kira Perov, Scott Fisher The Night Journey: Walk Through

Santiago Echeverry

The University of Tampa Florida, USA secheverry@ut.edu WORLD

Copper Frances Giloth University of Massachusetts Amherst

Invited Artist Massachusetts, USA giloth@oit.umass.edu Looking Back 25 Years: SIGGRAPH

82 Art Show

Lynn Hershman

University of California, Davis Invited Artist California, USA bennetsen@gmail.com Life Squared

Philip Mallory Jones

Ohio University Ohio, USA philipmalloryjones@yahoo.com Collaborators: Dorothy Mallory Jones Ohio University IN THE SWEET BYE & BYE SL (a Second Life installation)

Julian Konczak

Southampton, United Kingdom juliankonczak@hotmail.com 25 - Birth and Decay

Toby Lee, Fotini Lazaridou-Hatzigoga

Invited Artists Harvard University Massachusett, USA tobylee@fas.harvard.edu Royal, Nebraska

Eugenia Maakaroun

Federal University of Minas Gerais Belo Horizonte, Brazil Maracatu Sacred Rhythms

Ben Maggos

In Memoriam Invited Artist University of California, San Diego California, USA What About Job?

Ellen McMahon

Invited Artist University of Arizona, Tucson Arizona, USA

NaturArte: A Bi-National, Interdisciplinary Wetlands Conservation Project in Sonora,

Pedro Meyer ZoneZero.com

México pedro.zonezero@amail.com Invited Artists: Shahidul Alam, Jean Marc Caimi, Shadi Ghadirian, Oscar Guzmán, Pok Chi Lau, Daniel Machado, Pedro Meyer, Juri Nesterov, Francisco Mata Rosas, Inés Ulanovsky, Wyatt Gallery, Li Zhensheng

Selections from ZoneZero.com

Alejandro Perez-Avila

University of Arizona, Tucson Invited Artist Arizona, USA aperezav@email.arizona.edu Collaborator: Lucy Petrovich Global Eyes Web Site

Andrea Polli and Joe Gilmore

Hunter College New York, USA apolli@hunter.cuny.edu

Joseph Rabie

Joetopia Tournefeuille, France

Psychogeographical Studies

The University of New South Wales Invited Artist Sydney, Australia reanation@yahoo.com Collaborators: Stephen Jones, Peter Oldham, Gail Kelly maang (message stick)

Johanna Reich

Invited Artist Cologne, Germany johanna.m.reich@gmail.com De Vez En Cuando

Seigow Matsuoka Editorial Engineering Laboratory, Naoka Tosa

Tokyo, Japan Kyoto University Kyoto, Japan tosa@media.kyoto-u.ac.jp Hitch-Haiku

Japan Media Arts Festival

Invited Work Tokyo, Japan contest@plaza.bunka.go.jp

Selected Works From the 10th Japan Media Arts Festival

Cedar Sherbert

Invited Artist California, USA iipay@hotmail.com

Collaborators: RJ Lozada, Director of Photography; Josephy Tasai, Sound Editor; Joe Dzuban, Re-Recording Mixer; Timo Chen, Original Score; Howard Duy Vu, Editor; Cedar Sherbert, Sherman Alexie, Lois Welch, Producers Gesture Down (I Don't Sing)

J.P. Sniadecki

Invited Artist Harvard University Massachusetts, USA jpsniadecki@yahoo.com Songhua

Alexander Villacorta

University of California, Santa Barbara California, USA villacorta@ece.ucsb.edu Collaborators: Karl Grossner, Jonathan Ventura,

Collaborators: Karl Grossner, Jonathan Ventura, Anne-Marie Hansen, Emily Moxley, Joriz De Guzman, Matt Peterson Spheres of Influence

Wall-Based Work

Mostafa Barakate

Invited Artist Alexandria, Egypt vip_most79@yahoo.com Revolution

Stan Bowman

Cornell University New York, USA Sjb4@cornell.edu RHODADALIA

Vlatko Ceric

University of Zagreb Zagreb, Croatia vlatkoceric@gmail.com Algorithmic mirror

Max Chandler

Arizona, USA max@maxchandler.com Silent Dancing

Paula Dawson

New South Wales, Australia p.dawson@unsw.edu.au Luminous Presence

Brian DeLevie

University of Colorado at Denver Colorado, USA b.delevie@comcast.net

Re-remembered, digital palimpsests

Brian Evans

University of Alabama Alabama, USA brian.evans@ua.edu sonata (pipilo) time slice (melia)

Murat Germen

Sabanci Üniversitesi Istanbul, Turkey muratgermen@sabanciuniv.edu soul of the place - genius loci Kanyon reconstructed

Copper Frances Giloth

University of Massachusetts Massachusetts, USA giloth@oit.umass.edu

Sunday Morning at the City Hall Doors/ Dimanche Matin aux Portes d'Hôtel de Ville

Matt Hamon

The Evergreen State College Artist in Residence, Guerilla Studio Washington, USA matthamon@hotmail.com

Dog Years

Peter Hardie

Bournemouth University Dorset, United Kingdom peterh@bournemouth.ac.uk falling water

Shunsaku Hayashi

Invited Artist Osaka, Japan haya4sa9@work.odn.ne.jp Perry's Do-Bu-Ro-Ku

Taraneh Hemami

California College of the Arts Invited Artist California, USA themami@cca.edu Most Wanted

Guy Hoffman

Massachusetts Institute of Technology Media Lab Massachusetts, USA guy@media.mit.edu Time Bracketing Study: Stata Latin

Masa Inakage

Keio University Fujisawa, Japan nakage@sfc.keio.ac.jp

Flow

Andrew Johnson

Carnegie Mellon University Pennsylvania, USA ajlj@andrew.cmu.edu Hawker, Hacker, Herald

Matthew Kenyon

Pennsylvania State University Pennsylvania, USA mck16@psu.edu Collaborator: Doug Easterly Improvised Empathetic Device

Davida Kidd

University College of the Fraser Valley British Columbia, Canada dkidd@shaw.ca The Weight of Reason (after Goya) Guns and Kolbasa

Kazuhiko Kobayashi

Tokyo University of Art and Design Yamagata, Japan i2kai@k-kobayashi.info Scan Gate

Viktor Koen

New York, USA viktor@viktorkoen.com

Witness No.02 and No. 04

Sally Grizzell Larson

Pennsylvania, USA wglarson@aol.com

No. 6, from the series Thread and Carbon, Oil and Steel

Qian Li

Ohio, USA IqIqI@yahoo.com air

Core

Wall-Based Work

Andy Lomas

London, United Kingdom andylomas@yahoo.com

Flow 9 Flow 19

Dan Lu

Digital Art Indiana, USA lu.160@osu.edu Letters I, Letters II

Jessica Malonev

Ashland University Ohio, USA Mjessica3@hotmail.com

Intertwined: Person, Place, and Time

Chi-wah Man

Hong Kong edgesoul@hkbu.edu.hk SelfPortrait06_Diptych

John McGhee

University of Dundee Dundee, United Kingdom j.b.mcghee@dundee.ac.uk Collaborator: Graeme Houston, Ninewells Hospital

Integrity: structure and surface

Nataliya Nadtoka

University of Surrey Guildford, United Kingdom nataliya.nadtoka@gmail.com Viva la Revolution

Joe Nalven

Digital Art Guild California, USA jnalven@digitalartguild.com World Identity Cards

Marte Newcombe

Victoria, Australia etramnew@yahoo.com Collaborator: Greg Shirah Eleven Fifty Nine

Landfill

Running on Empty

Drought Here, There Robotman

Till Nowak

Mainz, Germany till.nowak@framebox.de

Jin Wan Park and June Seok Seo

Chung-Ang University Seoul, South Korea iinpark@cau.ac.kr Visual Genealogy Tom Piper and Sushma Bahl

The Cardiff School of Art and Design Invited Artist

Cardiff, United Kingdom tompiper1@mac.com

Collaborators: Iwan Parry, Chris Orr, Molly Thomson, Richard Cox, Chris Lloyd, Sue Hunt, Annie Giles Hobbs, Tom Piper, Dale Devereux Barker, Kavita Nayar, Samit Das, Vinnay Sharma, Veer Munshi, Trupti Patel, Ashok Ahuja, Manish Modi

V9-U9 A Digital Portfolio

Dave Poindexter

University of Texas of the Permian Basin Texas, USA poindexter_d@utpb.edu Meteor Crater Observatory on

Old Route 66, Arizona

Joohyun Pyune

Paramount Art New Jersey, USA paramountart@aol.com Blue Faith

Don Relyea

donrelyea.com Texas, USA don.relyea@gmail.com

Big Hairy Bush - Hair Particle Drawing Project

Chris Rowland

University of Dundee Dundee, United Kingdom c.rowland@dundee.ac.uk Collaborators: Martin Dean and Mark Lawrence

HMS Royal Oak

Alma de la Serra

Northwestern University Illinois, USA paul-hertz@northwestern.edu Linkages

Mark Stock

Massachusetts, USA mstock@umich.edu Dvnamo

Green Streamlines

Susana Sulic

Paris, France sulicsu@hotmail.com

Programmer: Stephane Sikora

Cyvers Viral City

Masakazu Takano

Chiba-Ken, Japan masakazu takano@yahoo.com Re-formation

Transpacific

Robert Trempe

Temple University Pennsylvania, USA trempe@temple.edu Connections

Anna Ursyn

University of Northern Colorado Colorado, USA ursvn@unco.edu Clear Water Act

Wires

Roman Verostko

Pathway Studio Minnesota, USA roman@mcad.edu

Flowers of Learning: "Hortus Conclusus"

James Faure Walker

University of the Arts, Camberwell London, United Kingdom james@faurewalker.demon.co.uk

Dark Filament

Mike Wong

School of Creative Media Kowloon, Hong Kong smmike@cityu.edu.hk Elevation #2

Michael Wright

M Ragsdale Wright Studios and Otis College of Art & Design Artist in Residence, Guerilla Studio California, USA

mrwstudios@earthlink.net Cowboy

Guan Hong Yeoh

Hyperthesis Visual Lab & Wanganui School of Design Wanganui, New Zealand yeoh@hyperthesis.com Super*Nature

Solvita Zarina

University of Latvia Riga, Latvia solvitaz@latent.lv See - Buy - Fly

Andrzej Zarzycki

Rhode Island School of Design Massachusetts, USA zarzycki@alum.mit.edu Texture of Reality No.7

Jing Zhou

Monmouth University New Jersey, USA jing0099@yahoo.com

Eternity (Ch'an Mind, Zen Mind Series)

▶ Electronic Theater

Location: San Diego Civic Theatre

Monday, 6 August Tuesday, 7 August Wednesday, 8 August

7 – 9 pm 7 – 9 pm **▶** Electronic Theater Matinée Location: San Diego Civic Theatre

Tuesday, 7 August Wednesday, 8 August

2 - 4 pm

Animation Theaters

Location: Room 24 and 25

Sunday, 5 August Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August

 $1 - 7 \, pm$ 9 am - 6 pm 9 am - 6 pm 9 am - 6 pm 9 am - 5 pm

Computer Animation Festival

The premier annual event for the world's most innovative, accomplished, and amazing digital film and video creators. An internationally recognized jury receives hundreds of submissions and presents the best work of the year in daily Animation Theaters and the Electronic Theater (matinée and evening shows). Selections include outstanding achievements in time-based art, scientific visualization, visual effects, real-time graphics, and narrative shorts.

Computer Animation Festival Jury & Committee

Paul Debevec

USC Institute for Creative Technologies

Computer Animation Festival Committee

Technology Director Sebastian Sylwan

Animation Theater Producer Tomas Pereira

USC Institute for Creative Technologies

Assistant Producer Carlye Archibeque

Minister of Information Samuel Lord Black Autodesk, Inc.

Outreach & Event Producer Maya Martinez

Computer Animation Festival Jury

Carter Emmart

American Museum of Natural History

Nickson Fona

Egg Story Creative Productions

Michael Kass

Pixar Animation Studios

Randal Kleiser

RK Productions

Gavin Miller

Adobe Systems Incorporated

Shellev Page

DreamWorks Animation

Sony Pictures Imageworks

Habib Zargarpour Electronic Arts

Jury Alternates

Lina Yamaquchi Sebastian Sylwan Pre-Show and Opening Subcommittee

Florian Witzel Maya Martinez Diane Piepol Steve Heminover Matt Polak

Mike Mattale **Chris Stuart**

Jury Meeting Technical Subcommittee

Rob Groome Sebastian Sylwan Samuel Lord Black

SIGGRAPH 2008 Representative Jill Smolin

Animation Theaters Schedule

Times
9:00 am
9:30 am
10:00 am
10:30 am
11:00 am
11:30 am
12:00 pm
12:30 pm
1:00 pm
1:30 pm
2:00 pm
2:30 pm
3:00 pm
3:30 pm
4:00 pm
4:30 pm
5:00 pm
5:30 pm
6:00 pm

- The Animation Theaters present seven reels: Creativity, Storytelling, Games&FX, Madness, Science!, Music, and 4K.
- The reels play continuously throughout the week in Rooms 24 and 25 of the San Diego Convention Center.
- The 4K reel is a special reel of 4K-resolution films (4096x2160 pixels) shown on Sony's SXRD 4K video projection system.
- The JMAF reel presents award-winning selections from the 2006 [10th] Japan Media Arts Festival.
- The **FJORG!** sessions will present selections and winners from SIGGRAPH 2007's FJORG! iron animators competition.

Creativity

Manakai Sky HD "Feel Everything" 90° Ego Contrast minimum edition Lenovo "Virus" Beginning Clik Clak Dreammaker (Jury Honors) Tournis La Marche Des Sans Nom

Storytelling

Total Time

Video 3000 Perpetuum Mobile Oli's Chance Dynamo 49 The End 8848 Alter Ego Fetch

Games & FX

Marvel Ultimate Alliance - Intro Spider-Man 3: Birth of Sandman Lost Odyssey Opening Cinematics Nissan 4x4 Warhammer Online - The Age of Reckoning World of Warcraft: The Burning Cursade Microsoft Zune "Two Little Birds" Half Life 2: Episode 2 Budwiser "King Crab" Fight Night Round III NBA Street Pepsi "Dance Tron" Paraworld Superman Returns Charlotte's Web - Charlotte's World Donkey Xote Trailer Chevrolet "Buildings" Orville Redenbacher Arthur and the Invisibles Silent Hill The Rat Rules! 300

Madness

13 Ways to Die at Home (Interstitials) Versus Cafard Volkswagen Touran It's JerryTime!: The Big Time Moutons Space Shower Hot 50 The Animator and the Seat Boneheads Adidas - Adistar The Adventures of Baxter & McGuire Chocolate Pillows Kinski Revisited Aditya Birla Group India Fat Chance Respire, Mon Ami Codehunters

Science!

Jet Production from a Rotating Black Hole FedEx Office Moon Liquid Simulation of Lattice-Based Tetrahedral Meshes Real-Time Water Waves with Object Interaction L'Odyssée de la Vie (The Odyssey Coal Fire Research: A Sino-German Initiative Johnny Walker "Human" Venus Venus L'Uomo Uccello Capturing and Animating Occluded Cloth Toyshop Beach Ball Magic Fluid Control Building Blocks Physics on GPUs The Fallen Oak GMC "The Encounter" Perceptive Pixel Multi-Touch Demo Reel Sony Bravia Paint Technical Breakdown Artificial Stupidity Esc Space

Music

Happy Feet Herbstlaub Chaos Theory Ted HP Hands "Jay-Z" The Grandfather of Soul Gears of War - Mad World Beck "Girl" Gorillaz 'El Manana' **Total Time**

4K

Flight to the Center of the Milky Way 27 Storms: Arlene to Zeta Solar - Terrestrial Interaction from Cosmic Collisions swirl Presentation of Cultural Heritage

Using 4K Real Time Rendering

26:09

54:10

Animation Theaters

13 Ways to Die at Home

Lee Lanier BeezleBug Bit, LLC

27 Storms: Arlene to Zeta

Gregory W. Shirah

Scientific Visualization Studio, NASA Goddard Space

Flight Center

Australia

Kirsty Millar, Visual Effects Supervisor

Animal Logic

Japan

Ichiro Iwano, Director

Iwano Design

8848

France

Maelys Faget, Kévin Franczuk, Grégory Jennings,

Directors

Supinfocom Valenciennes

90°

France

Jules Janaud, Raphël Martinez-Bachel,

François Roisin, Directors

Supinfocom Valenciennes

Adidas - Adistar

France

PLEIX, Directors

Mac Guff

Aditya Birla Group India -

"Taking India to the World"

Israel

Doron Fiterman

Gravity Visual Effects & Design

The Adventures of Baxter & McGuire:

The Soccer Game USA

Mike Blum

Alter Ego

Poland

Kuba Gryglicki Studio Mansarda

The Animator and the Seat

Eric Drobile

Ringling School of Art and Design

Arthur and the Invisibles

France

Pierre Buffin, CG Director

BUF Compaigne

Artificial Stupidity

Jonathan Lyons, Producer and Director

Beach Ball

USA

Sam Bayer, Director

MassMarket

Beck "Girl"

Mathew Cullen & Grady Hall, Directors

Motion Theory

Beginning

Japan

Takehisa Igarashi, Director

Tohoku University of Art & Design

Boneheads

Hiroshi Chida, Director

Nickelodeon

Budwiser "King Crab"

United Kinadom

Brian Smego, Producer

The Mill

Building Blocks

Chris Staves & Marco Spier, Directors

MassMarket

Cafard

France

Anne Brotot, Producer

Supinfocom Arles

Capturing and Animating Occluded Cloth

Keenan Crane

University of Illinois at Urbana-Champaign

Chaos Theory

Barna Buza, Zoltan Szabo, Gergely Szelei

Conspiracy

Charlotte's Web - Charlotte's World

John Dietz, VFX Supervisor

Rising Sun Pictures

Chevrolet "Buildings"

Canada

Simon van de Lagemaat, VFX Supervisor

The Embassy Visual Effects

Chocolate Pillows - "Look What's Inside"

Doron Fiterman

Gravity Visual Effects & Design

Clik Clak

France

Aurélie Fréchinos, Victor-Emmanuel Moulin,

Thomas Wagner, Directors

Supinfocom Arles

Coal Fire Research:

A Sino-German Initiative

Nils Sparwasser, Director German Remote Sensing Data Center Location

Room 24 and 25

Codehunters

United Kingdom

Ben Hibon, Director

Axis Animation, Blink Ink

Contrast minimum edition

Tomoko Nagai

CAD CENTER CORPORATION

Crow

Marie Hyon & Marco Spier, Directors

PSYOP, Inc.

Donkey Xote Trailer

Jose Pozo, Director

Filmax Entertainment

Spain

Dreammaker

Germany

Leszek Plichta

Filmakademie Baden-Württemberg

France

Fabrice le Nezet, Mathieu Goutte, Benjamin

Mousquet, Directors

Supinfocom Valenciennes

Ego

Marie Anne Fontenier, Producer

Supinfocom Valenciennes

The End

France

Marie Anne Fontenier, Producer

Supinfocom Valenciennes

Canada

Justin Henton, Director

The Fallen Oak

United Kingdom Chris Rowland

University of Dundee

Fat Chance

United Kingdom

Ben Jones Bournemouth University

FedEx "Moon Office" United Kingdom

The Mill Fetch

United Kingdom

Dana Dorian, Director, Writer

Axis Animation

Fight Night Round 3 - PS3

Canada

Christopher Sjoholm, Kat Kelly Hayduk, Mike

Blank, Celia Jepson, Rob Hilson, Andrew Ellem, Vicki Ferguson, Pawel Siarkiewicz

Animation Theaters

Flight to the Center of the Milky Way USA

Donna Cox, Producer

The National Center for Supercomputing Applications

Gears of War - Mad World

Joseph Kosinski, Director

Digital Domain, Inc.

GMC "The Encounter"

Canada

Simon van de Lagemaat, VFX Supervisor

The Embassy Visual Effects

Gorillaz "El Manana"

United Kingdom

Pete Candeland & Jamie Hewlett, Directors

Passion Pictures

The Grandfather of Soul

USA

Jaime Maestro, Director

Keytoon Animation Studio

Half-Life 2: Episode Two

USA

Valve Corporation

Happy Feet

Australia

George Miller, Director

Animal Logic

Herbstlaub

Germany

Oliver Vogel, Director and Animator

Filmakademie Baden-Württemberg

HP Hands "Jay-Z"

USA

Rich Silverstein & Steve Simpson, Creative

Directors

Motion Theory

It's JerryTime!: The Big Time

USA

Jerry Zucker & Orrin Zucker

USA

Jet Production from a Rotating Black Hole

Donna Cox

The National Center for Supercomputing Applications

Johnnie Walker "Human"

United Kingdom

Dante Ariola, Director

The Mill

Kinski Revisited

Germany

Volker Helzle

Filmakademie Baden-Württemberg

La Marche des Sans Nom

Nicolas Laverdure, Lucas Vigroux, Jean

Constantial, Directors

Supinfocom Arles

Lenovo "Virus"

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The Embassy Visual Effects

Liquid Simulation on Lattice-Based

Tetrahedral Meshes

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Lost Odyssey Opening Cinematics

Japan

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L'Uomo Uccello

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Magic Fluid Control

Switzerland

Nils Thuerey

ETH Zürich

manakai

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TANGRAM Co. Ltd.

Marvel Ultimate Alliance - Intro

USA

Blur Studio

Microsoft Zune "Two Little Birds"

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Moutons

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Nissan 4X4 (2)

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Paraworld

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& Lighting Artist

Pepsi "Dance Tron"

Sabrina Elizondo

Method Studios

Perceptive Pixel Multi-Touch Demo Reel

(Jan-2007)

ÙSA

Jefferson Han

Percentive Pixel

Perpetuum Mobile

Enrique García, Raquel Ajofrín, Rubén Salazar

SILVERSPACE ANIMATION STUDIOS

Physics on GPUs

Japan

Takahiro Harada, Seiichi Koshizuka, Yoichiro

Kawaguchi

The University of Tokyo

Presentation of Cultural Heritage Using 4K Real Time Rendering System

Japan

Takanori Ito TOPPAN PRINTING CO., LTD

The Rat Rules!

USA

Blair Clark, Joel Friesch, Visual Effects

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Tippett Studio

Respire, Mon Ami

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Silent Hill

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BUF Compaigne

Sky HD "Feel Everything" United Kingdom

Jo Sheppard & Stefanie Boose, Producers

The Mill

Solar-Terrestrial Interaction

From Cosmic Collisions

USA

Carter Emmart American Museum of Natural History

Sony Bravia Paint Technical Breakdown

United Kingdom

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The Moving Picture Company

Animation Theaters

Space

South Korea

Sang yeong Jeong, Director

NCsoft

Space Shower Hot

Synichi Yamamoto & Yasuo Koga, Directors

OMNIBUS JAPAN

Spider-Man 3: Birth of Sandman

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Superman Returns

United Kingdom

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Paranoid Projects

ToyShop

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Volkswagen Touran

France

Appert Aurélie

Mikros Image

Warhammer Online -

The Age of Reckoning (Intro)

USA

Blur Studio

Wave Particles

USA

Cem Yuksel

Texas A&M University

World of Warcraft: The Burning Crusade

USA

Jeff Chamberlain, Scott Abeyta

Blizzard Entertainment

Flectronic Theater

300's Liquid Battlefield

Germany

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SCANLINE VFX

Ark

BEST OF SHOW

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Burning Safari

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En Tus Brazos

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equilibrio

USA

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Formation of a Spiral Galaxy

The Four-Dimensional Digital Universe Project National Astronomical Observatory of Japan

Game Technology 2007

- Crysis, CryTek GmbH
- · Gears of War, Epic Games
- Resistance Fall of Man, Insomniac Games
- Playable Universal Capture 2007 Reel, Flectronic Arts

A Gentlemen's Duel

USA

Blur Studio

Happiness Factory

Todd Mueller & Kylie Matulick, Directors

PSYOP, Inc.

High Fashion in Equations

Switzerland

Nadia Magnenat-Thalmann

MIRALab, University of Geneva

HP Hands "Paulo Coelho"

Mathew Cullen, Director

Motion Theory

Industrial Light & Magic 2007

Miles Perkins, Brent Bowers, Greg Grusby

Industrial Light & Magic

The Itch

United Kingdom

Joel Green

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Lifted

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Pixar Animation Studios

No Time For Nuts USA

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Blue Sky Studios

NVIDIA Real-Time Graphics Research:

The GeForce 8 Demo Suite

NVIDIA DemoTeam

NVIDIA Corporation

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USA Doug Lombardi

Valve Corporation

Raymond

United Kingdom

Fabrice le Nezet, Jules Janaud, François Roisin

The Mill

The Recent Future Robot: HELPER Z

Japan

Katsuyuki Suzuki

Sears Tools "Arboretum"

USA

Sabrina Elizondo

Method Studios

SIGGRAPH 2007 Papers Preview

Jim Blinn, Michael Cohen, David Thiel, Producers

Microsoft Research

Spider-Man 3: VFX Highlights

Scott Stokdyk, Visual Effects Supervisor

Sony Pictures Imageworks

STORM

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Location

San Diego Civic Theatre, 1100 Third Avenue

Surf's Up: A Practical Guide

to Making Waves USA

Rob Bredow

Sony Pictures Imageworks

United Kingdom

Lee Griggs

Travelers: Snowball

New Zealand

Dan Lemmon, Visual FX Supervisor

Weta Digital Ltd.

U2 and Green Day "The Saints

Are Coming'

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Sway Studio

A VFX Journey Through Pan's Labyrinth With CafeFX

Everett Burrell, Visual Effects Supervisor

CafeFX, Inc.

Vigorsol: The Legend United Kingdom

Ben Dawkins, Director The Moving Picture Company

World Trade Center

United Kinadom

Michael Ellis, VFX Supervisor

Double Negative

Location
Room 20 A-D

Davs & Hours

Sunday, 5 August Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August

1 – 6 pm 9 am – 7 pm 9 am – 6 pm 9 am – 6 pm 9 am – 3:30 pm

Emerging Technologies

Digital innovations that change the way we work, live, and play.

Emerging Technologies presents creative, innovative technologies and applications in many fields, including but not limited to: displays, robotics, input devices, interaction techniques, computer vision, sensors, audio, speech, biometrics, wearable computing, information, data and scientific visualization, biotechnology, graphics, collaborative environments, and design.

And in several domains, including but not limited to: medicine, music, entertainment, education, home, business, aerospace, communication, transportation, security, military, and technologies for the aging and/or disabled.

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Courant Institute of Mathematical Sciences

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The Media Studio, Inc.

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Rob Lindeman

Worcester Polytechnic Institute

Blair MacIntyre

Georgia Institute of Technology

Karon MacLean

The University of British Columbia

Joe Marks

Walt Disney Animation Studios

Vibeke Sorensen

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Installation Coordinator

Preston J. Smith EDS - Disaster Recover Team

Administrative Support Laurie Schall

Talley Management, Inc.

Buzz: Measuring and Visualizing Conference Crowds

Buzz explores how technology could be used to understand the movement of attendees at a conference or trade show. Not the fine details of movement of individuals, but the gross patterns of a population. In this instance: a marketplace, and in particular, the marketplace of ideas called SIGGRAPH 2007 Emerging Technologies.

Enhanced Life

Responsive buildings can be more efficient, safer, more secure, and more enriching places to live and work.

Goals

The Ambient Intelligence project at the Mitsubishi Electric Research Laboratories is focused on creating sensing platforms and perceptual software that will inform the building systems of the future. To protect the privacy of inhabitants, the project specifically favors simple sensors to undercut more invasive modalities such as cameras and microphones.

Innovations

Buzz is a low-cost, power efficient, privacy-respecting sensor network research platform that supports deployment of enormous test systems. The Ambient Intelligence project uses that platform to develop a toolbox of perceptual technologies that enable detection and interpretation of the patterns of behavior within a building or public space.

Vision

Sensors are deployed throughout Emerging Technologies to detect the ebb and flow of visitors. A touch table presents visitors with information about the exhibits within a visualization of the crowds: what's buzz-worthy, what time is good to avoid the crowds, what's open right now?

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BYU-BYU-View: A Wind Communication Interface

BYU-BYU-View adds air to the interaction between a user and a virtual environment, and communication through a network, by integrating the graphics presentation with wind inputs and outputs on a special screen.

Enhanced Life

As a telecommunication tool, BYU-BYU-View could enable a system that presents a cutaneous sensation that distant lovers are sharing the same space. As an interface in a virtual environment, it could add the cutaneous sensation of air movement to sight and sound in a novel game. It could become a new input tool for people who have limited abilities with their hands or feet, or a communication method for deaf or blind people that delivers information directly to the skin.

Goals

Establishment of a totally new interface that uses air as a tool of communication and interaction.

Innovations

This system includes three core innovations:

- The screen uses a special air-permeable material, developed by Teijin Nestex Limited, that can display images with the same clarity and beauty as a movie screen. It naturally integrates the input/output of air movement and projected images.
- To sense and present air movement, a behind-the-screen system of sensors and output mechanisms detects incoming air movement and delivers air movement to the user.
- The screen is not only a graphical display, but also a wind interface between a virtual environment and the real world.

Vision

This prototype system was exhibited in the IVRC2006 virtual reality contest, where it won second prize. Since then, it has been revised to realize more dynamic wind output using a blower array for the output and heat sensors for detection of the input.

At SIGGRAPH 2007, BYU-BYU-View powers two experiences:

- An application that uses real video images for telecommunication. Two users see each other's faces on separate screens and communicate by breathing or blowing toward their screens. Their air movements transmit cutaneous sensations for real-time communication.
- · An application that combines real images and physical simulation. The virtual environment intervenes between the users, who experience wind as an information medium. For example: virtual air hockey, in which players move a puck with air movements, and virtual breakout, in which players use breath to move blocks.

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CoGAME: Manipulation by Projection

An example of an application enhanced by the "manipulation-by-projection" technique, this cooperative game allows players to visually and intuitively control a robot with projectors. Players interchangeably move and connect their projected images to create a path that leads the robot to its goal.

Enhanced Life

With a handheld projector, players detect robot states and surroundings, deliver commands to the robot, and confirm the commands and robot reactions. At the same time, other players can monitor the information and interact with the robot without conflicts.

CoGAME enables a simple robot with only a few sensors and interfaces to perform many intelligent functions. As the system recognizes robot states and locations, it plans robot movements, and the robot behaves as if it is independently well-adapted to the environment.

Goals

To enable users to accurately, intuitively, and visually manipulate a variety of movable objects such as robots and toys and share their manipulation with other users.

Innovations

Each component of the CoGAME system is based on existing technology, but the application and the combination of components are innovative. It includes two novel components for intuitive, visual robot control:

- Images are constantly corrected with a tilt sensor to detect the projector's position and orientation, and to enhance the robot's image comprehension.
- To lead a robot along a path on a projected display, a camera attached to a mobile device detects and estimates its position and orientation. Then the system transforms these data from a camera image plane to a corrected image plane and generates a robot-move ment plan.

The CoGAME interface could be used in a wide range of applications in a robot-rich future. For example, a user could project a furniture layout onto a real office environment, and CoGAME-controlled robots could move and place the furniture by following the projected image.

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DLP® 3D TV

When coordinated with a 3D digital video or graphic signal, a light source, and a projection lens, DLP technology enables stereo 3D display capabilities in high definition at high frame rates.

Enhanced Life

DLP technology will enable consumers to view 3D content in their homes. Because the 3D HDTV mode is very inexpensive to implement, viewers will realize the benefit of compelling, high-definition, 3D viewing in addition to conventional high-definition capability.

To enable compelling 3D, 2D, and HD viewing experiences and to provide incentives for content providers to target home viewers with 3D media.

Innovations

The DLP chip contains a rectangular array of up to two million hingemounted microscopic mirrors. Each of these micro-mirrors measures less than one-fifth the width of a human hair. The bit-streamed image code entering the semiconductor directs each mirror to switch on and off up to several thousand times per second. This fast switching rate enables a 120-Hz frame rate, which allows display of 3D stereographic images at 60 Hz per eye without flicker.

Vision

Consumer 3D-ready HDTVs now exist, so content providers can begin creating movies and games that add another level of immersion for consumers. Over one million 3D-ready DLP televisions are expected to be in consumers' homes by mid-2008.

Contact

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E Ink Electrophoretic Displays

E lnk technology is enabling a new generation of revolutionary reflective displays with ultra-low power consumption, a thin flexible form, and daylight readability. The viewer has the experience of reading from paper, yet can still update the information. The technology is now being incorporated into many applications, including electronic readers, cell phones, signage, and memory devices.

Enhanced Life

Electronic paper will enable us to read and see up-to-date information with a paper-like experience without the negative environmental impact of cutting down forests and disposing of thousands of tons of paper every day or the high energy wastage of conventional electronic displays.

Goals

To develop the current monochrome electronic ink for high-volume production and enable full-color, flexible, rollable displays.

E lnk technology is based on highly engineered, oppositely charged pigment particles suspended in a clear liquid. This suspension is then encapsulated, and the microcapsules are subsequently coated roll-to-roll as a monolayer on flexible substrates. Depending on the polarity of the voltage applied, one particle moves to the front of the display, and the other one moves to the back, where it is hidden. Once it is generated, the image remains for years without power until a new electrical impulse is applied.

Vision

E Ink electronic paper technology will surround us in the future. It will be available everywhere as a thin non-breakable form factor, daylight readability, low power, light weight, and/or flexibility is desired in a changeable visual medium. Electronic books, electronic billboards, watches, memory cards, smart cards, and shelf labels are only the beginning.

Contact

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Fibratus Tactile Sensor

A new interface device that uses the property of reflection to evaluate the sense of gentle touch, which is not possible with current tactile sensors.

Enhanced Life

When users stroke the Fibratus Tactile Sensor, their fingers create dynamic flows that can be used as inputs to computer systems. When softer fibers are utilized, the sensor is even capable of sensing air motion. This enhanced sensitivity could enable new types of interfaces. For example, in near-future robots, the sensor could evaluate softer contact sensations than existing tactile sensors, which could encourage adoption of robots in daily life.

Goals

To develop a new tactile sensing system that supports:

- · Multi sensing, contact-less interactive devices
- · Sensing by means of active patterns
- Thin device and rapid sensing

nnovations

This new optical tactile sensor can detect surface deformation with high precision by applying the principle of an optical lever. Transparent silicone rubber is used as the flexible mirror surface. Because of the distribution of the refractive index between air and the silicone rubber, the boundary surface has a reflection characteristic similar to that of a mirror. The flexible mirror surface is implanted with fibratus salience, the hardness of which is a little greater than that of silicone rubber. From this salience, the surface of the fibratus is considered to be the contact surface, and the reflection characteristics remain unchanged.

Future work involves additional applications of the Fibratus Tactile Sensor and further exploitation of its properties.

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Freqtric Game

Freqtric Game applies human skin contact to game control in a shoot-emup game, a rhythm-action game, and a robot-battle game.

Enhanced Life

Today, telecommunication technologies (telephone, email, internet chat, etc.) penetrate daily life in many ways. Though it is convenient and necessary to use these electronic modes of communication, face-to-face and body-to-body communication are also necessary to restore inherent sensitivity to human life. Freqtric Game enhances interpersonal communication in both virtual space and real space.

Goal

To enhance enjoyment and intimacy in videogames with skin contact.

Innovations

Freqtric Games uses human skin as a conductor. The sensing module can detect not only skin contact but also intensity of skin contact. This is a unique game-input technique.

This project is one of a series called Freqtric Project, (introduced last year with Freqtric Drums SIGGRAPH 2006 Emerging Technologies), and is a device that turns an audience surrounding a performer into drums so that the performer, as a drummer, can communicate with audience members as if they were a set of drums.

Vision

Freqtric Game is part of an ongoing effort to develop "touch as an interface" or "BtoB (Body-to-Body) Tactile" technologies that allow users to play games not only in a virtual space but also in a real space. This new way of playing video games is small and low-cost, so it is easy to embed in current game controllers.

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Full-Scale Saccade-Based Display: Public/Private Image Presentation Based on Gaze-Contingent Visual Illusion

A dramatically improved saccade-based display that can present life-size, full-color photographic images and 2D displays based on eye-movement tracking without a screen, even in mid-air, with only a single line of LEDs.

Enhanced Life

In an augmented-reality visual display, this method can superimpose various types of information onto real environments, which enables interesting applications in art, entertainment, and low-cost image display for commercial advertising. For example, a light column could display information in midair between two buildings. The system can also be used to produce visual effects in live performances, so audiences can perceive different 2D images based on eye movements.

Goals

To construct a novel system in which eye movement influences image display.

Innovations

Widely used micro-processors can not support the high-speed sequence control required for detecting the temporal dynamics of saccadic eye movement (its duration is only 50 ms). This system uses an optimized FPGA (field-programmable gate array) circuit and a large LED array (2.0 meters in height) to present life-size, full-color images.

Two-dimensional images can be perceived only when the timing of the saccade coincides with the flash timing of the light source. This system overcomes this drawback by inducing viewers' eye movement for presentation of public information and by measuring viewers' eye movement for private presentation. For public presentation, the eye movements are induced in the reflection with visual, auditory, or tactile stimulus, and the system presents 2D images to many viewers simultaneously. For private presentation, the saccade is measured with an electro-ocular graph-based sensor in real time, and the saccade-based display is activated at the same time the saccade begins. When saccade detection accuracy is high, the observer clearly perceives 2D information.

Using this measurement method, the system selectively presents different images to each viewer using only one light array, and the system can handle highly confidential information. Because it synchronizes the display with induced or tracked saccades, it represents a vast improvement in saccade-based display technology.

Vision

Pursuing new display techniques based on knowledge of human visual perception can open up new possibilities for designing visual display devices.

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Fuwapica Suite

The Fuwapica Suite is a set of furniture (table and chairs) that interacts with people near it. For example, it detects colors specified by a user and then gradually changes the color of a chair when the user sits in it.

Enhanced Life

In Fuwapica Suite, users apply their favorite colors to interact directly with furniture and indirectly with other people. It provides a modest and natural way to convey emotional states to others, since emotions are often associated with colors

Goals

The relationship between human beings and artifacts has changed since the Industrial Revolution, and some of the emotional feeling in that relationship seems to be lost. The goal of this project is to show that furniture (and other artifacts) can express emotions just as humans can. Eventually, the project will develop hardware and software kits for rapid creation of such truly interactive furniture.

Innovations

The core technical innovation of the Fuwapica Suite is in its lighting system. As it senses the color of physical objects and human interaction with them, it immediately computes colors and expresses them. Special hardware and software allow designers (not engineers) to manipulate the sensors and light boxes with common Flash tools. Color sensors and light-control boxes were developed with tri-luminous LEDs and micro-controllers as building blocks.

Vision

This technology will be commercially available in one or two years.

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Globe4D

This interactive, four-dimensional globe is a projection of the Earth's surface on a physical sphere. It shows the historical movement of the continents as its main feature, but it is also capable of displaying all kinds of other geographical data such as climate changes, plant growth, radiation, rainfall, forest fires, seasons, airplane routes, and more.

Enhanced Life

Globe4D extends the functionality of traditional globes found in many households and schools by allowing people of all ages and backgrounds to learn in an entertaining way about how a planet changes over time.

Goal

This simple but highly educational, entertaining multi-user device for globe viewing is designed to help people, especially kids, learn about the earth and realize in a playful and tactile manner how it has changed and still changes over time.

Innovations

Globe4D's main innovation is its method of mapping spatio-temporal geographic data on a physical sphere. It is not a flat representation of a changing planet but a real physical globe featuring hands-on interactivity.

Vision

Flat screens in classrooms and museums are outdated when it comes to learning about the earth. The earth is a sphere, and so is Globe4D. The earth changes over time, and so does Globe4D. You can play on earth, and you can play with Globe4D. You can learn on earth, and you can learn from Globe4D.

Don't put kids behind computers. Put computers behind things!

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GlowBots: Robots That Evolve Relationships

GlowBots are small wheeled robots that develop complex relationships between each other and with their owners. They develop attractive patterns that are affected both by user interaction and communication between the robots.

Enhanced Life

GlowBots shows that it is possible to develop new and novel products that last considerably longer and have a much more rewarding interaction than robots that are available today. The project is based on an attempt to move beyond the traditional view of robots and find a new basis for designing robot applications. For example:

- Robots shaped like indoor plants that would subtly guide people at an airport.
- An amusement park guide that would enhance the overall experience by encouraging visitors' feelings of fear and delight.
- Robots designed to transfer the special relationship that some people have with unusual pets, such as snakes, lizards, and spiders, to robot designs without transferring the anthropomorphic properties of the

GlowBots demonstrates one practical result of this process and shows how robots can interact with humans in much more subtle, but also more sustainable, ways than the robots we have come to know from science fiction and spectacular industry demonstrations.

The project began with a series of interviews with people who have unusual pets. Interview results were dissected into categories and recombined to form distinct, intrinsic clusters of characteristics. These clusters were used as raw material for four personas, one of which revealed real-world attributes of a man who owns an unusual pet:

- He does not pet his pets, nor is he interested in the pets' distinct personalities.
- He is interested in breeding his pets to create nice patterns.
- He enjoys reading about his pets and often meets up with people who have similar pets, to admire or even exchange pets.

This persona led to creation of GlowBots as "agents" that would be attractive to the persona. The agents can evolve interesting patterns over time, but it is a lengthy process and might not always succeed. Agents are equipped with color displays on their backs and have one or more sensors for light, movement, and sound. Sensing is different for different agents, and each agent has a unique color pattern, developed from meetings with other agents that share its environment. Touching the agents in a particular way temporarily freezes a pattern. Achieving a nice pattern requires several agent-agent interactions and an attention to timing.

Innovations

GlowBots technology is based on an open experimental robot platform, the e-Puck, developed at l'Ecole Polytechnique Fédérale de Lausanne. Despite its size, the platform contains an impressive number of components: eight IR proximity sensors, one camera, three microphones, a three-axis accelerometer, a speaker, two stepper motors, a Bluetooth interface, a number of LEDs, a PIC micro controller, and a 12-step-mode selector.

The GlowBots development project focused on creating a system that is inexpensive, visually appealing, and energy-efficient. It expanded the e-Puck's communication capacity and created a small display consisting of 148 light LEDs that can be individually controlled. The display turret consists of two sandwiched PCBs, one controller board that takes higher-level commands from the e-Puck through a serial port, and one matrix board holding the LEDs. The LEDs are quite cheap in large quantities, and they can be pulsed by short bursts of electricity to make them brighter and more energy efficient.

Vision

In the current GlowBots system, when users gently pick up or put their hands around the GlowBots, they react immediately and visibly by producing new patterns on the display. The user can affect the new pattern by actuating the various sensors with sound or light. When the GlowBot is reintroduced to its robot colleauges, it starts to mingle with them and share its new pattern. The other robots are affected by it and start to evolve their own patterns and share them with their neighbors in turn. To observers, the effect is like sowing a seed that spreads among the robot population as they move around.

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Gravity Grabber: Wearable Haptic Display to Present Virtual Mass Sensation

A new form of ubiquitous haptic interaction that delivers weight sensations of virtual objects. Gravity Grabber is derived from the novel insight that fingerpad deformation provides a reliable sensation of weight even when proprioceptive sensation is absent.

Enhanced Life

As motors and batteries evolve, this device could be downsized and unwired for use in daily life, for example as a grasping controller in entertainment systems or as a force-feedback device for operating a virtual reality environment. Because it is small enough to be worn on a finger, it can be used in combination with conventional mouse-based interfaces. And it provides ubiquitous teleoperation, since the wearable and wireless device can be used to manipulate a robot from any location.

Goals

The goal of this project is to meet the increasing demand for realistic haptic feedback with a simple haptic display that can present realistic sensations of objects. The project team focused on the mass of a virtual object, which contributes to weight and inertia in haptic interaction. If the virtual mass is presented by a haptic device, the user perceives a more realistic sensation of the virtual object.

Innovations

Conventional wisdom assumes that it is necessary to reproduce proprioceptive sensation in order to present a weight sensation, so most haptic displays that present virtual weight are designed to reproduce the proprioceptive sensation with heavy, grounded devices. However, deformation of the fingerpads due to the weight of an object can generate a reliable weight sensation even when the proprioceptive sensations on the wrist and arm are absent. This enables realization of a simple, wearable haptic display for virtual weight.

Gravity Grabber reproduces fingerpad deformation with a small pair of motors and a belt. To present a grip sensation, the dual motors are driven in opposite directions of rotation so that they roll up the belt, which delivers a vertical stress to the user's fingerpad. To present a gravity sensation, the motors are driven in the same direction of rotation. With these devices on their index fingers and thumbs, users can perceive virtual grip, gravity, and inertia on their fingerpads during various behaviors such as shaking and rotational motion.

Vision

At SIGGRAPH 2007, users will experience Gravity Grabber in two demonstrations:

- · In a virtual reality environment, users sense water moving in a glass even though they are actually holding an empty glass.
- A videogame-based entertainment system that features haptic interaction with a virtual mass.

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Grimage: Markerless 3D Interactive

Grimage combines multi-camera 3D modeling, physical simulation, and parallel execution for a new immersive experience. Put any object into the interaction space, and it is instantaneously modeled in 3D and injected into a virtual world populated with solid and soft objects. Push them, catch them, and squeeze them.

Enhanced Life

Various applications could benefit from this technology. For example, telepresence that enables people and objects to be present in virtual spaces. Today presence is often limited to sound and video. Avatars can be built, but it is usually difficult to recognize someone from an avatar, and their movements are limited. Real-time 3D modeling of people and objects enables high-quality virtual clones. It eases interaction between people in different physical locations who meet in a common virtual space (a social community, a workplace, a game, a learning and training environment, etc.). Potential Grimage applications range from surgery planning to training for assembly tasks and training for management of critical situations (earthquakes, fires, accidents, etc.).

The goal of the project is to move one step toward the next generation of virtual reality applications. The system is designed to extract maximum information from a set of calibrated cameras, avoiding intrusive markers. And it enables construction of large simulations involving a variety of complex objects. Obviously this approach can be useful in combination with other systems. For example, Grimage could easily be complemented with a stereoscopic display or a haptic device like the Spidar to further improve the sense of immersion.

Innovations

The core innovations are the following:

- Integration of complex software components developed by various people. This has only been possible as the system relies on component-oriented and data-flow-oriented middleware (the FlowVR library) that enforces modular software development.
- 3D modeling based on the exact polyhedral visual-hull algorithm for obtaining high-quality textured 3D models.
- Physical simulations using Sofa software, which relies on a scene graph structure to organize and process the various models in a simulation. These models represent simulation components (deformable models, collision models, instruments, etc.).
- Various parallelization levels: a pipeline-level parallelization supported by the FlowVR library, a parallel 3D modeling algorithm also implemented with FlowVR, multi-display rendering implemented with FlowVR Render, a FlowVR extension defining a transport protocol for graphics primitives, and a GPU parallelization used by Sofa to accelerate some if its computations.

Users experience a sequence of three manipulations:

- Interaction with virtual solid objects. With their hands, users push down a pyramid of virtual cubes or real balls.
- Interaction with soft objects that users can try to catch and squeeze.
- Virtual cloning: at a given moment real elements in the interaction space are captured in a 3D snapshot. This model is then turned into a soft element that users can play with. For example, users can virtualize their hands and then squeeze the virtual hands.

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Haptic Telexistence

Haptic Telexistence provides highly realistic haptic interaction among humans and objects located in remote places. Human interaction will be dramatically improved by this concept, which perceives us as the properties of an object.

Enhanced Life

With conventional systems, we can only perceive the stiffness of an object. But with Haptic Telexistence, we can also perceive the exact shape of an object, and more natural and dexterous object manipulations become possible. This simplifies complex tasks such as telesurgery and 3D modeling.

Because this system can present properties such as texture and temperature, it will support dramatic improvements in human life. For example, not only will we be able to shake hands with people at remote locations but we will also be able to feel the warmth of their hands. While shopping on the web, we will be able to check the texture of an article before purchase.

Our ultimate goal is to present all the haptic sensations through a masterslave system. Using current telepresence systems, we can interact with humans or objects even if they are located in remote places or in virtual environments. We can watch, listen, touch, and move objects. However, the properties of an object are not present in these systems, and that reduces realism and interactivity. Haptic Telexistence aims to provide highly realistic haptic interaction among humans and objects in remote places.

Innovations

The system consists of four innovative devices: a dexterous slave hand, finger-shaped haptic sensor for the slave hand, an encounter-type master hand, and an electro-tactile display. Each of these devices has more advantages than the corresponding conventional ones. In addition, integrating them to realize Haptic Telexistence is also a technical innovation.

Vision

Because haptic and robotic technologies continue to improve rapidly, we believe that this technology will be fully realized with 10 years.

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High-Dynamic-Range Projector

High-dynamic-range (HDR) projection systems place two image modulators in series to optically multiply two images. The dynamic range of the final image is therefore approximately the product of the contrast of the two modulators.

Enhanced Life

Digital projection needs to compete with analog film in image quality. The largest gap in this competition is the relatively low-dynamic-range luminance of current digital projectors. This novel digital system is capable of displaying images with sufficient dynamic range to rival analog film.

Goals

To display video on a projection screen with a dynamic range of luminance values approaching the capabilities of the human visual system.

Combination of two modulated images of different spatial resolution.

Optical compensation in high-resolution modulation.

Psycho-physics theory to support concept.

Optically efficient projector design.

Accounting for limitations and capabilities of the human visual system to optimize projector design.

Vision

HDR technology can enable more realistic projection of video in digital cinema and home theater environments. The necessary changes in the design of a conventional digital projector are relatively small.

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Holographic and Action Capture Techniques

An interactive virtual reality system based on computer-vision-assisted, real-time human action capturing: a 3D scene composer that provides a combination of live-captured humans and CG objects visualized on a holographic 3D display to achieve a very realistic, unconstrained 3D experience for multiple users.

Enhanced Life

The combination of 3D displays and 3D capturing devices will find novel applications in many fields, such as: entertainment (live plays, game development, amusement parks), media arts, cultural heritage and education (for example, museum exhibits), biomechanics, advertising, training and simulation, scientific visualization, CAD-CAM, gaming, communications (tele-presence, 3D TV), military and security applications, and any system that requires high-quality interactive or live 3D representation. Nearly full immersion in virtual reality will significantly enhance human creativity.

Goals

To show a working example of a system with real-time captured data of human actors complete with the geometry, texturing, and dynamics of the body, insert the acquired 3D data stream into a high-quality 3D scenario, and present the resulting scene to the naked eye in true 3D or on a large-scale holographic display. Using their body parts, humans represented by the captured data interact naturally and comfortably with presented virtual objects.

Innovations

This is the first practical demonstration of a system capable of computing and displaying the 3D geometry, texture, and dynamics of a complex object model in real time and creating accurate, interactive, three-dimensional, animated (up to 25 fps) images in true 3D with full, observer-independent, continuous parallax within a large workspace.

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An Interactive 360-Degree Light Field Display

This display renders the light field of an object - with correct geometric, accommodation and vergence cues in a horizontal plane - by rendering and projecting imagery at 5,000 frames per second onto a spinning anisotropic reflector. Motion-tracked vertical parallax is then employed to allow for unrestricted 3D movement with correct geometric cues.

Enhanced Life

The display is:

- · Autostereoscopic, requiring no special viewing glasses
- Omnidirectional, allowing viewers to be situated anywhere around it
- Multiview, producing a correct rendition of the light field with the correct horizontal parallax and vertical perspective for any viewer situated in the viewing plane.

The system leverages commodity graphics and projection display hardware. As this technology matures, it will be capable of full-color, high-refresh-rate imagery in another three years and will be commercially available for high-end visualization at about that time. If price-points continue to fall for graphics and display technologies as they have been for the past 10 years, this approach will be viable at the consumer level in seven years.

Goals

To create increasingly high-fidelity displays that can project a rendered object's light-field into space at all angles.

Innovations

Development of this system required innovation on a number of fronts, including:

- Techniques for acquiring and rendering interactive 3D OpenGL graphics and photographed light fields.
- Projection math to generate the correct perspective on the display for any given viewer height and distance.
- An innovative spinning anisotropically diffusing mirror used to reflect high-speed frames to different viewing positions.
- Real-time update of the projector at very high frame rates using standard DVI graphics hardware.
- Development of a very-fast-update projector. This was achieved by modifying an off-the-shelf projector to use a new DLP drive card with custom-programmed FPGA-based circuitry.

Vision

As we cover our world with flat electronic displays, it is important to realize that flat surfaces represent only a small portion of our physical world. Our real world is made of objects, in all their three-dimensional glory. When we have pasted displays on every surface we can find, the next generation of displays will begin to represent the physical world around us, but this progression will not succeed unless it is completely invisible to the user: no special glasses, no fuzzy pictures, and no small viewing zones.

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inter-glow

A system that facilitates close interaction and communication among users by using multiplexed visible-light communication technology. When users shine lamps on a table in a miniature living room, the system recognizes which lamps are illuminatined and produces family conversations.

Enhanced Life

This project facilitates close interaction and communication among users in real spaces. It enables natural interaction without vivid awareness that light is being employed as a medium.

Goals

To use light to interact naturally with pervasive computing environments and to promote communication and cooperation among people in the environments.

Innovations

Several core technical innovations are demonstrated in this project, including:

- Multiplexed visible-light communication technology with pulse frequency.
- The first use of visible-light communication technology as input in interactive systems, which promote communication and cooperation among users.
- A system design that supports natural human conversation depending on the situation.

Vision

In the near future, pervasive computing environments will become more common, and all light fixtures could include visible-light communication technology. With a system like inter-glow, people could interact naturally with their environments without being aware that ambient light is conveying information. This technology could also inspire artists and engineers to develop innovative artworks and applications.

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Lensless Stereo-Microscopic Imaging

This lensless stereo microscope outputs field-sequential 3D video using a single imaging chip and two LEDs to track the 3D trajectory of dozens of plankton in a drop of water. The robust, compact system is inexpensive and easy to use for remote environmental sensing and high-throughput combinatorial biological experiments.

Enhanced Life

Users wear LCD shutter glasses to observe live plankton (rotifers) swimming around in 3D on a CRT monitor plugged into the lensless stereo microscope. They can watch plankton feed, move their food around, attach themselves to the glass cover, and reproduce (all the rotifers are females, and they clone themselves once a day).

Goals

This project has three main goals:

- To make a simple, inexpensive, and easy-to-use microscope for
- To track microorganisms in 3D to monitor the behavior and health of microorganisms in the field and lab.
- To use simple microorganisms as chemical and environmental sensors by establishing a baseline for their behavior and detecting deviations from the baseline.

Innovations

The system uses commercial digital imaging sensors as microscopes. The sensors exploit geometry and lighting to enhance sensitivity, produce highcontrast images, and support easier and faster image processing. Fieldsynchronous illumination enables tracking of multiple microscopic targets in 3D, and creation of 3D images from a single image sensor.

Vision

This inexpensive, simple, yet powerful microscope combines digital silicon technology with stereo imaging for two main purposes:

Educational. The microscope is easier to use than conventional lens microscopes. In the next one to three years, students and teachers should benefit from using them in the classroom.

Scientific. The microscope is well adapted to automation. Over the next 10 years, this technology could enhance systems that monitor dozens of microscopes for large population studies, environmental monitoring, and combinational studies to examine how chemicals and genetics affect the operation and behavior of multicellular aquatic organisms.

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Microsoft Surface

Surface turns an ordinary tabletop into a vibrant, interactive surface. The product provides effortless interaction with digital content through natural gestures, touch, and physical objects. In essence, it's a surface that comes to life for exploring, learning, sharing, creating, buying, and much more.

Enhanced Life

Soon to be available in restaurants, hotels, retail establishments, and public entertainment venues, Surface will transform the way people shop, dine, entertain, and live.

Goals

To break down traditional barriers between people and technology, and change the way people interact with content, from photos to maps to menus. The intuitive user interface works without a traditional mouse or keyboard, allowing people to interact with content and information by using their hands and natural movements.

Innovations

- Direct interaction. Users can actually "grab" digital information through touch and desture.
- · Multi-touch contact. Surface computing recognizes many points of contact simultaneously.
- Multi-user experience. The horizontal form factor makes it easy for several people to work together.
- · Object recognition. Users can place physical objects on the surface to trigger different types of digital responses.

Vision

This technology can be applied to many types of surfaces, from tabletops and counters to the hallway mirror. Imagine ordering a beverage during a meal with just the tap of a finger. Surface computing will make such experiences easy and natural.

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New Multi-Touch Interaction Techniques for Visual Content Creation

The latest development of JazzMutant's multi-touch technology with a particular focus on visual and graphic arts, and some new advanced interaction techniques involving a multi-touch display in combination with other input devices.

Enhanced Life

Because of their versatility, multi-touch displays are appropriate for both productive and entertaining computing. By providing ergonomic design with optimized workflow, they improve user experience and make interaction with computers much more intuitive, playful, and efficient.

JazzMutant delivers advanced control solutions for musicians and sound engineers, but video and graphic artists have requested similar systems for their applications. This system demonstrates early attempts to fulfill those

Innovations

The JazzMutant resistive technology system differs from optical systems in its form factor. Because it is both scalable and portable, it can be integrated in a wide variety of devices. It is exceptionally reliable, even in harsh environments and can be used in conjunction with other pointing devices such as stylus. This enables richer interaction techniques that cannot be achieved with touch input alone.

Vision

In the past two years, many good multi-touch interaction techniques have been introduced, but most of them are merely focused on zoomable user interfaces. This approach is only the tip of the iceberg. The key to success for future multi-touch systems is multi-modality: appropriate integration of several input devices.

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The Next Generation of MEMS-Based Displays: QUALCOMM's IMOD Technology

The industry's first interferometric modulator (IMOD) display for mobile devices, an innovative technology that offers low power consumption and a superior, consistent viewing experience in a wide range of lighting conditions, including bright sunlight.

Enhanced Life

With IMOD technology, displays are always viewable and provide more usage time per charge.

QUALCOMM MEMS Technologies' goal is to bring to market an innovative, must-have technology that provides a superior user experience.

Innovations

IMOD technology is an innovation unlike anything on the market today. As a reflective technology, IMOD displays harness ambient light and use it to their advantage, dramatically increasing the display's efficiency. In addition, IMOD displays eliminate polarizers and color filters, which absorb light and reduce efficiency.

Vision

IMOD displays will enable an optimum user experience for consumers who demand more from their wireless devices.

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One Laptop Per Child: The XO Laptop

A powerful learning tool created expressly for the poorest children in the world's most remote environments. With the XO, nations of the emerging world can leapfrog decades of development and immediately transform the content and quality of their children's learning.

Enhanced Life

The XO is a window to the world's huge storehouse of knowledge. Children in emerging nations will use it to develop their full creative and problem-solving potential.

Goals

This is an education project, not a laptop project. The goal is to provide children around the world with new opportunities to explore, experiment, and express themselves with a machine designed for "learning learning."

Innovations

The XO is a flexible, ultra-low-cost, power-efficient, responsive, and durable machine for the emerging world. It can be hand powered. It has no crashable hard drive. And its open-source software supports dual-mode display, mesh networking, and SUGAR, a new take on the traditional GUI interface.

Vision

The XO was developed by the One Laptop per Child Foundation, which is devoted to giving children in even the most remote regions an opportunity to tap into their own potential and contribute to the world community.

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Optical Sensors Embedded Within AMLCD Panels: Design and Applications

This new approach to data input into active-matrix liquid-crystal display (AMLCD) panels integrates an array of thin-film transistor (TFT) optical sensors into the a-Si backplane of the AMLCD. Features include touchpanel input, hand recognition, and image capture.

Enhanced Life

In the age of information, display systems are critical components. This sensor array embedded into AMLCDs allows flexible touch capability, with multiple fingers and gestures. It will become the dominant tool for interaction with a broad range of systems, from mobile devices to desktop monitors. The imaging capability and hard-copy capture open many options, and could allow the AMLCD "look" to be displayed in documents and hand gestures. The system also includes a hand-recognition algorithm using the same sensor array, which could enable the display to check or confirm identity.

Goal

To demonstrate the technical viability of hand recognition and image capture in an optical-touch display.

This is the first sensor-array device built with TFT optical sensors in the AMLCD panels. It proves the viability of using existing TFTs as the sensors. In addition to the TFT circuit design, which was the first of its kind, the system supports the use of a light pen and a laser pointer, and it includes full imaging capability.

Vision

This system demonstrates improved interaction with LCDs in several modes: finger touch, light pen, hand recognition, gesture inputs, and gesture storage. It is far more than a regular touch-interaction device.

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Prakash: Lighting-Aware Motion Capture for **Dynamic Virtual Sets**

This project demonstrates new methods of flexible scene capture (including motion, orientation, and incident illumination) that create a dynamic "virtual recording set." The system uses tracking tags that are imperceptible under attire, and inserted computer graphics elements can match the lighting on the presenter, making the technique ideal for real-time broadcast.

Enhanced Life

Techniques for accessible motion capture systems are quite underdeveloped. While several mature techniques are available, they require work areas dedicated to esoteric systems, hours of data post-processing, and/ or high-speed cameras.

This system foregoes these expensive parts, so it is much less expensive. Motion capture no longer requires specially designated spaces, special lighting, or huge investments.

Fields that would immediately benefit from accessible motion-capture include rehabilitation clinics and independent biomedical researchers in many fields: physics, anthropology, and sociology, for example. Even veterinary clinics could use accessible motion-tracking systems to examine animal gaits and behaviors for diagnosis. And artists everywhere will benefit, because current motion-capture systems are too complex and expensive.

Goals

To support accessible motion capture that is easy, yet powerful, for authoring and enhancement of visual effects for video production. The system is based on tracking technology that does not impose complicated set ups, while providing interactive feedback and maintaining incredibly accurate measurements, to the millimeter.

Innovations

This system delivers performance equivalent to the best existing optical motion-capture methods, plus:

- It can record orientation and incident illumination at the marker tags. For the motion capture portion, it tracks the position of marker tags at a rate of 500 Hz, with 8-bit location precision, and with self-identifying tags. For the orientation, it strategically configures a set of modulated light transmitters and uses light modulation and demodulation techniques to estimate individual attributes at the locations of the receiving photosensors. Although these measurements are made at a sparse set of points in a scene, their richness allows extrapolation within a small range. These measured scene attributes can be used to factorize a captured video sequence and manipulate the video based on the resulting attributes. In addition, this factorization is accomplished at a very high speed (much faster than a typical camera could achieve), allowing manipulation of individual video frames at an intra-image level. All this is accomplished with strikingly simple hardware components.
- Since each tag records its own location, there are no reacquisition issues in the case of occlusion. So the system can support an unlimited number of tags while maintaining the same fast capture rate.
- In a virtual-set application, the flexibility of the tags becomes apparent. The system not only captures motion and lighting conditions in their actual setting, but also the tags worn by an actor are easily hidden by theatrical wardrobe so they are invisible in the video recording, and they do not interfere with performance.

A key advantage of this approach is that it is based on components developed by the rapidly advancing fields of optical communication and solidstate lighting, which allows the system to capture photometric quantities without added software or hardware overhead. Marker-based techniques that use other physical media cannot capture photometric properties. There is one disadvanatage to this approach. Tags must be in the line of sight of the transmitters (at least those that label the space they occupy), so the system does not completely overcome the usual challenges of dealing with limited dynamic range when the ambient lighting is very strong, dealing with loss of communication due to occlusions (shadows), and handling multi-path distortions due to secondary scattering of light. This means that the system is not appropriate to every scenario, but it still allows much more freedom in tracking on location and in dynamic settings than current systems. In the next generations of this technique, these issues can be revisited for further refinement.

Vision

The one predicable impact of opening exclusive techniques to a wider audience has always been the unpredictability of innovation. With the proliferation of digital video on the web, video authoring and animation are becoming an essential part of the online experience. In this YouTubeempowered world, virtual sets at home or school may become as routine as the HTML editors of the recent past.

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SCP.Camera

ShootCut&PlayCamera (SCP.Camera) combines a real-time montage interface and an immersive device. It gives filmmakers or camera operators an easy way to set up their work for previsualization. Users can activate actors' animations, record the virtual world, and edit sequences before exporting them to 3D software.

Enhanced Life

SCP.Camera provides a new way to prepare and plan movie production. Because it makes choices available in real time, users can create camera movements from a virtual environment, visualize them immediately, and edit them: cut, order, extend, etc. They can try every move and every point of view, and anticipate and test frames, camera movements, lighting layout, and other environmental effects.

Goals

The main goal of SCP.Camera is to create a new decision-making tool for directors and CG animation artists. But SCP.Camera can also be used in other domains. In architecture, it could be used to view a building project before it is built, or a house before buying it.

Innovations

SCP.Camera combines a montage interface with a motion capture device in the same application. With SCP.Camera, the aim is not to record reality anymore, but to record virtual environments. Inspired by a traditional double-track montage system, SCP.Camera uses a real-time 3D engine to allow users to create sequences from an original 3D environment or an imported environment. Within a single interface, coupled with an immersive device, users can freely interact with 3D space, try out traditional or unusual camera movements, and record displacements as the camera moves. Then they can create, modify, and visualize their work infinitely. This use of real-time 3D tehonoloy delivers dramatic flexibility and speed in production (no rendering time required).

Vision

Future applications might allow distant users to work together in a virtual environment. Camera operators, lighting engineers, and actors might collaborate on a virtual stage. In a playful variation, SCP.Camera might become a virtual reporter game in which players become news reporters trying to film a scoop.

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Soap: A Pointing and Gaming Device for the Living Room and Anywhere Else

A unified mouse and mousepad that can be operated in mid-air. Soap is suitable for several off-the-desktop applications such as wall displays, Windows Media Center, slide presentations, and video games.

Enhanced Life

Computers are moving into the living room and the classroom, but they are making those environments feel more like offices. Soap allows users to operate their computers while sitting, walking, or running, alleviating the need to create more office-like setups to support mouse usage.

Goals

To create a new input device that offers many of the benefits of a mouse and allows users to roam around freely.

Innovations

Soap demonstrates two novel approaches:

- The combination of a mouse and a mousepad in a single device.
- The device is controlled by users manipulating a hard object that floats inside a stretchy hull.

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The Sound of Touch

A new instrument for real-time capture and sensitive physical stimulation of sound samples using digital convolution. Users operate a hand-held wand to record sound, then brush, scrape, strike or otherwise physically manipulate this sound against a "texture kit" of physical objects.

Enhanced Life

The Sound of Touch enables people to manipulate sound samples in a way that is much more immediate and intuitive than current digital tools. The system's technology and interface designs adopt characteristics of acoustic instruments, making samples that are recorded on-the-spot malleable and flexible through continuous gestural interaction with physical textures and resonant objects.

To demonstrate a system that gives children and adults a truly new way to interact with sound.

Innovations

The Sound of Touch builds on a technique for continuous digital convolution developed by Roberto Aimi for creation of semi-acoustic musical instruments. A stand-alone wand incorporates both a microphone for recording samples and a piezoelectric sensor for stimulating the samples. A "texture kit" enables sonic experimentation with a wide range of physical textures and resonant objects.

Because it makes sonic exploration so intuitive, a generation of musicians could adopt this system as their preferred synthesis technique in the next 10 years. Ultimately, the system could become a commercial product that would enable people to paint with sound wherever and whenever they want, either for professional sound-design projects or just for play.

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Spinning-Disc 3D Television

A novel LED-projection technology based on the simple structure of spinning-disc television. To display a 3D image, the system replaces the traditional light source with an LED array. Viewers can see different images from different angles.

Enhanced Life

With this new type of display, people will be able to enjoy 3D television at home.

Goals

To create a new 3D television technology for everyday home viewing.

Innovations

The key technical innovation is a new LED-projection technology, which requires only one LED per view.

Vision

Viewers can see both flat images and spatial-motion images without special glasses.

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String Walker

A locomotion interface that uses eight strings actuated by motor-pulley mechanisms mounted on a turntable. String Walker enables users to maintain their positions while walking in various directions in virtual environments.

Enhanced Life

Proprioceptive feedback for walking is not provided in most virtual environments. Research on locomotion interfaces is still in a preliminary state, but some virtual-environment applications, such as training or visual simulation, require good locomotion sensation. Over the next decade, effective locomotion devices will be developed for these applications.

Goals

To develop a string-based locomotion interface that enables users to maintain position while engaging in omni-directional walking. In order to achieve this goal, string tension must be generated effectively and consistently.

Innovations

The major innovation of this work is a new actuation mechanism that cancels the displacement of the walker. It is the latest in a series of attempts to create a realistic, practical locomotion interface:

- Treadmills. This is the easiest way to realize an infinite floor, but a treadmill can not support omni-directional walking.
- A motion foot-pad can simulate omni-directional walking and uneven surfaces, but it is very difficult to use.
- The CirculaFloor was developed to overcome the drawbacks of treadmills and foot-pads, but it is so complicated that it does not support sufficient walking momentum.
- Powered Shoes (SIGGRAPH 2006 Emerging Technologies), which employs roller skates that are actuated by motors and flexible shafts, supports omni-directional walking, but the walker can not perform a variety of gaits.
- The CirculaFloor (SIGGRAPH 2004 Emerging Technologies), which was developed to overcome the drawbacks of treadmills and footpads, but it is so complicated that it does not support sufficient walking momentum.

In the String Walker, four strings connected to each shoe are actuated by motor-pulley mechanisms. Each motor is equipped with a rotary encoder, and the motor-pulley mechanisms measure shoe position and orientation. When the shoes move, the strings pull them in the opposite direction and cancel the step. The position of the walker is fixed in the real world by this computer-controlled tension of the strings. The motor-pulley mechanisms are mounted on a motor-driven turntable that rotates with the direction of the walker, which enables omni-directional walking. The four strings can pull the shoes in any direction, so the walker can perform a variety of gaits, including side-walking or backward walking.

Vision

This is the first relatively simple locomotion interface that allows users to enjoy omni-directional walking while maintaining a consistent position in the real world.

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Contributors Hiroaki Yano Masaki Tomiyoshi University of Tsukuba

TORSO: Completion of Egocentric Telegnosis System

TORSO acquires natural visual information and accurately tracks the user's head motion. Earlier, conventional devices were only able to express the three-axis rotation of the neck, but TORSO goes beyond that capability to also express the neck's translational motion.

Enhanced Life

The device is positioned at a distance from and facing toward the user, who wears an HMD or HMP and experiences the image transmitted by TORSO: a view of the user as seen by a second person. In addition, the user can throw a soft object, such as a soft ball or a soft arrow, toward the device for interaction, which generates an uncanny ability to avoid or receive the object.

Goals

To develop a remote-meeting system that extends far beyond the traditional videophone and delivers a sensation of direct participation. The longrange goal of the project is creation of an entire telexistence system.

Innovations

The main feature of this system is that it can express the six degrees of freedom of the upper body plus the translational motion of the neck. It can also obtain natural visual information that is equivalent to human motion. Conventional imaging devices for head-mounted displays can achieve only three axes of rotation of the neck. TORSO achieves head motion in a remote environment that is very similar to human motion.

Vision

To achieve productive robot-human coexistence, human beings should be able to treat robots just as we treat ourselves. In the near future, using technologies like TORSO, we should be able to create a surrogate anthropomorphic robot that has a very high degree of realistic sensation and presence.

TORSO also has important implications for future shopping systems, in which we can actually experience products, and for entertainment and educational systems, in which we can see ourselves from the point of view of others.

Contact

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Transparent Cockpit

A vehicle cockpit that uses retro-reflective projection technology to improve operation, safety, and comfort.

Enhanced Life

With a transparent cockpit, drivers can easily drive a car through narrow streets and reverse direction because they can see the side of the road and the back of the car (operation). It also decreases accidents because drivers can recognize pedestrians or other obstacles (safety). And it presents a wider view of the sky or the landscape, so drivers have a liberating experience like that obtained while driving a convertible (comfort).

Goals

To help drivers move beyond the feeling that they are operating a vehicle. Instead, they will feel that they are running or flying by themselves. This goal will be achieved in the next few decades.

Innovations

Four innovations were synergized to realize the Transparent Cockpit:

- A display based on "optical camouflage" that superimposes an outside image of the vehicle onto the real world.
- A system of video cameras that acquires the images that surround the vehicle.
- A head-mounted X'tal visor equipped with a position-sensing device to generate images that can be viewed from any viewpoint in the
- An algorithm that positions the virtual screen to correctly project images of objects at any distance.

Vision

In the current version of Transparent Cockpit, SIGGRAPH 2007 attendees experience transparency in the door and ceiling regions while sitting in the cockpit prototype and wearing an X'tal visor. Within a few years, the full system will be implemented on an actual vehicle.

Contact

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TransPen & MimeoPad: A Playful Interface For Transferring a Graphic Image to Paper by Digital Rubbing

With these novel drawing tools, children and adults can use rubbing motions to transfer a digital image directly to paper and produce a drawing with a personal touch and natural texture, just as in traditional rubbing.

Enhanced Life

In about three years, people will be able to copy graphic images from a tablet PC onto paper with TransPen's digital rubbing technique. Users will enjoy the advantages of pen-based computing more intuitively. It will also be possible to commercialize TransPen & MimeoPad as children's drawing tools. Children will enjoy using TransPen to copy drawings (for example, popular cartoon characters) from RFID-embedded boards.

To develop an amusing drawing tool that makes digital rubbing possible.

Innovations

The core technical innovation is the physical mechanism of the prototype. Its development presented three difficult challenges:

- · Creation of a pen that maintains its tip at a constant length.
- Making the pen and the tablet tracker (a resonant circuit that detects signals from the tablet) coaxial, to support accurate coordinate matching.
- At a normal drawing speed, there was a significant system delay from the moment the TransPen sensed the location of the tip to the moment the solenoid was actuated. This problem was resolved by predicting the output coordinates with a basic dead-reckoning technique.

TransPen and MimeoPad represent a new interaction style in the future of ubiquitous computing. When TransPens of the same size and shape as an ordinary pencil become possible, and the MimeoPad is transformed into furniture, tables, doors, etc., people will be able to leave graphic data on everyday objects and places, and collect the information by rubbing on it with a TransPen.

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Information and Communications University

Video Agents

In this interactive cyberspace environment, users interact with autonomous agents generated from video images of real-world creatures. Each agent has autonomy, personality traits, and behaviors that reflect the results of various interactions, which are determined by an emotional model.

Goals

Our primary goal is to provide users with an entertaining cyberspace environment that is also educational. The system's entertainment value is derived from allowing users to easily construct interactive environments that include many of their favorite creatures as autonomous video agents. Users can create video agents based on their real-world pets and allow the video agents to live in cyberspace forever, even after the real-world pet is gone. The system's educational value stems from the knowledge users gain through interactive experiences.

Another goal of this project is to produce a system that facilitates movie or cinema creation. This system can be a powerful tool for generating background scenes of animals or humans (extras) moving or walking.

With this project, we are also creating an ecosystem in cyberspace for science, education, and relaxation. A cyberspace ecosystem can be based on a real environment; however, our ecosystem is interactive, and each creature that autonomously exists in it has an individual personality. Such a novel approach to interactive ecosystem simulation carefully addresses the fragile balance and tradeoff between the autonomy of the simulated ecosystem and freedom of user interaction. This project will be useful for future computer simulations of natural ecological systems (not only zoological but botanical environments) for science, education, and relaxation.

Innovations

The most important feature of our work is that agents are generated from live video taken from the real world. Our work successfully integrates such diverse technologies as image processing, computer vision, database, artificial intelligence, and post production. Based on these technologies, a graphical user interface allows users to create content with video agents without creating program code. The following are the core technical innovations:

- Image Processing: extraction of a target creature in each frame of video, segmentation of the video sequence based on feature values of the extracted target creatures, and establishment of links among video segments.
- · Behavior Generation: fuzzy logic is used to determine the behavior of each autonomous agent by emotional and physical parameters, and personality is implemented based on Big Five factors.
- Video Database: automatic generation of a video database and automatic editing of retrieved video segments based on generated behavior.
- User Interface: a graphical tool to create video agents and an authoring tool to create an interactive cyberspace in which autonomous video agents move.

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Yoshinori Hirano Emiko Hama

Fumio Kishino

Osaka University

► Location Room 28 A-E Days & Hours Monday, 6 August Tuesday, 7 August

8 am - midnight 12:01 am - 5 pm

FJORG!

In the first international FJORG! — an iron-animator event at SIGGRAPH 2007 — competing three-person teams of CG animators forgo sleep and endure multiple staged distractions for 32 straight hours. Their goal is to resist the distractions and meet the deadline for creating the best character-driven animation the world has ever seen. In return for their efforts, these teams of artists will earn the attention of recruiters and talent from the top studios in computer graphics, feature films, animation, and game production.

Jury & Vikings FJORG! Jury

FJORG! Chair Patricia Beckmann-Wells DreamWorks SKG

FJORG! Associate Chair Samuel Lord Black AutoDesk, Inc.

Peter Braccio Viking Mandolin Player Monterey Bay Aquarium Research Institute

Megan Orosz Sony Pictures Imageworks

Jill Smolin
Pedestrian Priestess of Salt Water
Sacrifices

Dori Littell Herrick Woodbury University

Arno Kroner

Woodbury University and Walt Disney Animation Studios

Becky Wible

The Art Center Design College

Maureen Furness

California Institute of the Arts

Marla Schweppe

Rochester Institute of Technology

Terrence Masson

Digital Fauxtography

Show Runners

Patricia Beckmann-Wells DreamWorks SKG

Becky Wible

The Art Center Design College

Arno Kroner

Woodbury University and Walt Disney Animation Studios

System Administration

Mark Barnes Tom Craigen Ricky Rieckenberg Walt Disney Animation Studios

Videographers

Adam Agardy DreamWorks SKG

Christopher Tolle 910 media

DJ Entertainment & Walkers of the Iron Plank

Tommy Bacorn DreamWorks SKG

Walt Disney Animation Studios

Streaming Media and News Coverage

Dan Sarto Andy Strum

Animation World Network

Guest Speakers & Mentoring Educators

Monday, 6 August, 8:30 am Tuesday, 7 August, 11 am Cognitive Abilities Analysis Bob Berger

US Air Force pilot (retired); former faculty member, US Air Force Academy; PhD, cognitive psychology.

Monday, 6 August, 8:30 am Production Methods Dori Littell Herrick

Chair of Animation, Woodbury University; former Co-Producer, Development at Warner Feature Animation; former Assistant Commercial Director, Pepper Films.

Monday, 6 August, 10 am Story and Character Tom Sito

Animator, Director, Adjunct Professor (University of Southern California, University of California, Los Angeles), author of Drawing the Line: the Untold Story of the Animators Unions from Bosko to Bart Simpson.

Monday, 6 August, 4 pm Movement Kevin Koch

Animator, Animation Guild President, Instructor at Animation Mentor.

FJORG! Teams

Commandos

Joseph Daniels
David Suroviec, Crystal Dynamics
Jedidiah Mitchell, PSYOP

Hellanimation
Gil Gavish
Amit Chachek
Tomer Tvizer

The Pillage People
Jeff Gill
Will White
Robin Holstein
Savannah College of Art and Design

Animação Barros Melo Leonardo Domingues da Silva Antonio Farias Neto Pedro Augusto

The Seeds
Jacob Patrick
Wade Hampton
Hock Wong

Impulse Joe Garhan Ryan Drag Denny Jovic Illinois Institute of Art - Schaumburg

The Henchmen Ryan Chen Arjun Rihan John Helton University of Southern California

The Grumpy Dumplin Harry Porudominsky Dane Stogner Snoot Entertainment

Mike Safianoff, Tippett Studio

Team Mocap Jim Levasseur Tomas Jech W. Jacob Gardner Bowling Green State University

Arconyx Kenny Roy Jake Bergman Dan Barker Arconyx Animation Studios

Ricochet Minoru Okamoto Yoko Otani Daisuke Miyagawa Polygon Pictures

Picture This
Juan Pablo Sans
Matthew Doble
Julio Galan
Miami International University
of Art and Design

Trible-Beat
William Moran
Blake Penido
Nick Bane
Woodbury University

TEKKAI Keiko Arase Yusuke Miyazawa Masataka Ajima

Prosthetic Foreheads Kristin Callahan, 3D Energy

Erick Rohn
Ferris Webby
Rochester Institute of Technology

FJORG! Judges

Simon Allen

Animator Pixar Animation Studios

Scott Benza

Animation Director, "Transformers" Industrial Light & Magic

Spencer Cook

Animation Director, "Spider-Man 3" Sony Pictures Imageworks

Raman Hui

Co-Director, "Shrek the Third" DreamWorks Animation SKG

Gregorz JonkajtysDirecting Artist

Marcin Kobylecki Executive Producer

"The Ark"
(SIGGRAPH 2007 Computer Animation Festival Best of Show)

David Smith

Story
DreamWorks Animation SKG

Provided Software

Autodesk Maya and 3ds Max Adobe Photoshop, Flash, and After Effects Modo Softimage TMZ

Provided Hardware

Wacom Tablets

These applications are generously provided by our friends at the above companies and are subject to change without notice. In the spirit of Iron Animator (working with the assets provided), contestants are not allowed to bring any other software and hardware for use during the competition.

Sponsored By

DreamWorks
Advanced Micro Devices, INC.
(AMD)
Hewlett Packard

Location

Mezzanine Level and Rooms 15A, 15B, 16A, 16B

Days & Hours

Sunday, 5 August Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August 1 – 6 pm 11 am – 11 pm 9 am – 6 pm 9 am – 6 pm 9 am – 2 pm

Guerilla Studio

Powerful workstations, versatile software, artists, scientists, engineers, and you. Consult with the Guerilla Studio team of practitioners, artists in residence, and multimedia experts to realize your most imaginative concepts in 2D, 3D, 4D, and n-dimensional media. Then use its network of advanced input and output devices to create art in every subdiscipline of computer graphics and interactive techniques.

Special Acknowledgements:

The Guerilla Studio thanks Adobe Systems Incorporated, Intel Corporation, Penn State Altoona, and Kendall College of Art and Design for their generous support.

Guerilla Studio Committees

Guerilla Studio Chair Rebecca Strzelec Penn State Altoona

Committee

Lyn Bishop lynbishop.com

Peter Braccio Monterey Bay Aquarium Research Institute

AC Capehart Linden Labs

Phil CarrizziKendall College of Art and Design

Gene CooperFour Chambers Studio

Bob GouldIndependent Videographer

Karl Lang Lumita.com Amy Morie

University of Florida

Terry Nauheim

New York Institute of Technology

John Sjolander

Penn State Altoona

Makai Smith

Bentley Systems

Terry Vanden Akker

Kendall College of Art and Design

Kimberly Voigt

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Harriete Estel Berman

Matthew Hamon

Philip Mallory Jones

Mike and Maaike

Michael Wright

Onsite Sub-Committee

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Arizona State University

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Malissa Becker

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Anzona State Oniversity

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Waterfall Productions

Jessica Borchetta

Rachel Braccio

John Brock Independent Artist

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Eric McMaster Arizona State University

Tracy McSheery PhaseSpace Inc.

Chris Murphy
Color Remedies

Kumkum Nadig Srishti School of Art, Design & Technology

Richard Nelipovich Indiana University-Purdue University Fort Wayne

Dave Nutty Images by Nutty

Technologies and Creative Areas

Guerilla Studio Committees (Continued)

Rita Nygren FX4.net

Helena Pasquarella Get Flipped!, Inc.

Jennifer Schimidt School of the Museum of Fine Arts

Raleigh Souther Get Flipped!, Inc. Courtney Starrett

Winthrop University

Naomi Stein Four Chambers Studio

Scott Van Note Kreysler and Associates

Claire Weigand Naturally Photography by Monni

Chris Williams Knowledge Adventure

Artists In Residence Program Area Chief: Phil Carrizzi

This year, the Guerilla Studio is hosting six emerging and established resident artists who come from 2D, 3D, digital, non-digital, production, one-of-a-kind, large, and small scale-traditions. These artists will have their own group workspace, integrated into the overall studio design, to help facilitate the best possible mix of their personal visions and skills, group and collaborative energies, and the array of technical resources represented in the Guerilla Studio. They will blend their dynamic individual studio practices, in media not always well represented at SIGGRAPH, with the emerging technologies and public nature of the Guerilla Studio to help their work evolve and provide inspiration to attendees.

The 2007 Artists in Residence are: Harriete Estel Berman Matthew Hamon Philip Mallory Jones Mike and Maaike Michael Wright

Animation Area

Area Chief: Gene Cooper

Explore both the very high tech and the low tech of animation techniques, processes, and technologies. Only 5-10 minutes to spare? Sit down and have some fun at our stop-motion animation stations as you build a quick animation to take home. A little more time to spare? Meet one of our creative specialists, who will be ready to open up the engine compartments of their own work, get into the nuts and bolts of its design, and then hand over the keys to see what you can do. Just interested in watching? Attend one of our presentations showcasing a number of projects and techniques. Browsing for new tools? Sit down at one of our open stations where you'll be able to explore some of the latest and best of tools available. Anyway you cut it, there's something for everyone. Most of all, have fun creating, exploring, and taking advantage of the amazing tools and projects that are available in the Guerilla Studio.

Collaboration Area

Area Chief: Lyn Bishop

Often the creative process is singular and individual, but when the work becomes collaborative, the resulting imagery becomes more than the sum of its parts. In the Collaboration Space, attendees share collaboration, cultural exchange, and cooperative art-making. Artists and attendees collaborate, in real time, on networked projects with students from Srishti School of Art, Design and Technology in Bangalore, India. Live collaborative sessions with Srishti take place each morning. We invite you to drop in anytime to get involved with the international collaboration or local collaborations with other conference attendees and artists.

Drawing Circle

Area Chief: Dave Nutty

As in the past, the drawing circle will be available to attendees to drop in and sketch away their thoughts and/or stress or doodle up the next masterpiece on an informal basis. This year, we've added a few projects that allow attendees and artists to contribute to a community image montage and other projects throughout the week.

Guerilla Editions: AKA the 2D Area

Area Chief: Karl Lang

This is the heart of the Guerilla Studio. Images produced by artists in the Guerilla Studio are received via our gigabit network. After receipt, the images are processed and rendered as fine-art pigment prints. We use the latest technology, fine-art papers, and archival pigment inks that resist fading for hundreds of years. Master printmakers and even a color scientist manage all aspects of the color workflow and printing. Technologies from Epson, X-Rite, Colorbyte, and other companies are used to produce museum-quality prints. If you have questions about color management, calibration, file prep, or image permanence, ask the staff at Guerilla Editions.

3D Area

Area Chief: Makai Smith

In the 3D area, attendees are invited to work with state-of-the-art 3D data-capture systems, modeling packages, and rapid-prototyping equipment. In this creative environment, you can generate 3D digital objects either by modeling in the latest version of various full-featured software packages or by using 3D data-capture devices to scan actual objects (bring an object, or yourself, or sculpt an object out of clay; we'll even provide the clay). Then your computer models can be "manufactured" in three dimensions (translated into physical reality) with a bank of rapid-prototyping machines, printed two dimensionally using various large- and small-format printing processes, or animated.

If this is your first time in the Guerilla Studio, our top-flight volunteers are available to help you through the process, and a whole series of 3D tutorials is planned throughout the week. If you are a "jaded professional," you can do some intense comparison and tech-testing or take this opportunity to try doing things differently or more experimentally than you might in a normal work environment. This is a studio, after all. Dive in. Spend the day, or the week, investigating the latest in 3D data capture, modeling, and rapid prototyping.

Technologies and Creative Areas

Lenticular Printing

Area Chief: Raleigh Souther

Create spectacular 3D lenticular effects with lenticular training from Chris Williams (Knowledge Gaming) and Raleigh Souther (Get Flipped!, Inc.). They show how to create 3D depth in any 2D images, explore the process of mastering any file for a full 3D or animated lenticular effect, and help attendees produce a finished lenticular 3D image. Attendees can also use Get Flipped! Pro Studio software to experience a 3D environment and an actual 3D lenticular image capture.

Daily signups (15 minutes or two hours): Sunday: 1 - 6 pm

Monday - Wednesday: 9 am - noon and 1 - 6 pm Thursday: 9 am- 5 pm

Motion Capture, Courtesy of PhaseSpace

Area Chief: Tracy McSheery

PhaseSpace invites you to try out the PhaseSpace IM-PULSE motion-capture system in the SIGGRAPH 2007 Guerilla Studio. Sign up now to secure your 15 minutes of fame! We will light you up with our active LED system, and then give you the floor to do with as you will. After you are done, you will receive the motion capture data that was recorded during your performance.

Previous SIGGRAPH participants had great experiences with our system, and PhaseSpace wants to have a repeat of the dynamic and exciting performances of previous years. There are just a few things we ask that you to keep in mind to make the most of your studio

- 1. The better prepared you are for your motion-capture session, the more effective your time will be. Each capture session will be limited to 15 minutes. So practice your dance routine or stunts, have your music cued up. make sure your props are ready ahead of time.
- 2. PhaseSpace's high speed, high-resolution motioncapture system will capture your movements in real time with low latency (10 msec). However, it cannot enable you to manage that back flip that you haven't done in 10 years, or the splits you wish you could do. Its up to you be safe and to perform within your physical limits. We recommend stretching, and practicing, ahead of time so your body is ready for what you throw at it.
- 3. The data recorded during your session will be made available to you for free sometime after your session. The data are not private and may be used by PhaseSpace as a means to demonstrate our system's motion capture ability. The data cannot be copyrighted.
- 4. Sign up now to reserve your studio time. Each capture session is allowed a maximum of 15 minutes. The PhaseSpace staff looks forward to watching you bring to life your creative energy!

Show and Tell

Area Chief: Bob Gould

Need information? Can't find what you need? Want to see what has been going on in the Guerilla Studio? Too overwhelmed to know were to begin? Show and Tell encompasses all of this and so much more!

Wish You Were Here

Area Chief: Terry Nauheim

An interactive sound installation that uses the model of sound greeting cards as a vehicle for sound transactions. Attendees take part in a collective soundscape through playing sound greeting cards as musical instruments. Inspired by music boxes, we chose the sound greeting card because is a contemporary example of mechanical playback. The music box also offers a limited version of a tune through its limited tonal range and playback length. We are interested in these limitations and find commonalities between them and digital sound formats. For example, low sample rates and compression formats are designed for portability and accessibility while giving up the integrity and quality of their original sounds. On the other hand, this economizing of sound has yielded a new audio palette that can be heard throughout popular culture, including computer-game soundtracks, ring tones, talking toys, and pop music. Our sounds are fragments of field recordings brought into the Guerilla Studio. Through attendee selections and playback, the origin of these sounds will be recombined to recontextualize them into the SIGGRAPH 2007 context.

TeraDRE

Area Chief: Laura Arns

The TeraDRE at Purdue University is a distributedrendering environment with over 4,000 render nodes. Distributed rendering greatly reduces the time needed to produce a large animation and frees up lab machines for other uses. Attendees are encouraged to both bring material from home to be rendered and create new material in the Studio for rendering via TeraDRE. Submit your rendering jobs to the TeraDRE and then "pick up' your completed renders at a later time via the web. Jobs can be submitted for a variety of environments, such as Maya, Blender, and POVRay.

Video Area: Software Playing Nice Area Chiefs: Terry Vanden Akker

The G-Vid Team uses mainly filtered video footage with an emphasis on compositing different footage from different software applications. Final editing is done in Final Cut Pro. The team and SIGGRAPH 2007 attendees shoot the background elements and live action in DV in and around the conference. Then we create characters in Flash and Lightwave 3D, but we do a simple cell-shade rendering to save texturing and lighting time. We create narration to carry the story, so there will be no need for more time-consuming lip sync. Keeping the background and foreground elements separate, we then composite in After Effects to add depth and to intensify colors as the characters' emotions change.

Location
Sails Pavilion

Days & Hours

Saturday, 4 August Sunday, 5 August Monday, 6 August Tuesday, 7 August Wednesday, 8 August Thursday, 9 August

8 am - 6 pm 8 am - 6 pm 8 am - 6 pm 8 am - 6 pm

8 am - 4 pm

 $1 - 7 \, pm$

International Resources

Connect with colleagues and friends from around the world. The International Center offers bilingual tours of SIGGRAPH 2007 programs, informal translation services, and space for meetings, talks, and demonstrations.

International Resources Committee

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International Resources Co-Chair English University of Bristol cater@siggraph.org

Scott Lang

International Resources Co-Chair English Bergen County Academies Scott_lang@siggraph.org

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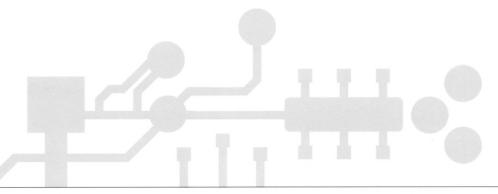
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Multilingual Tours

To join a tour of the Art Gallery in your language, please meet five minutes before the tour begins at the Art Gallery entrance, Room 20 A-D. Spaces are limited and are available on a first-come, first-served basis.

For tour reservations, please send your name, email address, and the day and time of your preferred tour to: international-tours@siggraph.org

Sandro Alberti, International Resources Tour Coordinator, will confirm your space (if available). Tour reservations are also available at the International Resources Center in the Sails Pavilion.

Monday, 6 August

9 - 9:45 am

Chinese: Mandarin

10 - 10:45 am 11 - 11:45 am Japanese Korean

Noon - 12:45 pm Spanish

3 - 3:45 pm

Japanese

Tuesday, 7 August

9 - 9:45 am

Korean

10 - 10:45 am 11 - 11:45 am

Japanese Spanish

3 - 3:45 pm

Chinese: Mandarin

4 - 4:45 pm

Japanese

Wednesday, 8 August

10 - 10:45 am

Chinese: Mandarin

11 - 11:45 am

Japanese

Noon - 12:45 pm Korean

2 - 2:45 pm

Japanese

3 - 3:45 pm

Spanish

International Resources Events

Informative international sessions on the current state of computer graphics around the world, organized by representatives of ACM SIGGRAPH and affiliated societies. See the web site for descriptions of the International Resources Events and the Schedule near the International Center Entrance for updates.

Location:

International Center/Sails Pavilion

Sunday, 5 August

10 am - Noon

Overview of SIGGRAPH 2007 (With Japanese interpreter)

4 - 5 pm

SEAGRAPH, ANZGRAPH, and GRAPHITE Meeting

Monday, 6 August

11:30 am - 1 pm

Inter-Society for the Electronic Arts (ISEA) Open Forum

4 - 5 pm

CG in Latino Countries

Tuesday, 7 August

10 - 11 am

CG Works by Japanese Young Creators

11 am - Noon

Application of CG in Manufacturing in Japan

4 - 5 pm

Korean Attendees Meeting

Wednesday, 8 August

9 - 10 am

SIGGRAPH Traveling Art Show Meeting

Noon - 1:30 pm

ACM SIGGRAPH Professional and Student Chapters Start-Up Meeting

3 - 4 pm

AFRIGRAPH Meeting (African Graphics Association)

Thursday, 9 August

1 - 2 pm

Eurographics: Now Blooming in Spring!

GraphicsNet

Share your gratitude with the volunteer crew of infrastructure experts who organize the high-bandwidth network that delivers access to every machine in the convention center. GraphicsNet is the electronic communications backbone of SIGGRAPH 2007. Its high-bandwidth infrastructure serves as the link among the many conference programs and events, and as the gateway to the global graphics community. GraphicsNet is comprised of fiber and Fast Ethernet (100Mbs) links connecting the presentation rooms for Courses, Educators Program, Emerging Technologies, Guerilla Studio, Panels, Papers, Sketches, and Special Sessions.

GraphicsNet Committee

Swaroop Shivarajapura

GraphicsNet Chair

Purdue University Network for Computational Nanotechnology

Carlos Cardenas

Tyco Electronics

Joe Cychosz

Purdue University Network for Computational Nanotechnology

Larry Kauffman

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Lee County School District

John McInerney

Hewlett Packard

Kim Nankivell

Purdue University Calumet

Heather Ramsey

Cathy Sewell

Monterey Bay Aquarium Research Institute (MBARI)

David Spoelstra

MediaMachine, LLC

Justin Stimatze

XSV- Ex Student Volunteer

Student Volunteers

The Student Volunteers program offers selected high school, undergraduate, and graduate students from every discipline the opportunity to become an integral part of the annual SIGGRAPH conference. Students meet and learn directly from computer graphics and interactive media industry professionals, educators, and artists from around the world. They participate in a variety of activities while supporting conference programs, events, and attendees. Student Volunteers also have access to all programs, receptions, and many special events related to the conference in exchange for their service. Student Volunteers are some of the most visible people at the conference because they are stationed at nearly every program and event, providing assistance and direction.

Student Volunteers Committee

Matylda Czarnecka

Student Volunteers Program Chair The Bakersfield Californian

Jason Jerald

University of North Carolina at Chapel Hill

Mona Kasra

California State University, Northridge

Alex N. Lehmann

animoto GmbH, Munich

Michela (Mikki) Rose

Rhythm & Hues

Location

Rooms 29 A, 29 B, 29 C, 29 D

Birds of a Feather

Attendees who want to get together with others who share their interests, goals, technologies, environments, or backgrounds are invited to attend a Birds of a Feather event. For a listing of the Birds of a Feather days and times see the SIGGRAPH 2007 Conference Locator.

Contact:

3-D Printing for Art and Visualization

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ACM SIGGRAPH Carto BOF

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Monique Shih

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Blender Foundation, artist/developer showcase

Ton Rooosendal

ton@blender.org

Blender Foundation, community meeting

Ton Rooosendal

ton@blender.org

CG-Arts/EIZOSHIMBUN Inspection

Party Meeting

Ayumi Miyai

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Computer Arts Society

Tony Longson

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Computer Graphics Pioneers

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DIVERSE-flexible open source VE API

John Kelso

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ICC on color management in Movie Production

Lars Borg

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IEEE Visualization Conference Committee

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IGDA Game Development Series

Jason Della Rocca

jason@igda.org

Interactive Gaming Tools

Bipin B Agravat

agravatb@yahoo.com

International Virtual Reality Contest (IVRC)

Akhiko Shirai

shirai@mail.com

Leonardo Town Hall Meeting

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Mobile 3D Graphics

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Molecular Graphics

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MUVEW Networkina

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NVID!A Gelato Users Meeting

Shannon Upchurch

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Open GL BOF: Most Widely-adopted 2D&3D Graphics API in the Industry

Barthold Lichtenbelt

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Open SG BOF

Dirk Reiners

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Open Source Software Showcase

Eskil Steenberg

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OpenScene Graph BOF

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Production Tracking, Methods,

Issues and Challenges

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Ringling College School Alumni Reception

Terri Arnell

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Rochester Institute of Technology

Alumni Reception

Barbara Carney bacrar@rit.edu

Sharing Ideas in Teaching 3D Animation

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SPEC/GPC

Bob Cramlitt

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Stony Brook University Center for Visual Computing Reunion

Arie Kauffman

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Taipei ACM SIGGRAPH Reunion

Bing Yu Chen

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Temerity Pipeline Users Meeting

Jim Callahan

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Testing, CM and Computer Graphics

Anna Newman

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The 20th Opening Barrel at SIGGRAPH 2007

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Candace Rodeman

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The UGLY Duckling and Me!

Irene Sparre Hjortho

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Tokyo ACM SIGGRAPH Chapter Party

Yukio Ando

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UNC Reunion at SIGGRAPH

Mina Lin

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VERSE-Content Creation Pipelining

Eskil Steenberg

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Women in Animation Meet and Greet

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Committees

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IP Marketplace Associate Co-Chair Patricia Beckmann-Wells
DreamWorks Animation SKG

IP Marketplace Co-Chair Bill Kovacs (25 October 1949 - 30 May 2006)

Outreach & XSV: Ex-Student Volunteer Mentoring Janet McAndless

Mitsubishi Electric Research Laboratories (MERL)

Panels & Special Sessions Co-Chair Jessica K. Hodgins Carnegie Mellon University

Panels & Special Sessions Co-Chair Jerome Solomon Industrial Light & Magic

Papers Chair Marc Levoy Stanford University

ACM SIGGRAPH Director for Publications Stephen N. Spencer University of Washington

Registration Experient

IBM Research

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SIGGRAPH 2008 Conference Chair Jacquelyn Martino

SIGGRAPH 2009 Conference Chair Ronen Barzel

SIGGRAPH 2010 Conference Chair Terrence Masson

Sketches & Posters Co-Chair Marc Alexa Technische Universität Berlin Sketches & Posters Co-Chair Adam Finkelstein

Princeton University

Student Volunteers Chair Matylda Czarnecka The Bakersfield Californian

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ACM Staff Liaison Jessica Fried ACM SIGGRAPH

ACM SIGGRAPH Organization

ACM SIGGRAPH

In the span of 30 years, ACM SIGGRAPH has grown from a handful of computer graphics enthusiasts to a diverse group of researchers, artists, developers, filmmakers, scientists, and other professionals who share an interest in computer graphics and interactive techniques. Our community values excellence, passion, integrity, volunteerism, and cross-disciplinary interaction. We sponsor not only the annual SIGGRAPH conference, but also focused symposia, chapters in cities throughout the world, awards, grants, educational resources, online resources, a public policy program, traveling art show, and the SIGGRAPH Video Review.

Membership

The SIGGRAPH community depends on your support. Please help by joining ACM SIGGRAPH for \$35 per year (\$28 per year for students and Eurographics members). In recognition of their support, members receive the Computer Graphics Quarterly online, discounted registrations for the annual conference and all other ACM SIGGRAPH sponsored programs, and access to the archive of SIGGRAPH Proceedings in the ACM Digital Library. For more details on membership or to join online, visit www.siggraph.org and select "Membership."

ACM

ACM SIGGRAPH's parent organization is ACM, the Association for Computing Machinery. ACM delivers resources that advance computing as a science and a profession, and is widely recognized as the premier organization for computing professionals. ACM serves as an umbrella organization for information-technology professionals and students, and ACM SIGGRAPH members may also join ACM. Benefits of adding ACM membership include discounts on cutting-edge magazines, journals, books, conferences, access to free, unlimited courses from the Professional Development Centre as well as job search and workplace tips in the Career Resource Centre. ACM members may subscribe to the ACM Digital Library and receive full access to the Guide to Computing Literature, which features more than 850,000 bibliographic citations from the vast world of computing. ACM membership also includes subscriptions to ACM's popular email alert news digests, TechNews and CareerNews, and the online newsletter MemberNet. For more information, see: www.acm.org

Professional & Student Chapters

Chapters of ACM SIGGRAPH exist in 70 cities in 16 countries around the world. They form an international multi-cultural network of people who develop, share, continue, and extend the work and achievements presented at the annual conference. Chapter members include those involved in research, development, education, art, gaming, visualization, and entertainment, just to name a few. Student chapters have been chartered in 10 schools. These groups host activities on their campuses that highlight computer graphics and interactive techniques. For more information about the ACM SIGGRAPH network of chapters, or if you would like to start a Professional or Student Chapter, visit: www.chapters.siggraph.org

Education Committee

ACM SIGGRAPH supports both computer graphics education and the use of computer graphics in education with curriculum studies, a web site for educators, and other educational projects. The ACM SIGGRAPH Education booth features SPACE (a juried exhibition of student animations and posters, and a display of student slides submitted by faculty from around the world) and SPICE, a juried exhibition of student web-based projects. For more information, see: www.siggraph.org/education

Symposia

ACM SIGGRAPH helps organize and sponsor focused conferences, workshops, and other symposia around the world on topics related to computer graphics and interactive techniques. These gatherings enable groups with specific interests to get together and exchange information. To see the list of symposia or find out how to get help for a conference you'd like to organize, stop by the ACM SIGGRAPH booth or visit: www.siggraph.org/conferences

Awards

ACM SIGGRAPH awards the prestigious Steven A. Coons award for lifetime achievement, the Computer Graphics Achievement Award for notable achievements, the Outstanding Service Award for extraordinary service to ACM SIGGRAPH by a volunteer, and the Significant New Researcher Award, for new contributors to our field. For a list of past award recipients, visit: www.siggraph.org/awards

Publications

ACM SIGGRAPH publications provide the world's leading forums for computer graphics research. Our conference series provides the largest source of citations in computer graphics literature. Publications are available to ACM SIGGRAPH members for substantial discounts. See: www.siggraph.org/publications

SIGGRAPH Video Review

SIGGRAPH Video Review is the world's most widely circulated video-based publication. Over 150 programs document the annual SIGGRAPH Computer Animation Festival, providing an unequaled opportunity to study state-of-theart computer graphics techniques, theory, and applications. New releases and recent issues available in DVD format. Visit the SIGGRAPH Review booth near the SIGGRAPH 2007 Store in the Hall F Lobby. For information, contact: www.svrorders@siggraph.org

SIGGRAPH 2008: Participate

Interested in participating in a future SIGGRAPH 2008 conference as a presenter or volunteer? On Tuesday, 7 August, 5-6:30 pm, stop by the SIGGRAPH 2008 Booth and talk with the volunteer leadership who organize the annual SIGGRAPH conference and discover how you can contribute your expertise and energy. All attendees are welcome. Questions and comments are encouraged.

www.siggraph.org/s2008

Volunteers!

All of the programs developed by ACM SIGGRAPH rely heavily on volunteer support. As a member, you are eligible to serve in some of ACM SIGGRAPH's most visible positions, including leading a professional chapter, chairing the annual conference, or serving on the ACM SIGGRAPH Executive Committee. Visit the ACM SIGGRAPH Booth or attend the ACM SIGGRAPH 2008 Participate session. For more information, see: www.siggraph.org/ gen-info/volunteerpositions.html

The following societies have cooperative agreements with ACM SIGGRAPH

Cooperative Agreements

ANZGRAPH

ANZGRAPH, the Australian and New Zealand Association for Computer Graphics, aims to provide a forum for individuals, organizations, and companies that have some direct interest in the area of computer graphics and interactive techniques. The goal is to foster the development of a computer graphics community in the Australasian region, provide a pathway to the community within our region, and facilitate participation as a member of ANZGRAPH both regionally and internationally.

www.anzgraph.org

AFRIGRAPH

AFRIGRAPH 2007, Rhodes University, Grahamstown, South Africa, 29-31 October, 2007 promotes computer graphics, virtual reality, and interactive techniques in Africa. It adapts these technologies to the realities of the African region, builds links between research and industry, encourages international participation of African researchers, and promotes computer graphics and interactive techniques as leading African research and application activities.

www.afrigraph.org www.saga.za.org/

China Cartoon Industry Forum (CCIF)

Supported by the Chinese government, the China Cartoon Industry Forum was founded and co-organized by the Cartoon Commission of China TV Artists Association, Beijing China Cartoon Media Co., Ltd.. As the most influential Chinese conference for cartoon, animation and digital-content providers, CCIF promotes industrialization, internationalization, and market development.

www.ccif.com.cn/

Computer Graphic Arts Society (CG-ARTS)

The Computer Graphics Arts Society, officially recognized by the Japanese government in 1992, is a publicly funded body dedicated to promoting Japanese computer graphics education. It is also dedicated to developing a distinctive Japanese media arts culture in the 21st century by extending support to media-arts-related activities and artists.

www.cgarts.or.jp/

Digital Content Association of Japan (DCAJ)

As digital content changes society and business, DCAJ is promoting production, distribution, and use of high-quality digital content that will lead today's networked society. www.dcaj.or.jp

Eurographics

Eurographics is a world-wide professional association, dedicated to advancing the state of the art in computer graphics and all related visual disciplines. Eurographics helps professionals, researchers and students to excel in their careers in Computer Graphics and Interactive Digital Media. The 2007 Eurographics conference will be in Prague, September 3-7. Next year, for the first time, Eurographics will become a Spring conference, to be held in Crete, Greece, April 14-18 2008, with deadlines in September 2007.

ACM SIGGRAPH has an affiliation agreement with Eurographics that entitles members who join both organizations to receive a discounted membership rate.

www.eg.org/

fmx

fmx is a specialty conference for the digital industry, addressing the interests of producers, distributors, production specialists and artists from all walks of the industry. Renowned speakers present behind-the-scenes techniques and innovative approaches from film and games production to industrial design, visualization, mobile entertainment and more. Top names in the industry present their latest achievements. Talents have the opportunity to interview with renowned companies or pitch new ideas to producers, all in an open atmosphere of qualified discussion and informal encounter. Knowledge and experience is shared at a level that has made fmx a set date for cg professionals all around the world. fmx/08 takes place from May 05-08, 2008 in Stuttgart, Germany.

www.fmx.de

Imagina

Imagina 2008 will be held at the Grimaldi Forum in Monte Carlo, 30 January - 1 February, 2008. Imagina focuses on the major challenges of the digital imaging industry. International experts provide insight into the state of the art and consider prospects in the main research areas of the imaging industry.

www.imagina.mc

Laval Virtual

The 10th International Conference on Virtual Reality will be held on 9-13 April, 2008, in Laval, France. Laval Virtual is where virtual reality users share their latest techniques from their fields of expertise.

www.laval-virtual.org

Pacific Graphics

The 15th Pacific Conference on Computer Graphics and Applications (Pacific Graphics) is an annual international conference on computer graphics and applications. Pacific Graphics 2007 will be held in Maui, Hawaii, 29 October -2 November, 2007 and will continue to provide a premium forum for researchers, developers, practitioners in the Pacific Rim and around the world to present and discuss new problems, solutions, and technologies in computer graphics and related areas.

http://mm.cse.wustl.edu/pg07/

SEAGRAPH

SEAGRAPH is a society headquartered in Singapore that promotes computer graphics technology and its applications in Southeast Asia. It facilitates interchanges and interactions between professionals and enthusiasts through organizing and supporting related events in the different countries in the region. The technology includes rendering techniques, graphical/geometric data compression, gaming, VR, general computer graphic techniques, and so forth.

www.seagraph.org

Seoul International Cartoon & Animation Festival (SICAF)

SICAF focuses on the dynamic new-media environment and presents current trends in cartoons and animation.

http://sicaf.or.kr/

Virtuality

Virtuality is a premier international event focused on computer graphics, interactive techniques, digital cinema, 3D animation, gaming, VFX, and real-time applications. Every year, Virtuality presents the most up-to-date discussion of cutting-edge applications of VR and interactive techniques in various fields and pays particular attention to industrial applications and the multifaceted universe of cinema, including presentations by world-class experts in animation and visual effects.

http://virtualityconference.it/

Important Notice

Registered attendees under the age of 16 must be accompanied by an adult at all times throughout the San Diego Convention Center, except for the Exhibition, where children under 16 are not permitted. Age verification is required for the Exhibition.

Days & Hours

Tuesday, 7 August Wednesday, 8 August Thursday, 9 August

9:30 am - 6 pm 9:30 am - 6 pm 9:30 am - 3:30 pm

Exhibition

Get up-close and hands-on with the newest hardware systems, software tools, and creative services from hundreds of companies. Explore the products, systems, techniques, ideas, and inspiration that are creating the next three generations of computer graphics and interactive techniques.

SIGGRAPH 2007 hosts the year's largest, most comprehensive exhibition of products and services for the computer graphics and interactive techniques marketplace, featuring the industry's established leaders and emerging challengers.

Products and Services on Display

2D Graphics

3D Graphics

3D Modeling

3D Rapid Prototyping

Aerospace and Automotive Applications

Animation

Architecture Applications

Artificial Intelligence

Authoring Software

Broadcast Design Software

Business and Financial Graphics

CAD/CAM/CAE/CIM

Commercial Game Engines/Equipment

Computer Video Interfacing

Conferences and Exhibition

Consulting

Contract Graphics/Programming

Data Analysis

Desktop Publishing

Desktop Video Production Software

Digital Cameras

Digital Imaging

Digital Video Hardware

Digital video riardy

DVD Authoring Tools Education/Training

Electronic Publishing

Encoders/Decoders

Engineering Applications

Furniture

Geographic Information Systems

Graphic Design Systems

Graphics Accelerator Boards

Graphics Standards Software

GroupWare

Haptic Input Devices

HDT\

Head-Mounted Displays

High-Performance Graphics Processors

High-Resolution Technologies

Image-Based Modeling

Image Management

Industrial Design

Information Visualization

Input Devices

Interface Tools

Mapping and Cartography

Medical Imaging Software

Mobile Computing

Monitors and Displays

Motion Capture

Multimedia Tools and Applications

Networking

OEM Components

Paint Systems

Printers and Plotters

Projectors

Publications

RAID Systems and Storage

Rendering and Modeling

Robotics

Scan Converters

Scanners

Scientific Applications

Scientific Visualization

Simulation

Storage Devices; Tape/Disk

Streaming Technology

Systems integrators

Terminals, Monitors, and Displays

Video Effects Equipment

Video Encoding and Compression

Video Servers

Visual Effects Software

VR Software

Web 3D

Web Graphics

Workstation

New Product Showcase Hall D Lobby

Special displays of significant innovations featured in the SIGGRAPH 2007 Exhibition. This is your opportunity to get acquainted with some of the latest, most significant products and services in the industry. Then visit the Exhibition booths that feature those products and services, for complete details on how they are changing computer graphics and interactive techniques.

EyeTech Digital Systems Inc. Booth 1824

ET3 eye tracker

The ET3 is a binocular eye-tracking input device designed for gaming, kiosks, research, and custom embedded solutions. OEM opportunities also available.

Bunkspeed Booth 1110

Hypershot

Computer software for generation of photographic imagines from 3D digital data.

Z Corporation Booth 948

Z Printer 450

The ZPrinter 450 makes color 3D printing accessible to everyone. The lowest-priced color 3D printer available, the ZPrinter 450 outputs brilliant color models with time-saving automation and an even easier printing process.

Prize Drawing

Visit Wiley at Booth 942 and register to win an Animation Book Package – with titles on Maya, Max, and more – plus a \$100 check card.



Visit RapidMind at Booth 259 and register to win a Sony Playstation 3.



Space Reservation

To purchase exhibition space for SIGGRAPH 2008, call or write:

SIGGRAPH 2008 Exhibition Management Hall-Erickson, Inc. 98 East Naperville Road Westmont, Illinois 60559 USA

+1.630.434.7779 +1.630.434.1216 fax exhibits@siggraph.org Location

Days & Hours

Tuesday, 7 August Wednesday, 8 August Thursday, 9 August

9:30 am - 6:00 pm 9:30 am - 6:00 pm 9:30 am - 3:30 pm

Exhibitor Tech Talks

Comprehensive summaries of the latest technologies in computer graphics and interactive techniques. SIGGRAPH 2007 exhibitors demonstrate software, hardware, and systems; answer questions; and host one-on-one conversations about how their applications improve professional and technical performance.

Accelerating With Cell: Programming With the Mercury Cell Accelerator Board and the Cell BE Processor Mercury Computer Systems, Inc. Tuesday, 7 August, 9:45 - 11:30 am

The accelerator model is ubiquitous in the computer graphics and image processing industry. This talk demonstrates how the Cell Accelerator Board, coupled with the right programming tools, brings about a new generation of performance and programmability in a PCI Express form factor. It provides a hardware overview and demonstration followed by a fast-paced introduction to the MultiCore Plus software suite for programming this unique hardware.

Leigh McLeod

Mercury Computer Systems 199 Riverneck Road Chelmsford, Massachusets 01824 USA A Unified Development Platform for Cell, GPU, and CPU Programming RapidMind Inc.

Tuesday, 7 August, 1 - 2:30 pm

Michael McCool, Chief Scientist at RapidMind, demonstrates how the RapidMind Development Platform unifies the software development process and programming model for a variety of processors, including multi-core CPUs, GPUs, and the Cell BE. The generally applicable, single-source solution provided by RapidMind makes heterogeneous multi-core development as easy as single-threaded, single-core programming. Applications built with the RapidMind platform are processor-independent, and they automatically scale to any number of cores. In addition, the RapidMind platform enables high programmer productivity: high-performance portable software can be created with an order of magnitude less effort than with traditional approaches.

Marjorie Willis

RapidMind Inc. 470 Weber Street North, Unit 203 Waterloo, Ontario N2L 6J2 Canada mwillis@rapidmind.net

Autodesk® FBX®: An Overview Autodesk

Wednesday, 8 August, 9:45 - 11:30 am

A technical overview and deep dive for developers interested in supporting the FBX file format via the FBX SDK. Learn vital best practices to get your application reading and writing the FBX format as fast as possible. This session is intended for developers of content-creation tools, game engines, or any other applications that support the most widely used 3D format in the industry: FBX.

Autodesk

10 Duke Street Montréal, Québec H3C 2L7, Canada med_ent@autodesk.com

Training for Careers in Animation

Vancouver Film School Wednesday, 8 August, 1 - 2:30 pm

Interested in a career in the world of animation? This session includes a screening of outstanding student work, a comprehensive overview of the Vancouver Film School's Classical & 3D animation programs, admissions requirements, discussion of career opportunities, and a question-and-answer period.

Janet Cacchioni

Vancouver Film School 200-198 West Hastings Street Vancouver, British Columbia V6B 1 H2 Canada ian@vfs.com

Speed Animation: Input-Driven 3D Animation Techniques Craft Animations and Entertainment AB Wednesday, 8 August, 3:30 - 5:30 pm

This seminar focuses on Speed Animation, a set of advanced techniques for extremely fast animation.

Speed Animation is a production pipeline concept for photo-real 3D animation. It makes production more than 100 times faster. The key motivation in Speed Animation is for a producer/director to be certain beforehand that everything looks and moves as expected. It streamlines the production pipeline.

One of the key technologies of Speed Animation is Craft Director Tools, a suite of plug-in modules for input-driven animation. Also key are Craft Templates: render-ready and animation-ready 3D models, which employ a combination of the different modules in the Craft Director Tools suite. Come explore the world of real-time, user-input-driven Speed Animation.

Jacob Runnerström

Craft Animations and Entertainment Stena Center 1D SE-41292 Göteborg Sweden jacob.runnerstrom@craftanimations.com

GPU Computing: The Next Big Thing for High-Performance

Computing
NVIDIA Corporation

Thursday, 9 August, 9:45 - 11:45 am

GPU computing is a new high-performance computing technology designed to perform data-intensive parallel processing with a new massively parallel computing architecture designed into NVIDIA's most recent GPU. This technology leverages the company's many years of investment in powerful parallel-graphics architectures and opens it up to handle the world's most complex computing problems - problems that today require vast clusters of servers and drive the need for new, parallel-computing technologies. This talk provides an overview of NVIDIA GPU computing and summarizes how it is transforming high-performance computing.

NVIDIA Corporation

Attn: GPU Computing Business Unit 2701 San Tomas Expressway Santa Clara, California 95050 USA computing@nvidia.com

The Art and Technology of Ruby: Whiteout Advanced Micro Devices, Inc. Thursday, 9 August, 1 - 2:30 pm

Whiteout is significantly longer and more complex than any demo created previously by the 3D Application Research Group at AMD. When you add to this the challenges of introducing a new hardware architecture, a new 3D API, and a new operating system, it all adds up to some very interesting experiences. Please join us for a presentation by the programmers and artists from the Demo Team, who share the knowledge they gained during this process. They describe in detail a number of advanced shader techniques used in the demo, along with the supporting art-authoring methodologies. Image Metrics joins us to discuss how we brought Ruby to life using their high-fidelity, performance-driven facial animation system.

Speakers:

Abe Wiley Lead Artist

3D Application Research Group Advanced Micro Devices, Inc. abe.wiley@amd.com

Thorsten Scheuermann

Lead Engine Programmer 3D Application Research Group Advanced Micro Devices, Inc. thorsten.scheuermann@amd.com

Exhibitor Sessions

NVIDIA Corporation

Wednesday, 8 August

9:30-10:30 am Smoke, Fire, and Water with Liquid Dynamics

Physically based animation of fluids such as smoke, water, and fire provides some of the most stunning visuals in computer graphics, but has historically been the domain of high-quality offline rendering due to its great computational cost. This presentation reviews how to compute and render these effects in real time on the GPU and applications such as videogames.

11 am - noon NVIDIA FX Composer 2: Shader Authoring for Everyone

FX Composer 2 is a state-of-the-art shader development platform for technical directors, programmers, and artists. It is designed for quick and easy shader authoring and convenient integration into existing production pipelines. It supports authoring of CG, HLSL, COLLADA FX shaders, and has many features such as shader profiling, integrated access to an online Shader Library, artist-friendly tweakables, scripting, custom plug-ins, a convenient start page, customizable toolbars and layouts, and more.

1-2 pm GPU Gems 3 Sampler

Part 1 - Summed-Area Variance Shadow Maps

This improved version of Variance Shadow Maps (VSM) reduces the light-bleeding artifacts associated with the original VSM algorithm. Additionally, introducing summed-area tables made it possible to compute shadow contributions for arbitrary rectangular regions efficiently, making it a must-see algorithm for soft shadows without aliasing. This technique is fully explained in the upcoming *GPU Gems 3* book.

Part 2 - Universal Playable Capture

This overview discusses and demonstrates the real-time implementation of Universal Capture - a facial-capture approach that delivers unmatched animation fidelity while offering flexibility to create unique visuals. The technique has progressed from its film applications ("The Matrix" movies) to fully interactive games (E3 2006 Tiger Woods Demo), and it is now being used for animating facial performances in Tiger Woods PGA Tour 07 and Need for Speed: Carbon. The Universal Playable Capture technique by George Borshukov, Jefferson Montgomery, and John Hable from Electronic Arts is described in *GPU Gems 3*.

2:30-3:30 pm NVIDIA Perfkit 5: Optimize Your Application in Real Time

This talk focuses on PerfHUD 5, the latest version of NVIDIA's real-time performance analysis tool with numerous major improvements such as shader edit-and-continue, render state edit-and-continue, customizable graphs, numerous user interface enhancements, and a host of other useful features. Attendees also learn how to use the other components of PerfKit: to access powerful GPU performance counters in OpenGL and DirectX with PerfSDK, identify OpenGL API usage and performance errors with GLExpert, and tune fragment programs using ShaderPerf.

4 - 5 pm GPU Gems 3: Advanced Skin Rendering

NVIDIA's Demo Team presents an overview of its advanced skin rendering techniques as seen in the Human Head demos. The demo engineers discuss a highly realistic, physically based real-time skin shader that is easy to implement and highly scalable to meet the performance needs of your application. The skin rendering technique is explained in detail in the upcoming GPU Gems 3 book.

Other exhibitor meeting rooms

AMD Corporation **Rooms 26 A&B** Tuesday, 7 August - Thursday, 9 August

Google Inc. Room 14 B Wednesday, 8 August

Walt Disney Animation Studios **Room 5 A** Wednesday, 8 August

Khronos Sessions

If you manufacture and/or develop multimedia content and/or mobile devices, join these sessions to learn about the new industry standards for royalty-free multimedia development.

Tuesday, 7 August

10 - 11:30 am

OpenKODE BOF: Portability for Mobile Graphics & Media Applications

Organizer:

Neil Trevett, NVIDIA Corporation

Noon - 1:30 pm

OpenGL ES BOF: The Power Behind Mobile 3D

Organizer:

Tom Olson, Texas Instruments Incorporated

2 - 3:30 pm

OpenVG BOF: Native Acceleration for Bézier Vector Graphics

Organizers:

Andrzej Mamona, AMD Corporation Dan Rice, Google Inc.

4 - 5:30 pm

OpenMAX BOF: Complete Streaming Media Acceleration & Portability

Organizers:

Leo Estevez, Texas Instruments Incorporated **Nathan Charles,** Creative

6 -8 pm

Khronos Party: Join the "KODE BUSTERS" for Games, Giveaways & Demos

Organizer:

Andrew Riegel, Khronos Group

Wednesday, 8 August

10 - 11 am

Web3D BOF: Open Standards for Real-Time 3D Communication

Organizer:

Rita Turkowski, Web3D Consoritium

11:30 am - 1 pm

Khronos Japanese BOF: Summary of All Khronos BOFs in Japanese

Organizer:

Hitoshi Kasai, Khronos Group

2 - 3:45 pm

COLLADA Tool Chain BOF: Effective Content Creation Pipeline

Organizer:

Mark Barnes, SCEA

3:45 - 4:45 pm

COLLADA Party: Golden Pineapple Games, Giveaways & Demos

Organizer:

Andrew Riegel, Khronos Group

5:15 - 7 pm

OpenGL BOF: Most Widely Adopted 2D & 3D Graphics API in the Industry

Organizer:

Barthold Lichtenbelt, NVIDIA Corporation

7 - 8 pm

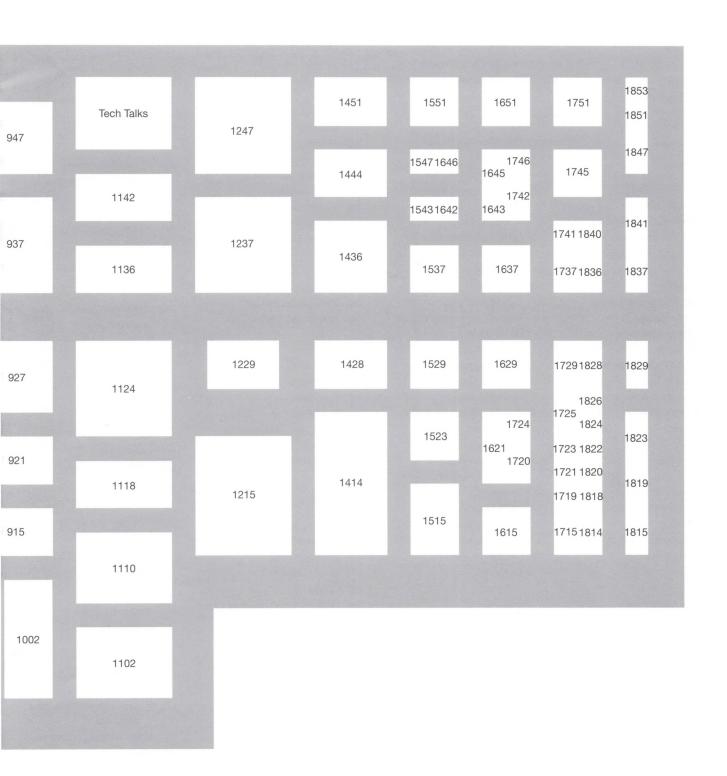
OpenGL Party: Make the "Ascent to the Top" for Games, Giveaways & Demos

Organizer

Andrew Riegel, Khronos Group

Exhibitor Map

050	152 051	153 252		251 450		551	653 752	850 749	
048	150	151 248	249	351 450	449		651 748		
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Exhibitor Booth Listing as of 26 June 2007

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1642	1 Beyond, Inc.	1819	Blue Box ME	402	Dimension 3D Printing		1
902	2d3 Ltd.	215	Blue Sky Studios, Inc.	003	Dimensional Imaging Ltd.	1002	IBM Corporation
007	3Dconnexion, A Logitech	209	BlueArc Corporation	537	Disney Interactive Studios	026	IBRIX Inc.
	Company	1436	BOXX Technologies, Inc.	246	DriveSavers Data Recovery	137	IdN magazine
749	3D Consortium	450	Brigham Young University			327	IEEE Computer Society
409	3dMD/3Q	1110	Bunkspeed, Inc.			1814	Immersion Corporation
236	The3DShop.com				E	746	Immersive Media Corp.
1847	3DTotal.com		_	427	e frontier, Inc.	1629	Inscape
1851	5DT (Fifth Dimension		C	1823	Electronic Arts Inc.	303	IntegrityWare, Inc.
	Technologies)	1836	Cap Digital Paris Region	238	Electrosonic Systems Inc.	016	Intelligraphics Inc.
		1841	CEA - Haption	024	Entertainment Technology	329	International Academy
		416	cebas Computer GmbH		Center - Carnegie Mellon	020	of Design & Technology
	A	741	Center for Computation	1745	EON Reality, Inc.	1615	InterSense
412	A K Peters, Ltd.		& Technology at Louisiana	623	e-on software, inc.	1529	Isilon Systems, Inc.
343	Aberdeen LLC		State University	815	eyeon Software Inc.	1741	ITT Educational Services, Inc.
153	Academic Superstore LP	325	CGAL - The Computational	1824	EyeTech Digital Systems, Inc.	128	IWANE Lab. LTD.
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1737	Activision	349	Cinital, Inc.		F		J
736	Addison-Wesley Professional	317	The Cleveland Institute of Art	011	Faceware Society LLC	0.40	John Wiley & Sons, Inc.
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611	AJA Video Systems Inc.	1818	Collins College		Inc.	836	JourneyEd.com
1102	AMD	1751	Computer Graphics World (COP	1815	Flat Pyramid		
448	American Paper Optics, Inc.		Communications, Inc.)	243	Florida Interactive		K
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1215	The Art Institutes	740	Cycling '74	021	Goal Financial, LLC	1428	Massive Software
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703	Autodesk, Inc.	641	DataDirect Networks Inc.			0.40	Systems, Inc.
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- 449 Zygote Media Group, Inc.

Exhibitor Descriptions

1 Beyond, Inc. Booth 1642

61 Medford Street
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3Dconnexion, A Logitech Company Booth 007

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cris_blaine@3dconnexion.com
www.3dconnexion.com
3Dconnexion, a Logitech company, designs
and manufactures a line of award-winning 3D
mice including SpacePilot, SpaceExplorer,
SpaceTraveler, and SpaceNavigator.

3D Consortium Booth 749

1-3-6 Nishi Kanda, Chiyoda-ku Tokyo 101-0065 JAPAN +81.3.5283.8640 jack@sst.ad.jp www.3dc.gr.jp/english Industry organization to promote stereoscopic display technologies.

3dMD/3Q Booth 409

Atlanta, Georgia 30339 USA +1.770.612.8002 info@3dmd.com www.3dmd.com 3dMD/3Q is pioneering the future of 3D by providing high-precision, ultra-fast (.0015 seconds) 3D and 4D surface imaging systems that support clinical, research, and biometric initiatives worldwide.

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The3DShop.com Booth 236

6000 Peachtree Industrial Boulevard, Suite C Norcross, Georgia 30071 USA +1.770.368.8988 cktan@the3dshop.com www.the3dshop.com The3DShop.com has been a leader in custom-built 3D/DV workstations since the first generation of OpenGL and DV.

3DTotal.com Booth 1847 1 Shaw Street

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5DT (Fifth Dimension Technologies) Booth 1851

15375 Barranca Parkway, G-103 Irvine, California 92618 USA +1.949.450.9044 info.us@5dt.com www.5dt.com 5DT (Fifth Dimension Technologies) develops, produces, and distributes data gloves, HMDs, trackers, and motion capture systems.

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Act-3D, B.V. **Booth 1523**

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2316 XB Leiden, NETHERLANDS +31.71.5147799 info@act-3d.com www.quest3d.com Act-3D, B.V. created Quest3D, a software program for 3D artists, multimedia, and virtual reality developers. Quest3D is targeted for interactive, real-time 3D productions, like architecture, virtual reality training,

entertainment, and presentations.

Activision **Booth 1737**

3100 Ocean Park Boulevard Santa Monica, California 90405 USA +1.310.255.2000 recruiting@activision.com www.activision.com Activision is a leading international publisher of interactive entertainment software products. For more information visit www.activision.com.

Addison-Wesley Professional Booth 736

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American Paper Optics, Inc. Booth 448

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Andersson Technologies LLC Booth 252

2 Carrie Lane Malvern, Pennsylvania 19355 USA +1.610.722.9552 info@ssontech.com www.ssontech.com SynthEyes is a 3D tracking and image stabilization application offering high performance and a wealth of features at an affordable price. PC/Mac/MacTel.

Animation Magazine Inc. Booth 436

Westlake Village, California 91361 USA +1.818.991.2884 info@animationmagazine.net www.animationmagazine.net Animation Magazine Inc. is the only monthly trade magazine covering the animation and vfx industry around the world and publisher of the Animation Industry Directory.

30941 West Agoura Road, Suite 102

ANIMATIONMENTOR.COM **Booth 1837**

918 Parker Street, Suite 12 Berkeley, California 94710 USA +1.510.809.1177 info@animationmentor.com www.animationmentor.com ANIMATIONMENTOR.COM is an online animation school offering an 18-month certified diploma course in Advanced Studies in Character Animation.

Animazoo Booth 947

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+1.714.488.9926 sales@apacesystems.com www.apacesystems.com High-performance, hard-disk-based RAID network storage (NAS) for 2D/3D animation/ graphics, rendering farms, video editing/postproduction, video streaming/ broadcasting, video capture, video/audio archive, and digital near-line libraries via GigE or 10Gbp Ethernet.

APAXIS Systems Booth 437

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Castle Rock, Colorado 80109 USA 877.427.2947 osuper@apaxis.com www.apaxis.com

APAXIS Systems develops business solutions for industries in need of efficiency improvements. APAXIS has developed two highly efficient collaborative work environment products for large production industries.

Applicraft Co., Ltd. Booth 150

Tomigaya 1-6-9 A-1 Building, Shibnya Tokvo, JAPAN +81.3.5790.8431 nakajima@applicraft.com www.applicraft.com

ARC Science Simulations Booth 1746

306 North Washington Avenue Loveland, Colorado 80537 USA 800.759.1642 sales@arcscience.com www.arcscience.com/omni.htm Spherical computer display systems.

ARRI Group Booth 240 617 Route 303

Blauvelt, New York 10913 USA +1.845.353.1400 fwieser@arri.com www.arri.com Manufacturer of post-production equipment including the new ARRISCAN 16mm and 35mm film scanner and the ARRILASER film recorder.

The Art Center Design College Booth 446

2525 North Country Club

Tucson, Arizona 85716 USA +1.520.325.0123 inquire@theartcenter.edu theartcenter.edu The Art Center Design College is a private design college in the Southwest with the same accreditation as major universities.

Artem Digital Ltd. Booth 020

Unit 4, Perivale Park, Horsenden Lane South Perivale UB6 7RL UNITED KINGDOM +44.0.208.991.6060 info@artemdigital.com www.artemdigital.com Artem Digital Ltd. has developed a high-resolution, image-based 3D facial-performance-capture system designed to give film, TV, and game animators high-quality results.

The Art Institutes Booth 1215

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jpmuller@edmc.edu
www.artinstitutes.edu
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institutions located throughout North
America, provides an important source
of design, media arts, fashion, and culinary
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A company dedicated to researching and providing the latest technology and the most advanced cross-platform tools to the 3D industry. For additional information, please visit www.formz.com.

Autodesk, Inc. Booth 703

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Axceleon Inc. Booth 747

Sunnyvale, California 94085 USA +1.408.739.9000 info@axceleon.com www.axceleon.com/3d Axceleon Inc. is the provider of EnFuzion for Render Farms, the industrial-strength render farm management software for Windows, Mac OS X, and Linux render farms.

Ballistic Media Pty. Ltd. Booth 313

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Aldgate Valley Road
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+61.8.8388.5966
info@ballisticpublishing.com
www.ballisticpublishing.com
Ballistic Media Pty. Ltd., comprised of
Ballistic Publishing and the CGSociety,
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magazines, and online media for the
CG art industry.

Barco Booth 1551

600 Bellbrook Avenue Xenia, Ohio 45385 USA +1.937.372.7579 ken.hunter@barco.com www.vr.barco.com Barco is a world-leading solutions provider for immersive and stereoscopic visual display systems.

Bell Computer Booth 403 187 Pacific Street

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BiTMICRO Networks, Inc. Booth 34747929 Fremont Boulevard

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+1.510.623.2341 info@bitmicro.com www.bitmicro.com BiTMICRO Networks, Inc. develops flash disk, solid-state disk (SSD), network storage, and file cache solid-state storage solutions in 2.5" and 3.5" hard-disk drive (HDD) footprints and 19" rackmount configurations.

Blue Box ME Booth 1819

106, Oud Metha Office Building,
Garhoud Road
Dubai 49418 UNITED ARAB EMIRATES
+97.14.258.4225
nauman@blueboxme.com
www.blueboxme.com
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studio specialized in the area of architectura

Blue Box ME is a Dubai-based visualization studio specialized in the area of architectural visualization and 3D animation for local and international customers. Blue Box offers a wide range of services in the form of artist impressions, photorealistic renderings, 3D animations, digital content, and real-time/interactive presentations.

Blue Sky Studios, Inc. Booth 215

44 South Broadway, 17th Floor

White Plains, New York 10601 USA +1.914.259.6500 linda@blueskystudios.com www.blueskystudios.com Blue Sky Studios, Inc., a unit of Fox Filmed Entertainment, is an Oscar Award-winning animation studio.

BlueArc Corporation Booth 209

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BOXX Technologies, Inc. **Booth 1436**

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www.boxxtech.com

BOXX Technologies, Inc. delivers technology to the innovators in visual computing with high-performance, innovative 3D workstations, render nodes, and customized hardware solutions that fuel innovation.

Brigham Young University Booth 450

265 Crabtree Provo. Utah 84602 USA +1.801.422.6300 animation@byu.edu www.et.byu.edu/animation Brigham Young University offers a BFA degree in animation. The animation degree integrates visual arts, critical thinking, storytelling, and technology.

Bunkspeed, Inc. **Booth 1110**

5355 Avenida Encinas, Suite 110 Carlsbad, California 92008 USA +1.760.918.9780 info@bunkspeed.com www.bunkspeed.com Bunkspeed, Inc. is a leading global provider of visualization software and services for design, engineering, and marketing.

CAP DIGITAL PARIS REGION Booth 1836

CCIP - Bourse de Commerce, 2 rue de Viarmes 75001 Paris, FRANCE +33.1.55.65.36.61 mbetsch@ccip.fr

www.ccip.fr; www.capdigital.com One of France's first international competitivness clusters in the digital creative content sector and its partners, Paris Chamber of Commerce and Industry, Gobelins, l'Ecole de l'Image, and PRIME (Paris Region International Mission Enterprise).

CEA - Haption **Booth 1841**

CEA - Centre de Saclay,

CEA-LIST Bat. 476 91191 Gif-sur-Yvette, FRANCE +33.2.43.64.51.20 pierre.vercruysse@haption.com www.haption.com Haption designs, manufactures, and sells haptic devices with professional quality, suited to the needs of its customers, both industrial and academic.

cebas Computer GmbH Booth 416

216 Johnston Hall

Lilienthalstrasse 19 69214 Eppelheim, GERMANY +49.6221.760038 e.braun@cebas.com www.cebas.com cebas Computer GmbH exhibits powerful new plug-ins for 3ds Max and other 3D

Center for Computation & Technology at Louisiana State University Booth 741

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at Louisiana State University is an innovative and interdisciplinary research environment for advancing computational sciences. technologies, and the disciplines they touch.

CGAL - The Computational Geometry Algorithms Library Booth 325

c/o INRIA 2004, route des Lucioles - BP 93 6902 Sophia-Antipolis, FRANCE +33.493.708.203 info@cgal.org www.cgal.org

CGAL - The Computational Geometry Algorithms Library Project provides a vast collection of high-performance geometric software components that are flexible and easy to integrate in applications.

Chaos Group Booth 221

1, Andrei Lyapchev Boulevard 1756 Sofia, BULGARIA +359.2.9743181 contacts@chaosgroup.com www.chaosgroup.com Chaos Group is a developer of high-end software solutions for the VFX industry.

Cinital, Inc. Booth 349

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The Cleveland Institute of Art Booth 317

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The Cleveland Institute of Art is a private college of art and design that has been committed to educating exceptional professional artists and designers since 1882.

Cogswell Polytechnical College Booth 643

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Craft Animations and Entertainment AB Booth 850

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Creaform 3D Booth 745

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Creative Media Institute of New Mexico State University Booth 244

185 Milton Hall, Box 30001 Las Cruces, New Mexico 88003 USA +1.505.646.6146 jgorell@nmsue.edu cmi.nmsu.edu

The Creative Media Institute of New Mexico State University offers courses in 2D and 3D animation, film, screenwriting, editing, sound design, and more.

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www.digimaxinc.com
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computer animation and design college offering bachelor of fine arts and master of fine
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+1.952.931.7500 karl.johnson@electrosonic.com www.vn-matrix.com Electrosonic Systems Inc. provides visual collaboration solutions for creative, production, design, and simulation. Animations, visualizations, and HD productions can be distributed in real time over switched IP networks.

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IdN magazine is an international publication for creative people on a mission to amplify and unify the design community in Asia-Pacific and other parts of the world.

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Montréal, Québec H3K 1G6 CANADA +1.514.846.0009 In@norpix.com www.norpix.com StreamPix 4 is a digital video recording software solution for motion capture. StreamPix supports a wide variety of high-speed and high-resolution cameras using cmos or ccd sensors. Acquire from multiple cameras. Time stamp each image.

Novalux, Inc. Booth 440

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NTT Resonant, Inc. Booth 018

Otemachi 1-6-1, Chiyoda-ku Otemachi Building 3F Tokyo 100-0004 JAPAN +81.3.5224.5116 hamaya@nttr.co.jp mm.bsearch.goo.ne.jp/ goo Multi-Media Search is a featured search engine designed to retrieve images, video, and music. Developed by NTT Resonant, Inc. for a new generation Web search.

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2701 San Tomas Expressway

Santa Clara, California 95050 USA +1.408.486.2000 info@nvidia.com www.nvidia.com NVIDIA Corporation is a worldwide leader in programmable graphics processor technologies.

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Billerica, Massachusetts 01821 USA 877.489.9449 stephanie.checchi@2objet.com www.2objet.com
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31878 Camino Capistrano San Juan Capistrano, California 92675 USA +1.949.443.3222 hlowden@oent.net Omation, a division of O Entertainment, is a CG animation studio in Southern California.

Organic Motion, Inc. Booth 1136

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Paravue Corporation Booth 406

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PhoeniX Technologies Incorporated Booth 1451

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Purdue University's Department of Computer
Graphics Technology offers BS, MS, and
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Waterloo, Ontario N2L 6J2 CANADA +1.519.885.5455 sales@rapidmind.net www.rapidmind.net RapidMind Inc. provides a software development platform that allows software vendors to deliver high performance on multi-core and stream processors, including the GPU and

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Savannah College of Art and Design exists to prepare talented students for careers in visual and performing arts, design, and the history of art and architecture.

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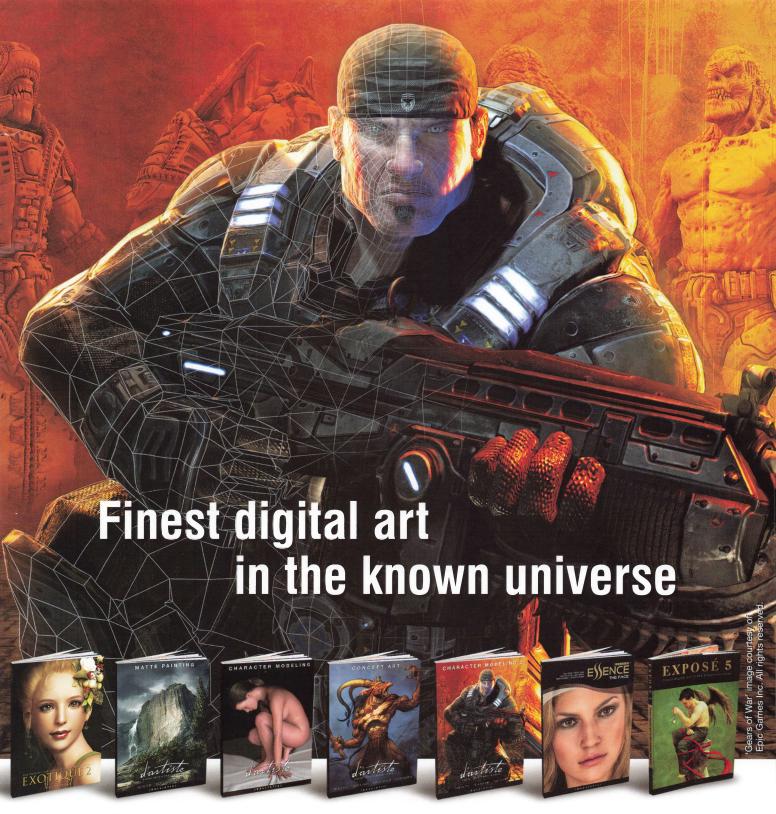
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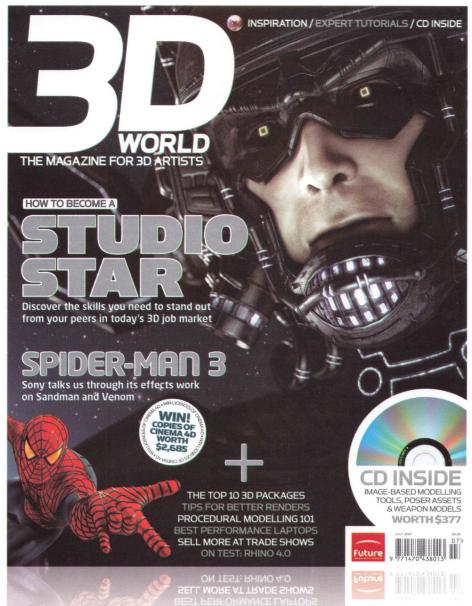
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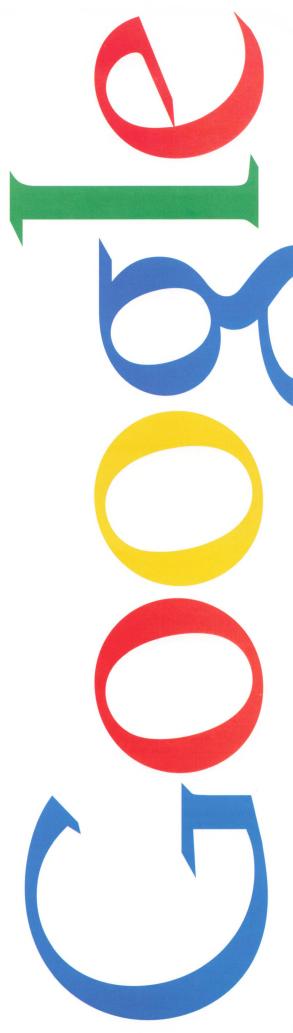
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003	Dimensional Imaging Ltd.	Digitiz	zing Cameras	815	eyeon Software Inc.
427	e frontier, Inc.	409	3dMD/3Q	1815	Flat Pyramid
623	e-on software, inc.	153	Academic Superstore LP	243	Florida Interactive Entertainment
815	eyeon Software Inc.	010	Aguru Images, Inc.		Academy
1824	EyeTech Digital Systems, Inc.	651	Apace Systems Corporation	927	Gnomon, Inc.
843	Future Publishing Limited	745	Creaform 3D	021	Goal Financial, LLC
103	Hewlett Packard Company	027	Geometry Systems Inc.	028	Graduate School of Culture
1814	Immersion Corporation	1814	Immersion Corporation	020	Technology
746	Immersive Media Corp	016	Intelligraphics Inc.	015	Hexagram
016	Intelligraphics Inc.	1229	Mova	1002	IBM Corporation
227	Khronos Group	1822	NorPix Inc.	746	Immersive Media Corp
1229	Mova		Organic Motion, Inc.	329	International Academy of
1237	NewTek, Inc.	1136 844	Panoscan Inc.	020	Design & Technology
		844	Parioscari iric.	1741	ITT Educational Services, Inc.
1537 041	Next Limit Technologies	Dianle	To chaology	1118	lynda.com, Inc.
	Nexus Digital Studio LLC NorPix Inc.	-	ay Technology	752	PowerUp Games
1822		1102	AMD	1515	Purdue University, Department of
1136	Organic Motion, Inc.	437	APAXIS Systems	1010	Computer Graphics Technology
844	Panoscan Inc.	1746	ARC Science Simulations	851	Renderosity
1451	PhoeniX Technologies Incorporated	139	Field Emission Technologies, Inc.	408	Savannah College of Art and Design
915	Pixologic, Inc.	843	Future Publishing Limited	503	Softimage
424	Point Grey Research Inc.	103	Hewlett Packard Company		9
1629	REALVIZ S.A.	016	Intelligraphics Inc.	1840	Solid Modeling Solutions
503	Softimage	1721	Mitsubishi Electric Research	146	Solidscape, Inc.
1249	Sony Electronics Inc.		Laboratories	647	Thomson Course Technology
1725	SpheronVR AG	248	NEC Display Solutions of	1724	Toon Boom Animation, Inc.
029	Web3D Consortium		America, Inc.	110	The University of the Arts
136	Wolfram Research, Inc.		3 NVIDIA Corporation	418	Vancouver Film School
449	Zygote Media Group, Inc.	1249	Sony Electronics Inc.	118	VR Times Co., Ltd
		821	Wacom Technology Corporation	029	Web3D Consortium
_	l Video Hardware			019	Westwood College
1642	1 Beyond, Inc.		Authoring Tools	136	Wolfram Research, Inc.
236	The3DShop.com	1642	1 Beyond, Inc.	1853	WorldViz LLC
153	Academic Superstore LP	236	The3DShop.com	449	Zygote Media Group, Inc.
611	AJA Video Systems Inc.	843	Future Publishing Limited		
651	Apace Systems Corporation	103	Hewlett Packard Company		ronic Publishing
437	APAXIS Systems			1823	Electronic Arts Inc.
020	Artem Digital Ltd.	Educ	ation/Training	623	e-on software, inc.
1551	Barco	1847	3DTotal.com	815	eyeon Software Inc.
403	Bell Computer	1851	5DT (Fifth Dimension Technologies)	843	Future Publishing Limited
1436	BOXX Technologies, Inc.	153	Academic Superstore LP	103	Hewlett Packard Company
349	Cinital, Inc.	937	Academy of Art University	836	JourneyEd.com
238	Electrosonic Systems Inc.	736	Addison-Wesley Professional	1124	Lucasfilm Ltd.
843	Future Publishing Limited	1837	ANIMATIONMENTOR.COM	738	THQ Inc.
103	Hewlett Packard Company	437	APAXIS Systems	136	Wolfram Research, Inc.
746	Immersive Media Corp	022	ASC-American Cinematographer		
016	Intelligraphics Inc.	446	The Art Center Design College	Enco	ders/Decoders
836	JourneyEd.com	1215	The Art Institutes	236	The3DShop.com
227	Khronos Group	1551	Barco	611	AJA Video Systems Inc.
152	Lightspeed Design, Inc.	450	Brigham Young University	651	Apace Systems Corporation
1621	NaturalPoint Inc.	1110	Bunkspeed, Inc.	1436	BOXX Technologies, Inc.
248	NEC Display Solutions of	416	cebas Computer GmbH	842	DigiPen Institute of Technology
	America, Inc.	317	The Cleveland Institute of Art	238	Electrosonic Systems Inc.
1237	NewTek, Inc.	643	Cogswell Polytechnical College	227	Khronos Group
1822	NorPix Inc.	1818	Collins College		
413/51	3 NVIDIA Corporation	745	Creaform 3D	Enco	ders/Decoders-HW
1136	Organic Motion, Inc.	244	Creative Media Institute of	1642	1 Beyond, Inc.
424	Point Grey Research Inc.		New Mexico State University	236	The3DShop.com
503	Softimage	842	DigiPen Institute of Technology	1102	AMD
1249	Sony Electronics Inc.	551	Digital Media Arts College	651	Apace Systems Corporation
		024	Entertainment Technology Center	403	Bell Computer
		0_ 1	Carnegie Mellon	1436	BOXX Technologies, Inc.

Carnegie Mellon

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Engin	eering Applications	843 103	Hewlett Packard Company	106	SeeFile Software LLC
007	3Dconnexion, a Logitech company	836	JourneyEd.com	100	Seel lie Soltware LLO
1851	5DT (Fifth Dimension Technologies)	227	Khronos Group	Hapti	c Input Devices
1737	Activision		3 NVIDIA Corporation	1841	CEA - Haption
437	APAXIS Systems	1136	Organic Motion, Inc.	843	Future Publishing Limited
020	Artem Digital Ltd.	337	PipelineFX, LLC	103	Hewlett Packard Company
747	Axceleon Inc.	915	Pixologic, Inc.	1814	Immersion Corporation
1841	CEA - Haption	1840	Solid Modeling Solutions	748	Measurand Inc.
1820	Crescent, Inc	102	Torcomp, Inc.	1721	Mitsubishi Electric Research
842	DigiPen Institute of Technology	029	Web3D Consortium		Laboratories
238	Electrosonic Systems Inc.			102	Torcomp, Inc.
1745	EON Reality, Inc.	Graph	nics Accelerator Boards	136	Wolfram Research, Inc.
1824	EyeTech Digital Systems, Inc.	1642	1 Beyond, Inc.		
027	Geometry Systems Inc.	236	The3DShop.com	HDT\	/
1814	Immersion Corporation	403	Bell Computer	611	AJA Video Systems Inc.
303	IntegrityWare, Inc.	843	Future Publishing Limited	1102	AMD
016	Intelligraphics Inc.	103	Hewlett Packard Company	651	Apace Systems Corporation
836	JourneyEd.com	016	Intelligraphics Inc.	437	APAXIS Systems
1428	Massive Software	836	JourneyEd.com	1436	BOXX Technologies, Inc.
1537	Next Limit Technologies	227	Khronos Group	238	Electrosonic Systems Inc.
737	Okino Computer Graphics, Inc.	413/51	3 NVIDIA Corporation	843	Future Publishing Limited
337	PipelineFX, LLC	1742	Pixellexis Systems &	103	Hewlett Packard Company
145	Robert McNeel & Associates		Technologies Inc.	1721	Mitsubishi Electric Research
1840	Solid Modeling Solutions	1826	TechViz		Laboratories
102	Torcomp, Inc.	102	Torcomp, Inc.	1822	NorPix Inc.
1547	Triple Squid Software Design				13 NVIDIA Corporation
149	T-Splines, Inc.	Graph	nics Accelerator Boards-HW	503	Softimage
029	Web3D Consortium	1642	1 Beyond, Inc.	1249	Sony Electronics Inc.
136	Wolfram Research, Inc.	236	The3DShop.com		
1853	WorldViz LLC	1102	AMD		Mounted Displays
		1436	BOXX Technologies, Inc.	1851	5DT (Fifth Dimension Technologies)
Furnit		843	Future Publishing Limited	1820	Crecent Inc.
236	The3DShop.com	103	Hewlett Packard Company	843	Future Publishing Limited
637	Anthro Corporation	1002	IBM Corporation	1615	InterSense
437	APAXIS Systems	016	Intelligraphics Inc.	227	Khronos Group
1723	Noren Products Inc.	227	Khronos Group	1621	NaturalPoint Inc.
		443	Mercury Computer Systems, Inc.	1853	WorldViz LLC
_	raphic Information Systems		3 NVIDIA Corporation	Himb	Daufayuranaa Cyankiaa
1746	ARC Science Simulations	1742	Pixellexis Systems &	_	Performance Graphics
746	Immersive Media Corp	E01	Technologies Inc.	1102	essors AMD
227	Khronos Group Mitsubishi Electric Research	521	PNY Technologies, Inc. Wolfram Research, Inc.	1436	BOXX Technologies, Inc.
1721		136	Wolfram Research, Inc.	238	Electrosonic Systems Inc.
	Laboratories	Grani	nics Standards Software	843	Future Publishing Limited
Goog	raphic Information Systems-HW	1523	Act-3D, B.V.	103	Hewlett Packard Company
103	Hewlett Packard Company	623	e-on software, inc.	1002	IBM Corporation
128	IWANE Lab, LTD.	016	Intelligraphics Inc.	016	Intelligraphics Inc.
1721	Mitsubishi Electric Research	227	Khronos Group	227	Khronos Group
	Laboratories	029	Web3D Consortium		13 NVIDIA Corporation
737	Okino Computer Graphics, Inc.	020	Tropos Gorios Hann	1742	Pixellexis Systems &
102	Torcomp, Inc.	Groui	oWare		Technologies Inc.
		437	APAXIS Systems	521	PNY Technologies, Inc.
Grapi	hic Design Systems	1721	Mitsubishi Electric Research	1249	Sony Electronics Inc.
1523	Act-3D, B.V.		Laboratories		
651	Apace Systems Corporation	106	SeeFile Software LLC	High	Resolution Technologies
629	auto.des.sys, Inc.			010	Aguru Images, Inc.
221	Chans Group	Groun	Ware Software	651	Anace Systems Corporation

GroupWare Software

APAXIS Systems

437

Chaos Group

DigiPen Institute of Technology

221

842

ARRI Group

Apace Systems Corporation

651

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020	Artem Digital Ltd.	442	TeraRecon, Inc.	Input	Devices
1551	Barco	142	VisMasters	007	3Dconnexion, a Logitech company
1436	BOXX Technologies, Inc.			236	The3DShop.com
003	Dimensional Imaging Ltd.	Indus	trial Design	1851	5DT (Fifth Dimension Technologies)
238	Electrosonic Systems Inc.	437	APAXIS Systems	651	Apace Systems Corporation
1002	IBM Corporation	629	auto.des.sys, Inc.	1719	Contour Design, Inc.
746	Immersive Media Corp	703	Autodesk, Inc.	238	Electrosonic Systems Inc.
016	Intelligraphics Inc.	850	Craft Animations and	1824	EyeTech Digital Systems, Inc.
1615	InterSense		Entertainment AB	843	Future Publishing Limited
227	Khronos Group	1444	Digital-Tutors	148	HighRES, Inc.
443	Mercury Computer Systems, Inc.	623	e-on software, inc.	1814	Immersion Corporation
1721	Mitsubishi Electric Research	815	eyeon Software Inc.	1629	Inscape
	Laboratories	843	Future Publishing Limited	016	Intelligraphics Inc.
1229	Mova	103	Hewlett Packard Company	1615	InterSense
1822	NorPix Inc.	148	HighRES, Inc.	227	Khronos Group
	13 NVIDIA Corporation	1814	Immersion Corporation	748	Measurand Inc.
844	Panoscan Inc.	836	JourneyEd.com	1721	Mitsubishi Electric Research
1249	Sony Electronics Inc.	1428	Massive Software	1721	Laboratories
1725	SpheronVR AG	041	Nexus Digital Studio LLC	1621	NaturalPoint Inc.
	•		3 NVIDIA Corporation	1822	NorPix Inc.
442	TeraRecon, Inc.		Okino Computer Graphics, Inc.		
luo e e	- Deced Medaling	737		742	P.I. Engineering, Inc.
_	e Based Modeling	1451	PhoeniX Technologies Incorporated	1451	PhoeniX Technologies Incorporated
409	3dMD/3Q	145	Robert McNeel & Associates	424	Point Grey Research Inc.
1523	Act-3D, B.V.	1826	TechViz	151	Polhemus
736	Addison-Wesley Professional	502	Total Immersion	116	Sandio Technologies
252	Andersson Technologies LLC	1547	Triple Squid Software Design	006	Tobii Technology AB
020	Artem Digital Ltd.	149	T-Splines, Inc.	821	Wacom Technology Corporation
842	DigiPen Institute of Technology	142	VisMasters	136	Wolfram Research, Inc.
1444	Digital-Tutors	. 1853	WorldViz LLC	1853	WorldViz LLC
003	Dimensional Imaging Ltd.				
623	e-on software, inc.	Inforr	nation Visualization	Interf	ace Tools
843	Future Publishing Limited	409	3dMD/3Q	007	3Dconnexion, a Logitech company
1814	Immersion Corporation	1851	5DT (Fifth Dimension Technologies)	1851	5DT (Fifth Dimension Technologies)
1721	Mitsubishi Electric Research	1523	Act-3D, B.V.	1523	Act-3D, B.V.
	Laboratories	736	Addison-Wesley Professional	611	AJA Video Systems Inc.
1229	Mova	437	APAXIS Systems	448	American Paper Optics, Inc.
1136	Organic Motion, Inc.	629	auto.des.sys, Inc.	437	APAXIS Systems
844	Panoscan Inc.	1551	Barco	843	Future Publishing Limited
915	Pixologic, Inc.	850	Craft Animations and	1814	Immersion Corporation
424	Point Grey Research Inc.		Entertainment AB	1629	Inscape
321	RE:Vision Effects, Inc.	740	Cycling '74	1615	InterSense
1629	REALVIZ S.A.	321	Digital Anarchy	227	Khronos Group
503	Softimage	238	Electrosonic Systems Inc.	748	Measurand Inc.
1840	Solid Modeling Solutions	623	e-on software, inc.	1621	NaturalPoint Inc.
1725	SpheronVR AG	815	eyeon Software Inc.	1853	WorldViz LLC
142	VisMasters	103	Hewlett Packard Company	1000	VVOITAVIZ ELEO
029	Web3D Consortium	1002	IBM Corporation	Mann	ing and Cartography
449	Zygote Media Group, Inc.	1814	Immersion Corporation	1851	5DT (Fifth Dimension Technologies)
449	Zygote Media Group, Inc.	746	Immersive Media Corp	736	Addison-Wesley Professional
Imag	e Management	1721	Mitsubishi Electric Research	325	,
		1721		323	CGAL - The Computational Geometr
240	ARRI Group	1007	Laboratories	600	Algorithms Library
1719	Contour Design, Inc.	1237	NewTek, Inc.	623	e-on software, inc.
238	Electrosonic Systems Inc.	1136	Organic Motion, Inc.	746	Immersive Media Corp
623	e-on software, inc.	337	PipelineFX, LLC	227	Khronos Group
	Future Publishing Limited	503	Softimage	1721	Mitsubishi Electric Research
843		E00	Total Immersion		Laboratories
843 1529	Isilon Systems, Inc.	502			Laboratorios
843 1529 1136	Organic Motion, Inc.	029	Web3D Consortium		
843 1529 1136 851	Organic Motion, Inc. Renderosity				cal Imaging Software
843 1529 1136	Organic Motion, Inc.	029	Web3D Consortium	Medi 409	

5DT (Fifth Dimension Technologies)

1851

503

1249

Softimage

Sony Electronics Inc.



437	APAXIS Systems	651	Apace Systems Corporation	Multin	nedia Tools and Applications
325	CGAL - The Computational Geometry	020	Artem Digital Ltd.	1851	5DT (Fifth Dimension Technologies)
	Algorithms Library	349	Cinital, Inc.	1523	Act-3D, B.V.
003	Dimensional Imaging Ltd.	1820	Crecent, Inc.	1719	Contour Design, Inc.
815	eyeon Software Inc.	003	Dimensional Imaging Ltd.	850	Craft Animations and
103	Hewlett Packard Company	238	Electrosonic Systems Inc.		Entertainment AB
227	Khronos Group	1824	EyeTech Digital Systems, Inc.	740	Cycling '74
617	MAXON Computer Inc.	843	Future Publishing Limited	1444	Digital-Tutors
527	Motion Analysis Corporation	1814	Immersion Corporation	238	Electrosonic Systems Inc.
1229	Mova	1615	InterSense	1745	EON Reality, Inc.
1537	Next Limit Technologies	836	JourneyEd.com	623	e-on software, inc.
041	Nexus Digital Studio LLC	748	Measurand Inc.	815	eyeon Software Inc.
1136	Organic Motion, Inc.	1721	Mitsubishi Electric Research	243	Florida Interactive Entertainment
851	Renderosity		Laboratories		Academy
1840	Solid Modeling Solutions	527	Motion Analysis Corporation	843	Future Publishing Limited
013	SURVICE Engineering Company	1229	Mova	1814	Immersion Corporation
029	Web3D Consortium	1621	NaturalPoint Inc.	746	Immersive Media Corp
449	Zygote Media Group, Inc.	1822	NorPix Inc.	1629	Inscape
		1136	Organic Motion, Inc.	016	Intelligraphics Inc.
Mobil	e Computing	1451	PhoeniX Technologies Incorporated	1615	InterSense
1642	1 Beyond, Inc.	424	Point Grey Research Inc.	836	JourneyEd.com
007	3Dconnexion, a Logitech company	151	Polhemus	227	Khronos Group
236	The3DShop.com	006	Tobii Technology AB	1229	Mova
1102	AMD	902	Vicon	1237	NewTek, Inc.
1436	BOXX Technologies, Inc.	1853	WorldViz LLC	018	NTT Resonant, Inc.
103	Hewlett Packard Company	109	Xsens Technologies B.V.	413/51	3 NVIDIA Corporation
227	Khronos Group			737	Okino Computer Graphics, Inc.
1237	NewTek, Inc.	Motio	n Capture Software	844	Panoscan Inc.
413/51	3 NVIDIA Corporation	409	3dMD/3Q	337	PipelineFX, LLC
		1851	5DT (Fifth Dimension Technologies)	1515	Purdue University, Department of
Monit	ors and Displays	252	Andersson Technologies LLC		Computer Graphics Technology
1642	1 Beyond, Inc.	020	Artem Digital Ltd.	1829	Reallusion Inc.
749	3D Consortium	349	Cinital, Inc.	1629	REALVIZ S.A.
236	The3DShop.com	1820	Crecent, Inc.	106	SeeFile Software LLC
1851	5DT (Fifth Dimension Technologies)	1823	Electronic Arts Inc.	503	Softimage
437	APAXIS Systems	1824	EyeTech Digital Systems, Inc.	1543	Syflex LLC
1746	ARC Science Simulations	843	Future Publishing Limited	502	Total Immersion
1551	Barco	028	Graduate School of Culture	307	Turbo Squid, Inc.
403	Bell Computer		Technology	545	Virtools, A Dassault Systemes
238	Electrosonic Systems Inc.	1615	InterSense		Company
1824	EyeTech Digital Systems, Inc.	836	JourneyEd.com	029	Web3D Consortium
139	Field Emission Technologies, Inc.	1428	Massive Software		
843	Future Publishing Limited	1721	Mitsubishi Electric Research	Multir	media Tools and
103	Hewlett Packard Company		Laboratories	Applio	cations-HW
016	Intelligraphics Inc.	527	Motion Analysis Corporation	1523	Act-3D, B.V.
227	Khronos Group	1229	Mova	1102	AMD
152	Lightspeed Design, Inc.	1621	NaturalPoint Inc.	448	American Paper Optics, Inc.
1721	Mitsubishi Electric Research	041	Nexus Digital Studio LLC	651	Apace Systems Corporation
	Laboratories	1822	NorPix Inc.	1551	Barco
248	NEC Display Solutions of	1136	Organic Motion, Inc.	1719	Contour Design, Inc.
	America, Inc.	1451	PhoeniX Technologies Incorporated	843	Future Publishing Limited
413/51	3 NVIDIA Corporation	424	Point Grey Research Inc.	103	Hewlett Packard Company
1249	Sony Electronics Inc.	1629	REALVIZ S.A.	1814	Immersion Corporation
006	Tobii Technology AB	503	Softimage	016	Intelligraphics Inc.
821	Wacom Technology Corporation	1543	Syflex LLC	1615	InterSense
	-	738	THQ Inc.	227	Khronos Group
Motio	n Capture Equipment	902	Vicon	1237	NewTek, Inc.
409	3dMD/3Q	109	Xsens Technologies B.V.		3 NVIDIA Corporation
1851	5DT (Fifth Dimension Technologies)			1451	PhoeniX Technologies Incorporated
010	Aguru Images, Inc.			1742	Pixellexis Systems &
947	Animazoo				Technologies Inc.
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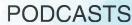
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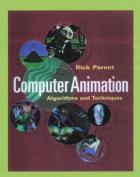


521	PNY Technologies, Inc.	Projec	ctors	Rende	ering and Modeling
106	SeeFile Software LLC	236	The3DShop.com	409	3dMD/3Q
821	Wacom Technology Corporation	1851	5DT (Fifth Dimension Technologies)	236	The3DShop.com
		1746	ARC Science Simulations	1523	Act-3D, B.V.
Netwo	orking Equipment	240	ARRI Group	1737	Activision
236	The3DShop.com	1551	Barco	736	Addison-Wesley Professional
651	Apace Systems Corporation	843	Future Publishing Limited	010	Aguru Images, Inc.
437	APAXIS Systems	016	Intelligraphics Inc.	651	Apace Systems Corporation
403	Bell Computer	152	Lightspeed Design, Inc.	437	APAXIS Systems
641	DataDirect Networks Inc.	1721	Mitsubishi Electric Research	629	auto.des.sys, Inc.
238	Electrosonic Systems Inc.		Laboratories	703	Autodesk, Inc.
103	Hewlett Packard Company	248	NEC Display Solutions of	747	Axceleon Inc.
1002	IBM Corporation		America, Inc.	1436	BOXX Technologies, Inc.
016	Intelligraphics Inc.	1249	Sony Electronics Inc.	1110	Bunkspeed, Inc.
1529	Isilon Systems, Inc.		,	416	cebas Computer GmbH
106	SeeFile Software LLC	Public	cations	325	CGAL - The Computational
, , ,		1847	3DTotal.com		Geometry Algorithms Library
Netwo	orking Infrastructure	412	A K Peters, Ltd.	221	Chaos Group
1737	Activision	736	Addison-Wesley Professional	1645	Corel Corporation
651	Apace Systems Corporation	436	Animation Magazine Inc.	745	Creaform 3D
103	Hewlett Packard Company	022	ASC-American Cinematography	037	DAZ Productions, Inc.
016	Intelligraphics Inc.	313	Ballistic Media Pty. Ltd.	1729	Digimax Inc.
1529	Isilon Systems, Inc.	1751	Computer Graphics World	842	DigiPen Institute of Technology
106	SeeFile Software LLC	1101	(COP Communications, Inc.)	1444	Digital-Tutors
029	Web3D Consortium	114	Create Magazine	427	e frontier, Inc.
020		1815	Flat Pyramid	1823	Electronic Arts Inc.
OEM	Components	843	Future Publishing Limited	623	e-on software, inc.
1851	5DT (Fifth Dimension Technologies)	927	Gnomon, Inc.	815	eyeon Software Inc.
611	AJA Video Systems Inc.	327	IEEE Computer Society	1815	Flat Pyramid
1102	AMD	420	millimeter	243	Florida Interactive Entertainment
403	Bell Computer	715	Morgan Kaufmann/Focal Press		Academy
1436	BOXX Technologies, Inc.	7 10	Publishers	112	Form Fonts
1719	Contour Design, Inc.	1646	OurStage, Inc.	843	Future Publishing Limited
1824	EyeTech Digital Systems, Inc.	1751	Post Magazine	027	Geometry Systems Inc.
1002	IBM Corporation	1,101	(COP Communications, Inc.)	028	Graduate School of Culture
1615	InterSense	1515	Purdue University, Department of		Technology
527	Motion Analysis Corporation		Computer Graphics Technology	351	Hash, Inc.
742	P.I. Engineering, Inc.	428	Springer	103	Hewlett Packard Company
151	Polhemus	1643	Stash Media Inc.	148	HighRES, Inc.
006	Tobii Technology AB	647	Thomson Course Technology	1814	Immersion Corporation
		029	Web3D Consortium	303	IntegrityWare, Inc.
Paint	Systems	449	Zygote Media Group, Inc.	836	JourneyEd.com
815	eyeon Software Inc.		_, g	1124	Lucasfilm Ltd.
843	Future Publishing Limited	RAID	Systems and Storage	617	MAXON Computer Inc.
617	MAXON Computer Inc.	1642	1 Beyond, Inc.	1721	Mitsubishi Electric Research
915	Pixologic, Inc.	236	The3DShop.com		Laboratories
503	Softimage	343	Aberdeen LLC	1621	NaturalPoint Inc.
1724	Toon Boom Animation, Inc.	651	Apace Systems Corporation	1237	NewTek, Inc.
	,	403	Bell Computer	1537	Next Limit Technologies
Printe	ers and Plotters	209	BlueArc Corporation	413/51	3 NVIDIA Corporation
236	The3DShop.com	1436	BOXX Technologies, Inc.	737	Okino Computer Graphics, Inc.
843	Future Publishing Limited	641	DataDirect Networks Inc.	1136	Organic Motion, Inc.
103	Hewlett Packard Company	103	Hewlett Packard Company	337	PipelineFX, LLC
016	Intelligraphics Inc.	1002	IBM Corporation	1742	Pixellexis Systems &
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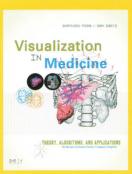
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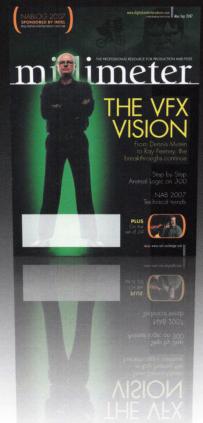
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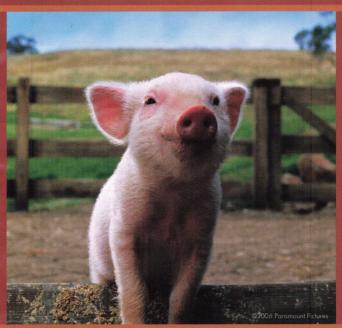
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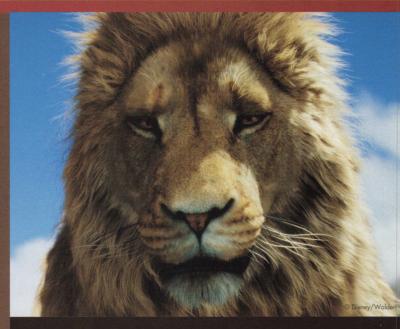
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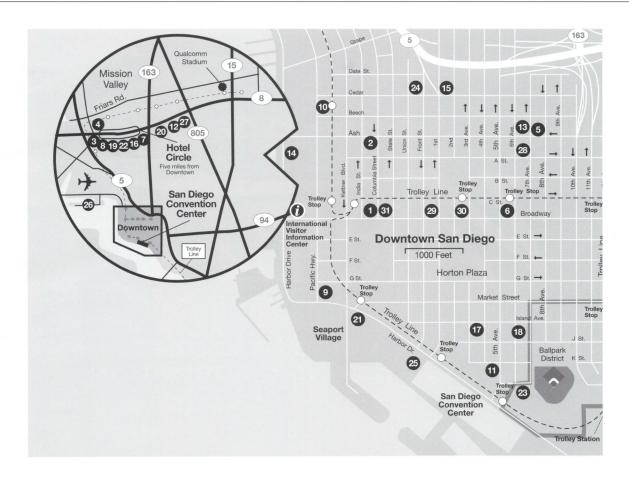
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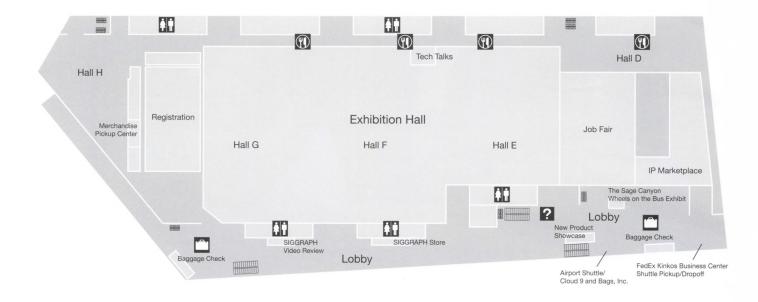


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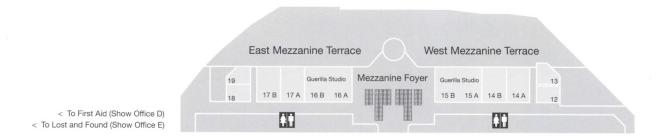
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Main Floor



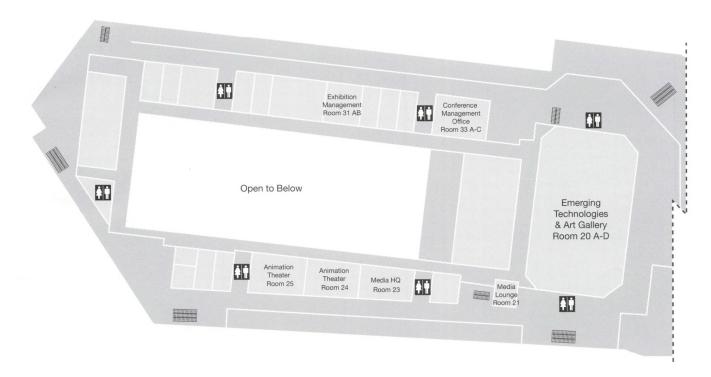
Mezzanine Floor



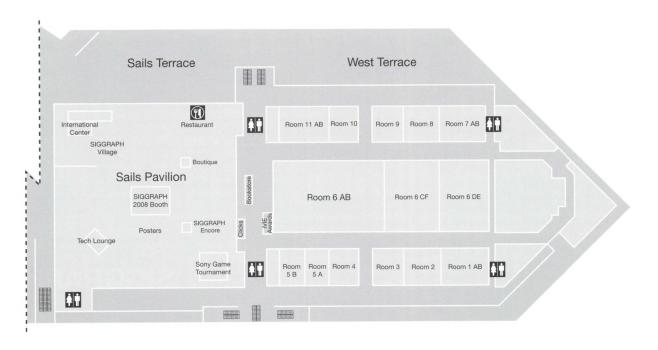
Key Restroom ? Information Food/Beverage Baggage Check

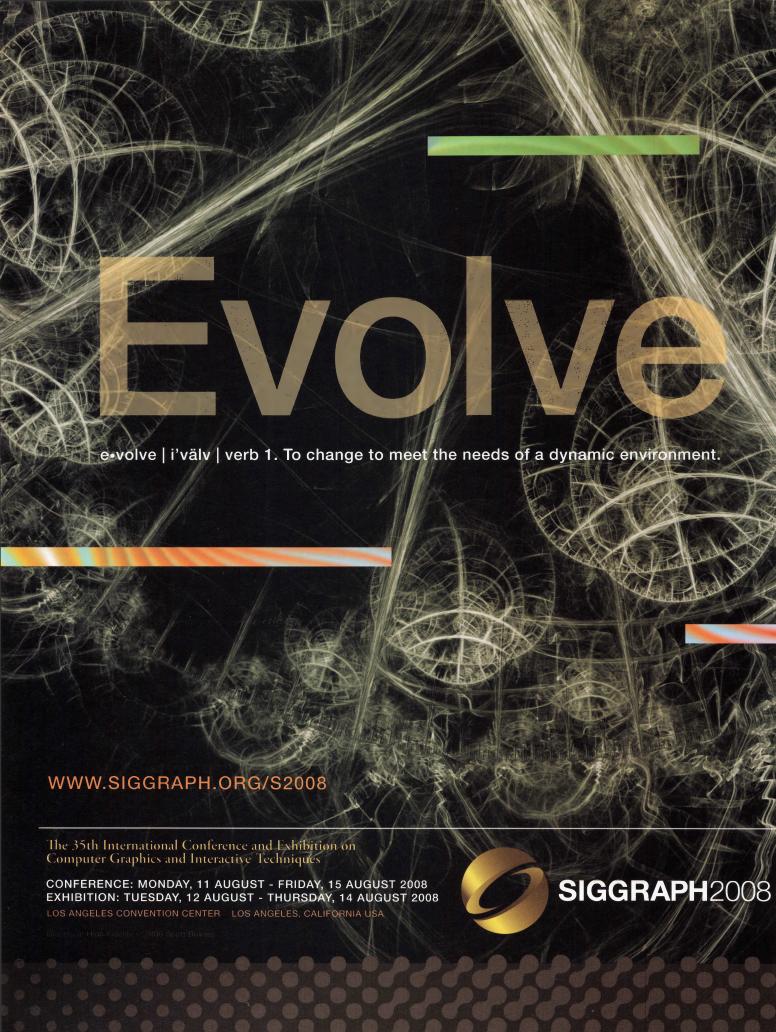
San Diego Convention & Exhibition Center

Upper Floor - East



Upper Floor - West







Future Conference Dates

SIGGRAPH 2008

Monday, 11 August - Friday, 15 August 2008 Los Angeles, California USA

SIGGRAPH 2009

Monday, 3 August - Friday, 7 August 2009 New Orleans, Louisiana USA

SIGGRAPH 2010

Monday, 26 July – Friday, 30 July 2010 Los Angeles, California USA

