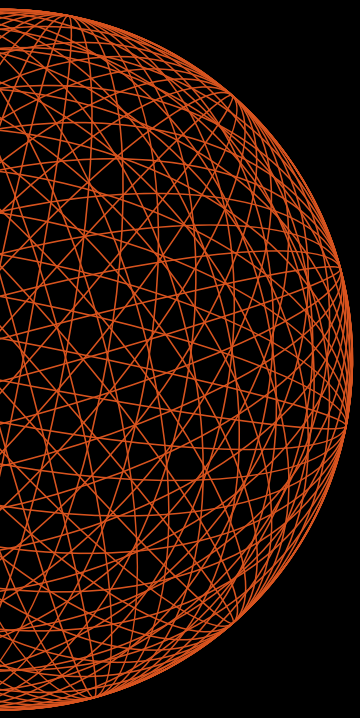
Advance **Program**

Updated 20 June



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SIGGRAPH2012

The **39th** International **Conference** and **Exhibition** on **Computer Graphics** and **Interactive Techniques**

Conference 5–9 August 2012
Exhibition 7–9 August 2012
Los Angeles Convention Center

Sponsored by ACM**SIGGRAPH**

www.siggraph.org/s2012

Conference at a Glance *Schedule subject to change.*

Conference Registration Categories:

■ Full Conference Access ● Basic Conference Access ✚ Basic Conference Plus ▲ Computer Animation Festival ★ Exhibitor

	Sunday, 5 Aug	Monday, 6 Aug	Tuesday, 7 Aug	Wednesday, 8 Aug	Thursday, 9 Aug
Registration/ Merchandise Pickup Center	8 am-6 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-3:30 pm
SIGGRAPH Store		11 am-3 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-4 pm
■ ● ✚ ▲ ★ ACM SIGGRAPH Award Presentations		11 am-1 pm			
■ ● ✚ ACM SIGGRAPH Award Talks		2-3:30 pm			
■ ● ✚ ▲ ★ ACM Student Research Competition Final Presentation					2-3:30 pm
■ ● ✚ ★ Art Gallery	noon-5:30 pm	9 am-5:30 pm	9 am-5:30 pm	9 am-5:30 pm	9 am-1 pm
■ Art Papers			9 am-12:15 pm		
■ ● ✚ ▲ ★ Birds of a Feather	Throughout the week				
■ Courses	9 am-12:15 pm 2-5:15 pm	9 am-5:15 pm	9 am-5:15 pm	9 am-5:15 pm	9 am-5:15 pm
■ ● ✚ ★ Emerging Technologies	noon-5:30 pm	9 am-5:30 pm	9 am-5:30 pm	9 am-5:30 pm	9 am-1 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
■ Geek Bar	2-5:15 pm	9 am-5:35 pm	9 am-5:35 pm	9 am-5:35 pm	9 am-5:15 pm
■ ● ✚ ▲ ★ International Center	9 am-6 pm	9 am-6 pm	9 am-6 pm	9 am-6 pm	9 am-3:30 pm
■ ● ✚ ▲ ★ Job Fair			9:30 am-6 pm	9:30 am-6 pm	9:30 am-3:30 pm
■ ● ✚ ▲ ★ Keynote Speaker		11 am-1 pm			
■ Panels	3:45-5:15 pm	9-10:30 am			
■ ● ✚ ▲ ★ Posters	noon-5:30 pm	9 am-5:30 pm	9 am-5:30 pm	9 am-5:30 pm	9 am-5:30 pm
■ ● ✚ ▲ ★ Poster Presentations			12:15-1:15 pm	12:15-1:15 pm	
■ ● ✚ ▲ Real-Time Live!				5:30-7 pm	
■ Reception		9-11 pm			
SIGGRAPH Business Symposium (additional fee required)	8 am-5:30 pm				
■ ● ✚ ▲ SIGGRAPH Dailies!			6:15-7:45 pm		
■ SIGGRAPH Mobile				9 am-5:15 pm	
■ ● ✚ ★ Studio	noon-5:30 pm	9 am-5:30 pm	9 am-5:30 pm	9 am-5:30 pm	9 am-1 pm
■ Talks	2-3:30 pm	9 am-5:35 pm	9 am-5:15 pm	9 am-3:30 pm	9 am-5:15 pm
■ Technical Papers		9 am-5:35 pm	9 am-5:35 pm	9 am-5:35 pm	9 am-5:15 pm
■ ● ✚ ▲ Technical Papers Fast Forward	6-8 pm				
Computer Animation Festival					
■ ✚ ▲ Electronic Theater		6-8 pm	6-8 pm	6-8 pm	10:45 am-12:15 pm
■ ✚ ▲ Production Sessions		9 am-5:15 pm	9 am-5:15 pm	9 am-5:15 pm	10:45 am-12:15 pm 2-3:30 pm
■ ● ✚ ▲ Real-Time Live!				5:30-7 pm	

The TOP 10 Reasons to Attend **SIGGRAPH 2012**

Knowing that the majority of SIGGRAPH conference attendees rely on their employers to fund their registration and travel in part or in full, we have developed the following persuasive talking points for your employer.

1. Value

Learn all the latest techniques, tips, and technologies in one location at a very reasonable price. SIGGRAPH 2012's exclusive educational programs offer the best return on investment for your organization's training budget.

2. Experts In-Residence

Consolidate new knowledge and skills by working directly with the experts in the field. In SIGGRAPH 2012's papers, courses, talks, and studio, you'll develop the professional assets you need for another year of creative and business success.

3. Time Optimization

Explore the full spectrum of computer graphics and interactive techniques in one intense, rewarding week. At SIGGRAPH 2012, you'll gain knowledge, contacts, and skills that could take more than a year to acquire elsewhere.

4. Customization

Design the conference experience that delivers the best value for you and your organization. SIGGRAPH 2012 offers a very diverse range of sessions, experiences, and collaboration opportunities.

5. Industry Visionaries

Meet and exchange ideas with the superstars who created this dynamic field and the young visionaries who are building its future.

6. Connections

Join your friends and colleagues from around the world, and make invaluable new connections. SIGGRAPH 2012 is the annual destination location for computer graphics and interactive techniques.

7. Essential Resources

Discover all the resources you need to support your creativity, improve your efficiency, and grow your business. The SIGGRAPH 2012 Exhibition features hardware, software, and services from the leading companies in the industry.

8. World-Class Animation and Visual Effects

Immerse yourself in this year's best work in animated storytelling, scientific visualization, advertising, games, and feature films. The Computer Animation Festival presents four days of screenings and live demos.

9. Los Angeles

Enjoy this world-class, entrepreneurial city where exploration, innovation, and experimentation merge with the creativity, advanced technology, and business innovation that have made SIGGRAPH the international capital of digital media.

10. Inspiration

Leave SIGGRAPH 2012 with new skills, creativity, and energy, ready to rejuvenate your career and inspire your organization's next phase of leadership in computer graphics and interactive techniques.

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Sky "360" © 2011 The Moving Picture Company, United Kingdom

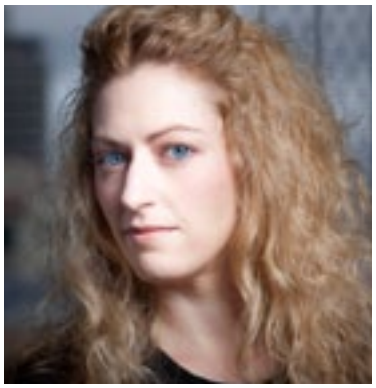
Conference Overview

Art **Science** Technology **People** Together **SIGGRAPH**

Conference Registration Categories

- ■ **Full Conference Access**
- ● **Basic Conference Access**
- ✚ **Basic Conference Plus**
- ▲ **Computer Animation Festival**
- ★ **Exhibitor**

One-Day registration includes access for one day to conference programs and events associated with that level of registration and all days of the Exhibition (Tuesday-Thursday). One-Day access does not include technical documentation or tickets for the Reception.



■ ● ✚ ▲ ★

Keynote Speaker

#siggraph #keynote

Jane McGonigal

Chief Creative Officer for SuperBetter Labs

Monday, 6 August, 11am-1pm

Jane McGonigal's *Reality Is Broken: Why Games Make us Better and How They Can Change the World* (2011) is in digital and analog bookstores everywhere. She is a game researcher, developer, player, theorist, and evangelist:

> "My #1 goal in life is to see a game designer nominated for a Nobel Peace Prize. I've forecast that this will happen by the year 2023. Of course, it's not enough to just forecast the future — I'm also actively working to make it a reality."

She uses alternative reality games (ARGs) to conduct research, build communities, connect with markets, and solve real-world problems. She directed the world's first massively multiplayer forecasting game, Superstruct, which brought together more than 7,000 future forecasters from 90 countries. Her games work to solve many real-world challenges from curing disease to addressing issues of poverty, hunger, and a world without petroleum.

She is the Director of Game Research and Development at the Institute for the Future in Palo Alto, California, where she earned Harvard Business Review honors for one of the Top 20 Breakthrough Ideas of 2008. *The New York Times* featured her as one of 10 scientists with the best vision for what's coming next, *BusinessWeek* called her one of the Top 10 Innovators to Watch, and *Fast Company* named her one of the 100 Most Creative People in business.

Conference Overview

Reception

Monday, 6 August 9-11 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 dessert and a convivial evening with people you haven't seen since SIGGRAPH 2011. And meet the people you need to know for another year of professional success and adventure.

ACM SIGGRAPH Awards Presentations (included with Keynote Speaker)

#siggraph #awards

ACM SIGGRAPH Award Talks

#siggraph #awards

The Computer Graphics Achievement Award
Awarded annually to recognize a major accomplishment that provided a significant advance in the state of the art of computer graphics and is still significant and apparent.

The Significant New Researcher Award
Awarded annually to a researcher who has made a recent significant contribution to the field of computer graphics and is new to the field. The intent is to recognize people who, though early in their careers, have already made a notable contribution.

The Distinguished Artist Award for Lifetime Achievement in Digital Art
Awarded annually to an artist who has created a substantial and important body of work that significantly advances aesthetic content in the field of digital art.

ACM SIGGRAPH Outstanding Service Award
This award, is given on even-numbered years to recognize outstanding service to ACM SIGGRAPH by a volunteer. It recognizes persons who have given extraordinary service to ACM SIGGRAPH, both in the trenches and in positions of more responsibility or visibility, over a significant period of time.

ACM Student Research Competition

#siggraph #awards

Twenty-five student posters are selected for judging at SIGGRAPH 2012. The panel of distinguished judges selects five semi-finalists. The semi-final poster authors present their work to the judges.

Art Gallery: In Search of the Miraculous

#siggraph #artgallery

Unique perspectives reveal moments of wonderment in a technologically mediated world.

Birds of a Feather (BOF)

#siggraph #bof

Informal presentations, discussions, and demonstrations, designed by and for people who share interests, goals, technologies, environments, or backgrounds.

Courses

#siggraph #courses

Expand your knowledge and enhance your career. Industry and academic experts teach SIGGRAPH 2012 Courses on the fundamental principles of computer graphics and interactive techniques, practical solutions to everyday challenges, and advanced theoretical approaches to the next wave of innovation.

Emerging Technologies

#siggraph #etech

Sponsored by

Adventurous robotic experiments, pre-production protoypes of glasses-free 3D displays, speculative plant-based interfaces, force-feedback haptic displays, and other futuristic systems, all available for hands-on interaction.

Exhibition

#siggraph #exhibits

Discover all the resources you need to support your creativity, improve your efficiency, and grow your business. The SIGGRAPH 2012 Exhibition features hardware, software, and services from the leading companies in the industry.

Exhibitor Tech Talks

#siggraph #techtalks

Get the inside story direct from the commercial developers of tomorrow's hot hardware, software, and systems. Join question-and-answer exchanges and one-on-one conversations with the presenters after each presentation by exhibitors who participate in the SIGGRAPH 2012 Exhibition.

International Resources

#siggraph #international

Learn how the industry is evolving worldwide and collaborate with attendees from five continents. The International Center offers informal translation services, and space for meetings, talks and demonstrations.

Conference Overview

SIGGRAPH Business Symposium

#siggraph #symposium

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

A full day of frank discussions, networking opportunities, talks, and panels that investigate critical international issues related to intellectual property, venture capital, complex legal systems, and other topics vital to the health and welfare of a global creative community.

A **separate admission fee** is required for the SIGGRAPH Business Symposium.
It is **not included** in any of the SIGGRAPH 2012 registration categories.

Job Fair

#siggraph #jobfair

Looking for opportunity? Interested in meeting with some inspiring companies? Discover your future at SIGGRAPH 2012. In the Job Fair, attendees connect with employers before, during, and after the conference via the CreativeHeads.net job board and candidate profiling system.

Panels

#siggraph #panels

Expert panelists share experiences, opinions, insights, speculation, disagreement, and controversy with each other and the audience. Panel topics range from motion-controlled gaming to the growing use of virtual production in game and film creation.

Papers

Explore the most advanced research results in computer graphics and interactive techniques. These prestigious juried sessions are the premier international forums in their respective fields.

Technical Papers

#siggraph #techpapers

The premier international forum for peer-reviewed research in computer graphics and interactive techniques. SIGGRAPH Technical Papers reveal new directions and define the future of imaging, interfaces, interaction, and international collaboration.

Art Papers

#siggraph #artpapers

Scholars and artists report and analyze their recent findings on current trends in digitally mediated art.

Posters

#siggraph #posters

Student, in-progress, and late-breaking work on novel interactive techniques and in-depth research in specific areas. Posters are displayed throughout the conference, and poster authors meet and discuss their work with attendees during Poster Presentations.

SIGGRAPH Dailies!

#siggraph #dailies

This celebration of excellence in modeling, shading, animation, lighting, effects, and more showcases images and short animations of extraordinary power and beauty. Each presenter has one minute to present an animation and describe the work.

Sponsored by DreamWorks

SIGGRAPH Mobile New!

#siggraph #mobile

Inspired by SIGGRAPH Asia 2011's popular Symposium on Apps, this new program presents the latest advances in mobile technologies. Explore what's possible, and when, for computers that can remain in their bags at security checkpoints.

Studio

#siggraph #studio

A hands-on creative space for art and design of all kinds. Try out a wide range of new techniques and media. Play with the latest in 3D printing, modeling, and animation software. Bring your ideas to life with tomorrow's technologies in gigapixel imaging, motion capture, and more.

Talks

#siggraph #talks

Discover recent achievements and work in progress in all areas of computer graphics and interactive techniques: art, design, animation, visual effects, interactivity, research, engineering, and games. Talks take you behind the scenes and into the minds of the innovators who are leading the way in computer graphics and interactive techniques.

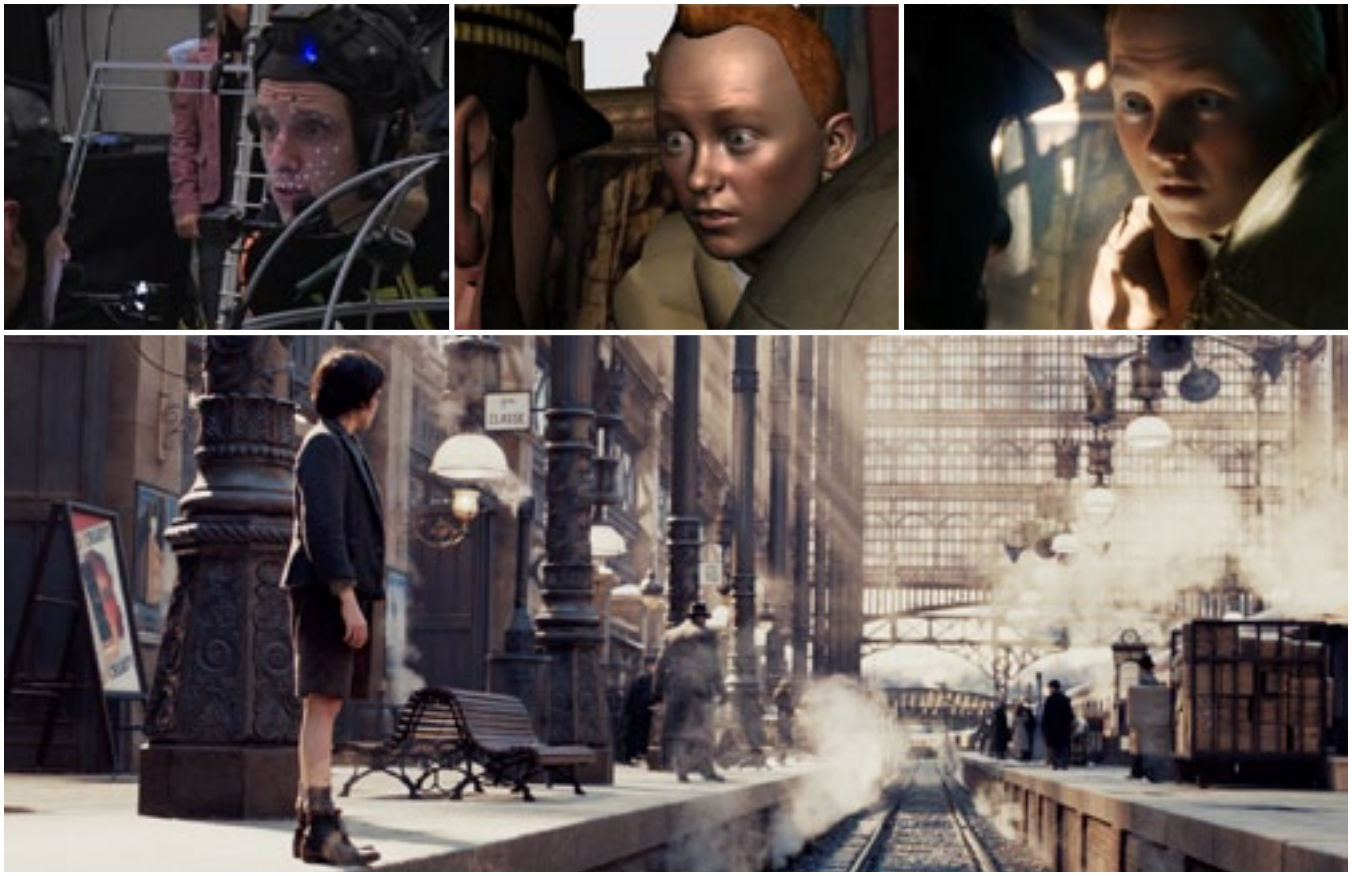
Technical Papers Fast Forward

#siggraph #techpapers

The world's leading experts in computer graphics and interactive techniques preview the technical papers in provocative, sometimes hilarious summaries of the field's evolution. The author(s) of each paper are allowed a little less than a minute to wow the crowd with their results and entice attendees to hear their complete paper presentation later in the week.

Computer Animation Festival

Full Conference Access
Computer Animation Festival
Basic Conference Plus
#siggraph #caf



The world's most prestigious annual festival of amazing innovation in digital film and video includes outstanding achievements in time-based art, scientific visualization, visual effects, real-time graphics, animation, and narrative shorts. Relax and enjoy an amazing compilation of animated works ranging from student pieces to blockbuster video games and feature films.

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.

Real-Time Live!

Real-Time Live! is the premiere showcase for the latest trends and techniques for pushing the boundaries of interactive visuals. As part of the Computer Animation Festival, an international jury selects submissions from a diverse array of industries to create a fast-paced, 90-minute show of cutting-edge, aesthetically stimulating real-time work.

#siggraph #realtime

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Computer Animation Festival

#siggraph #caf

Production Sessions

#siggraph #caf

Learn how world-class creative and production talent created the computer animation and visual effects in some of the Computer Animation Festival's most provocative works.

Pixomondo Presents Hugo: A Cinematic Convergence of 3D and Visual Effects

Monday, 6 August, 9-10:30 am

In "Hugo", Martin Scorsese's love letter to classic cinema and cinema history, the director was passionate about pushing the capabilities of stereoscopic filmmaking to new heights. Pixomondo developed custom workflows to handle complex challenges in VFX and capture all of the live-action production data required to accommodate the rigorous effects and post-production demands of the project. This Pixomondo panel discusses the creative and technical challenges they overcame to achieve Scorsese's vision for early filmmaking in stereo 3D. Also joining them will be New Deal Studios visual effects supervisor, Matthew Gratzner, who was responsible for creating the train crash sequence in the film.

Panelists

Pixomondo

Ben Grossman
Visual Effects Supervisor

Alex Henning
Digital Effects Supervisor

Adam Watkins
CG Supervisor

New Deal Studios

Matthew Gratzner
Visual Effects Supervisor

Assembling the VFX for Marvel's "The Avengers"

Monday, 6 August, 2-3:30 pm

Leaders of the visual effects teams from Industrial Light & Magic and Weta Digital will discuss the unique effects challenges that this blockbuster film presented and how the studios broke new ground with their respective approaches to creating the seamless effects work. From the epic Mountain Battle between Iron Man and Thor and the climatic alien invasion of Manhattan to bringing the Hulk to life, the supervisors will detail what worked, what didn't and the complexities involved in bringing "The Avengers" to the big screen.

Panelists

Victoria Alonso
Executive Producer and Executive Vice President of Visual Effects & Post Production, Marvel Studios

Jeff White
Visual Effects Supervisor, Industrial Light & Magic

Guy Williams
Visual Effects Supervisor, Weta Digital

Marc Chu, Animation Supervisor
Industrial Light & Magic

Aaron Gilman
Animation Supervisor, Weta Digital

Building Disney•Pixar's "Brave": Pencils to Pixels

Monday, 6 August, 3:45-5:15 pm

From bouncing red curls to gusty dark forests, this panel summarizes how Disney•Pixar created their summer 2012 film: "Brave." The artists lead a guided tour through "Brave's" production pipeline, illustrating the kind of exploration and problem-solving required to move an asset from initial design through characters and sets, animation, and lighting, and into a final rendered frame.

Panelists

Colin Thompson
Character Shading Supervisor

Tia Kratter
Shading Art Director

Claudia Chung
Simulation Supervisor

Danielle Feinberg
Director of Photography, Lighting

Sony Pictures Animation: Checking in at "Hotel Transylvania"

Tuesday, 7 August, 9-10:30 am

Welcome to "Hotel Transylvania", Dracula's lavish five-stake resort, where monsters and their families can live it up, free to be the monsters they are without human interference. For one special weekend, Dracula invites some of his best friends – Frankenstein and his bride, the Mummy, the Invisible Man, the Werewolf family, and more – to celebrate his beloved daughter Mavis's 118th birthday. In this session, first-time feature director Genndy Tartakovsky ("Dexter's Laboratory", "Samurai Jack", "Clone Wars") and the creative team behind "Hotel Transylvania" explore the art, unique animation style, and technical achievements of Sony Pictures Animation's new animated feature.

Digital Domain Presents "Making the Steel Real: Moving VFX Into Production"

Tuesday, 7 August, 10:45 am-12:15 pm

Nominated for a visual effects Academy Award, DreamWorks' "Real Steel" was recognized not only for its rollicking boxing matches between CG robots, but also for the seamless way the film moves between practical robots and their CG counterparts. In this panel, some of the "Real Steel" filmmakers walk through robot design, explain key techniques and shots, and share the groundbreaking virtual-production process that they packed up and moved to Detroit, which compressed the shooting schedule to 71 days with no second unit.

Moderator

Michael Fink
Academy-Award-Winning Visual Effects Supervisor

Panelists

Ron Ames
Associate Producer

Erik Nash
Digital Domain

John Rosengrant
Legacy Effects

Swen Gillberg
Digital Domain

Dan Taylor
Animation Supervisor

Computer Animation Festival

#siggraph #caf

Sony Pictures Imageworks: Travel Behind the Scenes of "Men in Black 3"

Tuesday, 7 August, 10:45 am-12:15 pm

Sony Pictures Imageworks' visual effects for "Men in Black 3" included diverse and richly detailed characters and environments, all created with a heightened sense of realism. With a mix of humor and style, the Men in Black return to 1969 with a digital re-creation of New York's Shea Stadium and the Apollo 11 rocket launch, and an action-packed monocycle chase through the streets of Brooklyn. This panel explores the challenges and achievements of producing the visual effects for "Men in Black 3".

Sony Pictures Imageworks: The Untold Story of "The Amazing Spider-Man"

Tuesday, 7 August, 2-3:30 pm

Sony Pictures Imageworks oversaw the visual effects for the untold story of Spider-Man, set in a gritty, edgy urban world. The VFX team established a visual style that naturally blends cutting-edge live-action stunt work, extensive digital environments, and CG character animation. This panel provides a revealing inside look at VFX production for an "amazing" film.

Rhythm & Hues Studios: 25 Years of Art, Technology and People

Tuesday, 7 August, 3:45-5:15 pm

In this panel and presentation, an array of artists and executives associated with the past and present of Rhythm & Hues Studios explore the many factors that have led to the studio's longevity and success. Highlights include a retrospective of the company's early days, from its origins at the pioneering CGI company Robert Abel and Associates in the 1970s and 80s and the founding of Rhythm & Hues in 1987, to its groundbreaking animation work in the 90s and its recent work "The Chronicles of Narnia: The Lion, the Witch and the Wardrobe", VFX Oscar-winner "The Golden Compass", "The Incredible Hulk", the "Alvin & The Chipmunks" franchise, and more.

LAIKA's ParaNorman: The Fusion of Stop-Motion and CG in a Zombie-Ridden World

Wednesday, 8 August, 9-10:30 am

Get a first-hand, 3D look at ParaNorman's interdependent combination of stop-motion and CG in an environment where hand-crafted movement is seamlessly integrated with computer technology, from initial concept to final frame. In this session from LAIKA, Academy Award-winner Brian Van't Hul (VFX Supervisor) is joined by Steve Emerson (Compositing Supervisor) and Andrew Nawrot (CG and Look Development Supervisor). They will discuss the collaborative relationship of the technologies in the upcoming feature ParaNorman (in theaters August 17).

Panelists

Brian Van't Hul
VFX Supervisor

Steve Emerson
Compositing Supervisor

Andrew Nawrot
CG and Look Development Supervisor

Industrial Light & Magic Presents: The Visual Effects of "Battleship"

Wednesday, 8 August, 10:45 am-12:15 pm

A behind-the-scenes look at Peter Berg's blockbuster sci-fi epic "Battleship". The ILM production team reviews the film's various challenges and describes why it was necessary to revamp the studio's award-winning fluid-simulation system. Also, advances in CG destruction and simulation technology required to accurately depict everything from a resurrected World War II battleship to a fleet of modern-day naval ships, not to mention aliens and their formidable fleet of spacecraft.

Panelists

Grady Cofer
Pablo Helman
Visual Effects Supervisors

Glen McIntosh
Animation Supervisor

Willi Geiger
CG Supervisor
Industrial Light & Magic

Balancing Act: Life as a Visual Effects Supervisor at DreamWorks Animation

Wednesday, 8 August, 2-3:30 pm

In this panel, the Visual Effects Supervisors for the last two and next two DreamWorks Animation films discuss how they approached each production. In the studio environment, there are opportunities to share development with other shows, but differing visual requirements also mean each show has unique needs. How do the visual-effects teams balance the safety of using tried-and true-techniques with the requirements to create ever more visually sophisticated and complex work? How do they manage the benefits of sharing across shows with the specific needs of their show? Each panelist shares some successes (and failures!) from their most recent projects.

Panelists

Ken Bielenberg
"Puss in Boots"

Mahesh Ramasubramanian
"Madagascar 3: Europe's Most Wanted"

David Prescott
"Rise of the Guardians", November 2012

Markus Manninen "The Croods", March 2013
DreamWorks Animation

Computer Animation Festival

#siggraph #caf

Weta Digital Presents Virtual Production: Combining Animation, Visual Effects, and Live-Action Filmmaking

Wednesday, 8 August, 3:45-5:15 pm

Four-time Oscar-winning Senior Visual Effects Supervisor, Joe Letteri, presents Weta Digital's pioneering virtual-production work on "The Adventures of Tintin" and "Avatar". His talk also addresses workflow development at Weta going all the way back to "The Lord of the Rings" and suggests some areas of future development. Weta sees virtual production as a connected, holistic approach to filmmaking that melds the best of animation and live-action techniques in pre-production, onset, and post. This presentation demonstrates how virtual production brings all of the components of filmmaking together to provide a way of working that has attracted directors like Peter Jackson, James Cameron, and Steven Spielberg.

High Frame Rate Cinema, Impacts on Art and Technology With Douglas Trumbull and Dennis Muren: Moderated by Christie Digital

Wednesday, 8 August, 10:45 am-12:15 pm

Some of the biggest movies on the horizon – "Avatar's" sequels and "Lord of the Rings" prequels – will be presented in stereoscopic 3D high-frame-rate cinema. Peter Jackson and James Cameron are betting on their expectation that audiences will love the more immersive and detailed worlds that these 3D productions can offer. But what IS high-frame-rate cinema, and what will it mean to producers of content and to the audience experience? This panel of experts explains high-frame-rate cinema and discusses the implications of producing and experiencing cinematic content in the new medium.

Panelists

Paul Salvini
Christie Digital Systems USA, Inc.

Douglas Trumbull
Filmmaker

Dennis Muren
Industrial Light & Magic

Phil Oatley
Park Road Post Production

Lincoln Wallen
DreamWorks Animation

Jim Beshears
DreamWorks Animation SKG

Darin Grant
Digital Domain

Matthew Cowan
RealD Inc.

Luke Moore
Side Effects Software Inc.

John Helliker
Screen Industries Research and Training Centre

The Art and Science Behind Walt Disney Animation Studios' "Paperman"

Thursday, 9 August, 10:45 am-12:15 pm

Applying a technique that seamlessly merges computer-generated and hand-drawn animation techniques, first-time director, John Kahrs, takes the art of animation in a bold new direction with "Paperman". Using a minimalist black-and-white style, the short film follows the story of a lonely young man in mid-century New York City, whose destiny takes an unexpected turn after a chance meeting with a beautiful woman on his morning commute. In this panel, members of the small, innovative group at Walt Disney Animation Studios that created "Paperman" share their insights about the art, design, and technology of this innovative project.

Moderator

Darrin Butters
Animator

Panelists

John Kahrs
Director

Patrick Osborne
Animation Supervisor

Amol Sathe
Lighting and Compositing Supervisor

Jeff Turley
Art Director

Brian Whited
Final Line Software

Ninja Theory Presents DmC Devil May Cry: Breathing Life Into Video Games

Thursday, 9 August, 2-3:30 pm

The much-anticipated new entry in the iconic Devil May Cry series of videogames, DmC Devil May Cry details Dante's early years, retaining the stylish action, fluid combat, and self-assured protagonist that have defined the iconic series but injecting a more brutal and visceral edge. In this behind-the-scenes session, the key creatives behind the project discuss the challenges and successes behind the game's development.

Panelists

Tameem Antoniades
Creative Director
Ninja Theory

Stuart Adcock
Technical Art Director
Ninja Theory

Conference Schedule (Subject to change.)

Registration

Sunday, 5 August
8 am - 6 pm

Monday, 6 August
8:30 am - 6 pm

Tuesday, 7 August
8:30 am - 6 pm

Wednesday, 8 August
8:30 am - 6 pm

Thursday, 9 August
8:30 am - 3:30 pm

Art Gallery

Emerging Technologies

Posters*

The Studio

*Posters close at 5:30 pm on Thursday, 9 August

Sunday, 5 August
Noon - 5:30 pm

Monday, 6 August
9 am - 5:30 pm

Tuesday, 7 August
9 am - 5:30 pm

Wednesday, 8 August
9 am - 5:30 pm

Thursday, 9 August
9 am - 1 pm

Sunday, 5 August

8 am - 5:30 pm

SIGGRAPH Business Symposium
(NOT included with SIGGRAPH conference registration packages. This is an additional cost. See page 55.)

9 am - 12:15 pm

Course: Fundamentals Seminar

9 am - 6 pm

International Center

ACM SIGGRAPH Theater Event: International Sessions on the Current State of Computer Graphics Around the World

10:30-11:30 am

ACM SIGGRAPH Theater Event: CG in USA + Canada

Noon - 1 pm

BOF: IVRC: International Collegiate Virtual Reality Contest

12:30 pm-2 pm

BOF: Studio Views of Demo Reels

2-3 pm

BOF: Teaching OpenGL in a Post-Deprecation World

2-3:30 pm

BOF: Blender Foundation - Community Meeting

Course: Computational Displays

Course: The Invisible Art: The History of Matte Painting Through the Digital Age

Course: State-of-the-Art Stereoscopic Visual Effects: Stereoscopy and Conversion are "More Than Meets the Eye"

SIGGRAPH Mobile Workshop: A Very Basic Introduction to GLKit for IOS 5: Getting Up and Running

Studio Workshop: Body Monitoring: Exploring the Creative Uses of Invasive Technologies

Talks: Game Worlds

2-5:15 pm

Course: The Hitchhiker's Guide to the Galaxy of Mathematical Tools for Shape Analysis

Course: Optimizing Realistic Rendering With Many-Light Methods

Course: Principles of Animation Physics

Geek Bar

3-4:50 pm

ACM SIGGRAPH Theater Event: ACM SIGGRAPH Digital Arts Community

3-5 pm

BOF: Digital Art Community, ACM-SIGGRAPH

BOF: Khronos Institute for Training and Education (KITE) for Educators

3:30-5 pm

BOF: Blender Foundation - Artist Showcase

3:45-5:15 pm

Panel: The Battle for Motion-Controlled Gaming and Beyond

Course: Storytelling With a Camera and a Computer: Q&A With Cinematographer Roger Deakins

6-8 pm

Technical Papers Fast Forward

8:30-11 pm

BOF: Taipei ACM SIGGRAPH Chapter Reunion

Conference Overview

Monday, 6 August

9-10 am

BOF: Exploring Software Delivery and Pipeline Choices for Students in the Cloud

9-10:30 am

Computer Animation Festival Production Session: Pixomondo Presents Hugo: A Cinematic Convergence of 3D and Visual Effects

Course: Computational Plenoptic Imaging

Course: Computational Aesthetic Evaluation: Steps Toward Machine Creativity

Panel: Virtual Production Branches Out

Studio Talks: Jamming

Studio Workshop: Material is Expensive But Complexity is Free

Talks: Pointed Illumination

Technical Papers: Character Locomotion

Technical Papers: Shape Analysis

9 am-5:35 pm

Geek Bar

9 am-6 pm

International Center

ACM SIGGRAPH Theater Event: International Sessions on the Current State of Computer Graphics Around the World

11 am-Noon

BOF: ASIFA-Hollywood Animation Educators Forum Asks: How Do We Maintain Excellent Animation Programs and Teach the Latest Technology at the Same Time?

11 am-1 pm

ACM SIGGRAPH Award Presentation

Keynote Speaker: Jane McGonigal, Chief Creative Officer for SuperBetter Labs; Author of The New York Times Best Seller, *Reality Is Broken*

Noon-1 pm

BOF: The ACME Network Presents: Animation and 21st Century Skills – Mentoring From the Front Line, Online

1-1:50 pm

ACM SIGGRAPH Theater Event: CG in Australasia + Sydney ACM SIGGRAPH Chapter

1-2 pm

BOF: Teaching Procedural Workflows

1-2:30 pm

BOF: Undergraduate Research Alliance

2-3 pm

BOF: Skyline: Open Sourcing the Pipeline

2-3 pm

BOF: Teaching Artists to Program With Algorithmic Art

2-3:30 pm

ACM SIGGRAPH Award Talks

Course: Virtual Texturing in Software and Hardware

Studio Talks: Design Computing I

Studio Workshop: Presenting Mojito: A Yahoo! Library Implementing a JavaScript-Based On-Line/Off-Line, Multi-Device, Hosted Application Platform

Talks: Head in the Clouds

Technical Papers: Cloth

Technical Papers: Image Processing

2-5:15 pm

Course: Introduction to Modern OpenGL

2:30-3:20 pm

ACM SIGGRAPH Theater Event: ACM SIGGRAPH Student Chapters

3-4 pm

BOF: 3D Animation Education Around the World

3:30-4:20 pm

ACM SIGGRAPH Theater Event: CG in Africa + Middle East

3:45-5:15 pm

Computer Animation Festival Production Session: Building Disney•Pixar's "Brave": Pencils to Pixels

Studio Talks: Grooving

Talks: Surf & Turf

3:45-5:35 pm

Talks: Material: The Gathering

Technical Papers: Appearance

Technical Papers: Hand, Eye, and Face

Technical Papers: Sketching

4-5 pm

BOF: Visualization/Visual Analytics Curriculum

5-6 pm

BOF: Hacking Objects: An Exploration in Rule Breaking

6-7:30 pm

BOF: The 25th Anniversary CG Show/Sake Barrel Opening Party at SIGGRAPH 2012

6-8 pm

Computer Animation Festival: Electronic Theater

Conference Overview

8:30 pm–2 am

ACM SIGGRAPH Chapters Party

9-11 pm

Conference Reception

Tuesday, 7 August

9-10:30 am

Art Papers: Expanding Boundaries: Sensory Technologies in Art Making

BOF: Women In Animation International

Computer Animation Festival Production Session: Sony Pictures Animation: Checking in at "Hotel Transylvania"

Course: Cinematic Color: From Your Monitor to the Big Screen

Studio Talks: Wild Rides

Studio Workshop: ZBrush: Artists Without Borders

Technical Papers: Fabrication

9 am-5:35 pm

Geek Bar

9 am-6 pm

International Center

ACM SIGGRAPH Theater Event: International Sessions on the Current State of Computer Graphics Around the World

9:30 am-6 pm

Exhibition

9:30 am-6 pm

Job Fair

9 am-12:15 pm

Course: Beyond Programmable Shading

Course: Data-Driven Simulation Methods in Computer Graphics: Cloth, Tissue, and Faces

Course: Practical Physically Based Shading in Film and Game Production

10:45 am-12:15 pm

Art Panel 1: In Search of the Miraculous

Art Papers: Mediating the Material and the Immaterial: The Embodiment of Sound, Light, and Social Life in Spatial Practices

Computer Animation Festival Production Session: Digital Domain Presents "Making the Steel Real: Moving VFX Into Production"

Computer Animation Festival Production Session: Sony Pictures Imageworks: Travel Behind the Scenes of "Men in Black 3"

Studio Workshop: Python Scripting in Maya

Technical Papers: Geometry Reconstruction & Tracking

Technical Papers: Sampling, Reconstructing, and Filtering Light

11 am-12:30 pm

BOF: From CAD to the Web

11 am-1 pm

BOF: Substrate: Mobile Gesture for the Processing Graphics Environment

11:15 am-12:15 pm

Exhibitor Tech Talk: Unity Technologies – Unity Art Pipeline, Butterfly Demo

Noon-1:20 pm

ACM SIGGRAPH Theater Event: ISEA International Foundation - Open Forum

12:15-1:15 pm

Poster Presentations

12:30-2:30 pm

BOF: ACM SIGGRAPH Carto BOF

12:45-1:45 pm

Exhibitor Tech Talk: AMD – AMD FirePro Advanced 3D Graphic and Compute Features & AMD FirePro 3D Graphics and Compute Combined on Latest GPU Architecture in Deep Dive

1-2:30 pm

BOF: Kinect Users

1:30-2:30 pm

ACM SIGGRAPH Theater Event: CG in Latin America

2-3:30 pm

Computer Animation Festival Production Session: Sony Pictures Imageworks: The Untold Story of "The Amazing Spider-Man"

Studio Talks: Big Game

Talks: Model Stories

Talks: Three is a Crowd

Technical Papers: Light Rays

Technical Papers: Particle Fluids

Technical Papers: Sets of Shapes

2-5:15 pm

Course: Character Rigging and Creature Wrangling in Game, Feature Animation, and Visual Effects Production

2:15-3:15 pm

Exhibitor Tech Talk: Next Limit Technologies – RealFlow 2013 Technology Preview

2:30 pm - 3:30 pm

BOF: 3D Medical Visualization Using X3D

Studio Workshop: MaxScript for Artists

Conference Overview

Tuesday, 7 August (continued)

3-4 pm

ACM SIGGRAPH Theater Event: CG in Asia

3-4:30 pm

BOF: Practical Application of Alembic

3-5 pm

BOF: Motion Graphics

3:30-5 pm

BOF: JogAmp: 2D/3D & Multimedia Across Devices

BOF: Web3D Consortium Town Hall Meeting

3:40-4:40 pm

Exhibitor Tech Talk: CentiLeo - Huge-Scene Interactive Rendering on a Laptop

3:45-5:15 pm

Computer Animation Festival Production Session: Rhythm & Hues Studios: 25 Years of Art, Technology and People

Course: Delivering Creative Feedback: A Workshop on Critique

Course: Applying Color Theory to Digital Media and Visualization

Studio Talks: Digifab

Studio Workshop: Signal Strength: Activist Networking Techniques

3:45-5:35 pm

Technical Papers: Control Deformables

Technical Papers: Fun With Video

Technical Papers: Noise and Texture

4-5 pm

Educators Meet and Greet

4-6 pm

BOF: ACCAD/Ohio State Alumni Gathering

5:05-6 pm

Exhibitor Tech Talk: Imagination Technologies Limited – Accelerating Look Development With Rhinoceros Interactive Ray-Traced Viewports

5:30-7 pm

BOF: Dynamic Simulation in Production

6-8 pm

ACM SIGGRAPH Pioneer Reception (Open to Pioneer members only)

Computer Animation Festival: Electronic Theater

6:15-7:45 pm

SIGGRAPH Dailies!

7-8 pm

BOF: Animation: From Visual Development to Art Direction

8-9 pm

BOF: Image-Based Lighting Using Pixar's RenderMan

Wednesday, 8 August

9-9:50 am

ACM SIGGRAPH Theater Event: ACM SIGGRAPH Chapters Business Meeting

9-10 am

Exhibitor Sessions: Intel Corporation - Embree: Photo-Realistic Ray Tracing Kernels

9-10:30 am

Computer Animation Festival Production Session: LAIKA's "ParaNorman": The Fusion of Stop Motion and CG in a Zombie-Ridden World

Exhibitor Sessions: Intel Corporation - Embree: Photo-Realistic Ray Tracing Kernels

SIGGRAPH Mobile Panel: Mobile GPUs: Markets and Technology

Studio Talks: Doing Design

Studio Workshop: Making Your Own Avatar - Realistic Faces and Expressions Workshop

Talks: Priming the Pipe

Technical Papers: Displays

Technical Papers: Shape Transformation

9 am-12:15 pm

Course: FEM Simulation of 3D Deformable Solids: A Practitioner's Guide to Theory, Discretization, and Model Reduction

Course: Advances in Real-Time Rendering in Games: Part I

9 am-5:30 pm

Exhibitor Session: NVIDIA

9 am-5:35 pm

Geek Bar

9 am-6 pm

International Center

ACM SIGGRAPH Theater Event: International Sessions on the Current State of Computer Graphics Around the World

9:30 am-6 pm

Exhibition

Job Fair

9:45-10:45 am

Art Panel 2: The Message is in the Medium

Exhibitor Tech Talk: Qt Commercial, Digia – Learn How to Develop Powerful Advanced Visualization Applications and UIs With Qt Commercial

Conference Overview

Wednesday, 8 August (continued)

10-11 am

BOF: 3D Modeling Standards Development

BOF: OpenScenegraph BOF

BOF: X3DOM a Declarative 3D Solution

10 am-Noon

BOF: Christians in Computer Animation

BOF: Collaboration Between Education and Industry: The New Model

10:45-11:45 am

Exhibitor Sessions: Intel Corporation - Efficient Anti-Aliasing on Intel HD graphics

10:45 am-12:15 pm

Computer Animation Festival Production Session: Industrial Light & Magic Presents: The Visual Effects of "Battleship"

Computer Animation Festival Production Session: High Frame Rate Cinema, Impacts on Art and Technology with Douglas Trumball and Dennis Murren

SIGGRAPH Mobile Talks: Understanding Mobile Graphics – GPUs and Platforms

Studio Workshop: VFX for Games: Pre-Baked Destruction

Talks: Capture the World

Technical Papers: Maps, Surfaces, and Shapes

Technical Papers: Stitching

11 am-12:30 pm

BOF: Augmented and Mixed Reality

11 am-1 pm

BOF: Using Advanced Imaging for Developing Dream Slides

11:15 am-12:15 pm

Exhibitor Tech Talk: AMD – AMD FirePro Advanced 3D Graphic and Compute Features & AMD FirePro 3D Graphics and Compute Combined on Latest GPU Architecture in Deep Dive

12:15-1:15 pm

Poster Presentations

12:30-1:20 pm

ACM SIGGRAPH Theater Event: Professional and Student ACM SIGGRAPH Chapters Start-Up Meeting

12:45-1:45 pm

Exhibitor Tech Talks: Web3D Consortium – Delivering New Dimensions on the Web

1-2:30 pm

BOF: *Leonardo* Community Meeting

1:30-2:30 pm

ACM SIGGRAPH Theater Event: CG in Europe

2-3 pm

BOF: COLLADA

BOF: Computer Graphics for Simulation

BOF: San Francisco ACM SIGGRAPH Meeting

Exhibitor Sessions: Intel Corporation - Optimizing Film and Media with OpenCL and Intel Quick Sync Video

2-3:30 pm

BOF: Studio Trainer Meet Up

Computer Animation Festival Production Session: Balancing Act: Life as a Visual Effects Supervisor at DreamWorks Animation

SIGGRAPH Mobile Talks: Mobile Graphics – Hardware and Software Techniques

Studio Talks: Space is the Place

Studio Workshop: Building a Game Level

Talks: Building Character

Talks: Play Time

Talks: Effects Omelet

Technical Papers: Interactive Systems & Hardware

2-4 pm

BOF: Animating Diversity

2-5:15 pm

Course: Advances in Real-Time Rendering in Games II

Course: GPU Shaders for OpenGL 4.x

2:15-3:15 pm

Exhibitor Tech Talk: Imagination Technologies Limited – Accelerating Look Development *With* Autodesk 3ds Max and Autodesk Maya Interactive Ray Traced Viewports

2:30-5:30 pm

BOF: Web3D Standards Meeting

3-4 pm

BOF: OpenCL

3-5 pm

BOF: Managing Creative Projects

BOF: Mari Massive Texture Painter Showcase

3:15-4:15 pm

Exhibitor Sessions: Intel Corporation - The Future of OpenCL for Graphics and Film Applications on Intel Platforms

3:45-4:40 pm

Exhibitor Tech Talks: Isotropix SAS – Introducing Artistically Correct Rendering

Conference Overview

Wednesday, 8 August (continued)

3:45-5:15 pm

Computer Animation Festival Production Session: Virtual Production: Combining Animation, Visual Effects, and Live-Action Filmmaking

SIGGRAPH Mobile Talks: Mobile Applications – In Your Hand and On the Road

Studio Talks: Mesh Mash

Studio Workshop: VFX for Games: Particle Effects

3:45-5:35 pm

Technical Papers: Collisions

Technical Papers: Perception and Stereo

Technical Papers: Physics and Mathematics for Light

4-5 pm

BOF: Renderfarming

4-5 pm

BOF: WebGL

4:30-5:30 pm

Exhibitor Sessions: Intel Corporation - The Future of Visual Computing as Viewed by Intel Visual Computing Research Centers

5-6 pm

BOF: OpenGL ES

5:05-6 pm

Exhibitor Tech Talk: Imagination Technologies Limited – PowerVR: Getting Great Graphics Performance With the PowerVR Insider SDK

5:30-7 pm

Real-Time Live!

6-7 pm

BOF: OpenGL

6-8 pm

Computer Animation Festival: Electronic Theater

6-9 pm

BOF: Purdue University Birds of a Feather

7:30-9:00 pm

BOF: University of Pennsylvania and ETH Zürich Reception

Thursday, 9 August

9-10:30 am

Studio Talks: Hackerspace Continuum

Studio Workshop: Intro to Arduino

Talks: Silence! Eliminate the Noise

Technical Papers: All About Images

Technical Papers: Sound and Elements

9 am-12:15 pm

Course: Advanced (Quasi) Monte Carlo Methods for Image Synthesis

Course: Efficient Real-Time Shadows

Course: Graphics Programming for the Web

9 am-3:30 pm

International Center

ACM SIGGRAPH Theater Event: International Sessions on the Current State of Computer Graphics Around the World

9 am-5:15 pm

Geek Bar

9:30 am-3:30 pm

Exhibition

Job Fair

10:45 am-12:15 pm

Computer Animation Festival: Electronic Theater

Studio Workshop: Smart Lighting With Arduino

Talks: John Carter Scales Up

Technical Papers: Layout and Parameterization

Technical Papers: Rigid Bodies and Penalty Forces

2-3:30 pm

ACM Student Research Competition Final Presentation

Computer Animation Festival Production Session: Ninja Theory Presents DmC Devil May Cry: Breathing Life Into Video Games

Talks: Fast Realistic Lighting

Talks: Hairy Scary

Technical Papers: Geometry and Viewing

Technical Papers: Mesh Based Fluids

2-5:15 pm

Course: State of the Art in Photon-Density Estimation

3:45-5:15 pm

Course: Color Transfer

Talks: Image Playground

Talks: PANDA: Panoramas, Displays and Acquisition

Technical Papers: Faces and Hair

Art Gallery: In Search of the Miraculous

Full Conference Access
Basic Conference Pass
Basic Conference Plus
Exhibitors
#siggraph #artgallery

Framed within the mystery of technology itself or the fascinations of a technologically mediated world, from unique interfaces to unique perspectives, the SIGGRAPH 2012 Art Gallery: In Search of the Miraculous, presents digital and technologically mediated artworks that reveal moments of wonderment.

Reception: *Leonardo*, Art Papers, and Art Gallery

Tuesday, 7 August, 2-3:30 pm

Experience a sense of wonder in the digital era. Talk with the artists, designers, and Art Papers authors about their work. Meet the editors of Leonardo. And greet the members of the SIGGRAPH 2012 committee who organized this year's Art Gallery.

Sponsored by Leonardo/ISAST and The MIT Press

The MIT Press

LEONARDO

Daily Art Gallery Tours

Monday, 6 August – Wednesday, 8 August, 1-1:30 pm

Members of the Art Galley committee offer 30-minute guided tours to introduce attendees to In Search of the Miraculous. The daily tours begin in the Art Gallery.

Kapitän Biopunk: Fermentation Madness
Julian Abraham
Independent Artist

snail trail
Philipp Artus
Kunsthochschule für Medien Köln

Saturation
Daniel Barry
University at Buffalo

Adam Laskowitz
Design 5 and University at Buffalo

90° South
Alejandro Borsani
Rensselaer Polytechnic Institute

The Galloping Horse
Rémi Brun
Mocaplab

A Planetary Order (Terrestrial Cloud Globe)
Martin John Callanan
University College London and Slade Centre for Electronic Media in Fine Art, University College London

Biopoiesis
Carlos Castellanos
Steven Barnes
DPrime Research

Sustainable Cinema No. 4: Shadow Play
Scott Hessels
City University of Hong Kong

The HeartBeats Watch
Julie Legault
V2_ Institute for the Unstable Media, Royal College of Art

SymbiosisS
Kärt Ojavee
Eesti Kunstiakadeemia
Eszter Ozsvald
New York University

Coronado
Kian-Peng Ong
University of California, Los Angeles

Tardigotchi
SWAMP
University of Michigan and Victoria University of Wellington

Art Papers

Full Conference Access
#siggraph #artpapers

SIGGRAPH 2012, in collaboration with Leonardo/ISAST, features not only artists and artwork, but also the processes and theoretical frameworks for making art and contextualizing its place in society. Art Papers:

- Explore the changing roles of artists and the methods of art-making in our increasingly networked and computationally mediated world.
- Present excellent ideas in accessible ways.
- Inform artistic disciplines, set standards, and stimulate future trends.

The papers are published in a special issue of *Leonardo, The Journal of the International Society of the Arts, Sciences and Technology*. The issue also includes visual documentation of the works exhibited in the Art Gallery. Publication of this special issue coincides with SIGGRAPH 2012.

Expanding Boundaries: Sensory Technologies in Art Making

Tuesday, 7 August, 9-10:30 am

Session Chair
Victoria Szabo, Duke University

Translation + Pendaphonics = Movement Modulated Media

This paper describes a collaboration between an arts-technology research team and a performing-arts organization to create a computationally augmented, multimedia dance performed on a vertical wall.

Byron Lahey
Winslow Burleson
Arizona State University

Elizabeth Streb
The STREB Extreme Action Company

From Wunderkammern to Kinect - The Creation of Shadow Worlds

This creative team presents their 3D scanning technologies and discusses how space itself can act as a shadow, how they suture the past with the present to reveal ways that light slips secretly between us to reveal other realms.

Anneke Pettican
Brass Art and University of Huddersfield

Chara Lewis
Brass Art and Manchester Metropolitan University

Kristin Mojsiewicz
Brass Art and Edinburgh College of Art

Mediating the Material and the Immaterial: The Embodiment of Sound, Light, and Social Life in Spatial Practices

Tuesday, 7 August, 10:45 am-12:15 pm

Session Chair
Tad Hirsch
University of Washington School of Art

Soundshperes: Resonant Chamber

Resonant Chamber is a responsive interior envelope system that deploys the principles of rigid origami to transform the acoustic environment through dynamic spatial, material, and electro-acoustic technologies. The project is developed through iterative research in computational testing and full-scale prototype installation.

Geoffrey Thün
Kathy Velikov
University of Michigan and RVTR

Colin Ripley
Ryersron University and RVTR

Lisa Sauve
RVTR

Wes McGee
University of Michigan

Within an Ocean of Light: Creating Volumetric Lightscapes

The Ocean of Light project uses volumetric visualization techniques based on 3D grids of individually addressable points of light to create compelling and immersive mixed-reality experiences.

Anthony Rowe
Oslo School of Architecture and Design

Entr'acte

Entr'acte is a model from theater for analyzing and understanding hybrid and evanescent moments of the commons in transition today, for disciplining how we see and form public space and discourse.

Jordan Geiger
University at Buffalo

Reception: *Leonardo*, Art Papers, and Art Gallery

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Sponsored by Leonardo/ISAST and The MIT Press

Courses

Full Conference Access
#siggraph #courses

Learn from the experts in the field and gain inside knowledge that is critical to career advancement. Courses are structured sessions that often include elements of interactive demonstration, performance, or other imaginative approaches to teaching.

Full Conference Access registration allows attendees access to all SIGGRAPH 2012 Courses. Seating is on a first-come, first-served basis. Please be sure to arrive early for the Course you wish to attend.

Fundamentals Seminar

Sunday, 5 August,
9 am-12:15 pm

The Fundamentals Seminar is a fun, three-hour introduction to computer graphics concepts that will help new attendees get the most from the conference. The seminar is especially important for educators, but it's open to all registered attendees.

Mike Bailey
Oregon State University

State-of-the-Art Stereoscopic Visual Effects: Stereoscopy and Conversion are "More Than Meets the Eye"

Sunday, 5 August, 2-3:30 pm
Introductory

What to look for to articulate and identify poor quality conversion, an overview of the creative processes utilized in blockbuster film production, when it is appropriate to convert materials, and tips on how to shoot specifically for 2D-to-3D conversion.

Jonathan Karafin
Digital Domain Stereo Group

Computational Displays

Sunday, 5 August, 2-3:30 pm
Intermediate

An introduction to computational displays that exploit the co-design of optical elements and efficient computational processing, taking into account particular characteristics of the human visual system. Applications include 3D displays, next-generation projection systems, high-dynamic-range displays, perceptually driven devices, and computational probes.

Gordon Wetzstein
Douglas Lanman
MIT Media Lab

Diego Gutierrez
Universidad de Zaragoza

Matthew Hirsch
MIT Media Lab

The Invisible Art: The History of Matte Painting Through the Digital Age

Sunday, 5 August, 2-3:30 pm
Introductory

Matte paintings, a mainstay in the filmmaker's repertoire, are used to create realistic illusions while working within strict budgets. This course focuses on matte painting in film, ranging from traditional matte paintings to modern techniques including 3D projections and software-generated matte backgrounds.

Craig Barron
Matte World Digital

The Hitchhiker's Guide to the Galaxy of Mathematical Tools for Shape Analysis

Sunday, 5 August, 2-5:15 pm
Intermediate

A practical mathematical guide for researchers in 3D shape analysis who need to understand the mathematical concepts most methods rely on. Attendees are introduced to basics in differential geometry, then proceed to the mysteries of algebraic topology, keeping an eye on computational counterparts and applications.

Silvia Biasotti
Bianca Falcidieno
Daniela Giorgi
Michela Spagnuolo
Istituto di Matematica Applicata e Tecnologie Informatiche

Optimizing Realistic Rendering With Many-Light Methods

Sunday, 5 August, 2-5:15 pm
Intermediate

This course presents the state of the art in many-light rendering methods for global-illumination computation: scalability, real-time rendering, how to handle difficult lighting sitautions, and rendering of participating media, including Autodesk Cloud rendering.

Jaroslav Krivanek
Charles University in Prague

Milos Hasan
University of California, Berkeley

Adam Arbree

Carsten Dachsbacher
Karlsruher Institut für Technologie

Alexander Keller
NVIDIA Advanced Rendering Center

Bruce Walter
Cornell University

Courses

#siggraph #courses

Principles of Animation Physics
Sunday, 5 August, 2-5:15 pm
Introductory

Application of basic mechanics and bio-mechanics to character animation. No previous physics experience is required, but some character-animation experience is expected.

Alejandro Garcia
San Jose State University

Storytelling With a Camera and a Computer: Q&A With Cinematographer Roger Deakins
Sunday, 5 August, 3:45-5:15 pm
Introductory

With nine Academy Award nominations and three BAFTA awards, 2011 ASC Lifetime Achievement Award recipient Roger Deakins, ASC, BSC, is one of the world's leading cinematographers. This course offers a rare opportunity to hear him discuss his ideas and approach to both live-action and animated features.

Computational Aesthetic Evaluation: Steps Toward Machine Creativity
Monday, 6 August, 9-10:30 am
Introductory

Current generative computer-art systems can blindly create form, but they typically lack a critical capacity in aesthetic evaluation. This course provides an overview of the evolution of computational aesthetic evaluation, empirical studies and psychological models of human aesthetic response, and contributions from the nascent field of neuroaesthetics in machine creativity.

Philip Galanter
Texas A&M University

Computational Plenoptic Imaging
Monday, 6 August, 9-10:30 am
Introductory

An intuitive overview of joint optical and computational approaches to capturing the dimensions of the plenoptic function with a focus on light-field acquisition and ultra-fast imaging.

Gordon Wetzstein
MIT Media Lab

Ivo Ihrke
Universität des Saarlandes and Max-Planck-Institut für Informatik

Douglas Lanman
MIT Media Lab

Wolfgang Heidrich
The University of British Columbia

Ramesh Raskar
MIT Media Lab

Kurt Akeley
Lytro, Inc.

Virtual Texturing in Software and Hardware
Monday, 6 August, 2-3:30 pm
Intermediate

An introduction to partially resident textures, a hardware implementation of virtual texturing introduced on AMD Radeon HD 7xxx GPUs. The course contrasts partially resident textures with existing virtual texturing techniques deployed in the game RAGE and discusses the strengths and weaknesses of both techniques.

Juraj Obert
Advanced Micro Devices, Inc.

J.M.P. van Waveren
id Software LLC

Graham Sellers
Advanced Micro Devices, Inc.

Introduction to Modern OpenGL
Monday, 6 August, 2-5:15 pm
Introductory

This introduction to programming with OpenGL – the mostly widely available programming library for creating computer graphics – showcases its most modern techniques and features.

Edward Angel
University of New Mexico

Dave Shreiner
ARM, Inc.

Beyond Programmable Shading
Tuesday, 7 August, 9 am-12:15 pm
Intermediate

This course provides information and instruction on bleeding-edge rendering techniques and hardware that combine parallel computation with traditional graphics pipelines.

Mike Houston
Advanced Micro Devices, Inc.

Aaron Lefohn
Intel Corporation

Johan Andersson
DICE

Cinematic Color: From Your Monitor to the Big Screen
Tuesday, 7 August, 9-10:30 am
Intermediate

An introduction to the color pipelines behind modern feature-film visual effects and animation.

Jeremy Selan
Sony Pictures Imageworks

Data-Driven Simulation Methods in Computer Graphics: Cloth, Tissue, and Faces
Tuesday, 7 August, 9 am-12:15 pm
Intermediate

This survey of the recent explosion of successful data-driven simulation methods presents a common theory of data-driven dynamic deformation methods that may inspire the development of novel solutions and makes data-driven approaches accessible.

Miguel Otaduy
Universidad Rey Juan Carlos Madrid

Bernd Bickel
Derek Bradley
Disney Research Zürich

Huamin Wang
The Ohio State University

Courses

#siggraph #courses

Practical Physically-Based Shading in Film and Game Production
Tuesday, 7 August, 9 am-12:15 pm
Intermediate

Using examples from film and games, this course presents advances in the theory and production of physically-based shading, demonstrating how it enhances realism and leads to faster and more intuitive art creation.

Stephen McAuley
Stephen Hill
Ubisoft Montréal

Naty Hoffman
Activision Studio Central

Yoshiharu Gotanda
tri-Ace

Brian Smits
Pixar Animation Studios

Brent Burley
Walt Disney Animation Studios

Adam Martinez
Sony Pictures Imageworks

Character Rigging and Creature Wrangling in Game, Feature Animation, and Visual Effects Production
Tuesday, August 7, 2-5:15 pm

This course focuses on rigging, deformations, dynamics, and animation production practices in feature-film animation, visual effects, and video game development. Topics include: analysis of performance requirements, motion-system setup, procedural rigging for secondary animation, and efficient extension of techniques over a wide range of primary and secondary characters.

Tim McLaughlin
Texas A&M University

James Tooley
Industrial Light & Magic

Ben Cloward
Bioware Austin

Delivering Creative Feedback: A Workshop on Critique
Tuesday, 7 August, 3:45-5:15 pm
Introductory

Delivering useful, honest, and effective feedback to creatives is one of the biggest daily challenges faced by producers, supervisors, teachers, etc. When critiques "feel" subjective, they can do more damage than good. This course presents a simple, effective framework for delivering actionable criticism to your team every day, in every environment.

Evan Hirsch
Engine Co. 4

Applying Color Theory to Digital Media and Visualization
Tuesday, 7 August, 3:45-5:15 pm
Introductory

This course highlights the visual impact of specific color combinations, provides practical suggestions for color mixing, highlights how to produce color-blind safe displays, and includes a hands-on session that teaches how to build and evaluate color schemes for digital media visualization.

Theresa-Marie Rhyne
Visualization Consultant

FEM Simulation of 3D Deformable Solids: A Practitioner's Guide to Theory, Discretization, and Model Reduction
Wednesday, 8 August, 9 am-12:15 pm
Intermediate

A practical guide to finite-element method (FEM) simulation of 3D deformable solids. The course reviews offline FEM simulation techniques, how they are applied to complex nonlinear materials, invertible treatment of elasticity, and model-reduction techniques for real-time simulation.

Eftychios Sifakis
University of Wisconsin-Madison

Jernej Barbic
University of Southern California

Advances in Real-Time Rendering in Games: Part I
Wednesday, 8 August, 9 am-12:15 pm
Intermediate

This course covers the best innovations and practical techniques in state-of-the-art rendering and the results of forward-thinking rendering research that will be found in the games of tomorrow.

Natalya Tatarchuk
Bungie, Inc.

Advances in Real-Time Rendering in Games: Part II
Wednesday, 8 August, 2-5:15 pm
Intermediate

The second part of Advances in Real-Time Rendering in Games.

Natalya Tatarchuk
Bungie, Inc.

GPU Shaders for OpenGL 4.x
Wednesday, 8 August, 2-5:15 pm
Intermediate

Shader programming has become an indispensable part of graphics application development. This course reviews vertex, fragment, geometry, tessellation shaders, shader-specific theory, and the GLSL 4.x shader language.

Mike Bailey
Oregon State University

Efficient Real-Time Shadows
Thursday, 9 August, 9 am-12:15 pm
Intermediate

This overview of several modern shadow-computation techniques provides practical advice, including AAA game showcases, for finding the best trade-off between computation budget and quality for your interactive applications.

Elmar Eisemann
Télécom ParisTech

Ulf Assarsson
Chalmers University

Michael Schwarz
Cornell University

Michal Valient
Guerrilla Games and Sony Computer Entertainment

Michael Wimmer
Technische Universität Wien

Courses

#siggraph #courses

Advanced (Quasi) Monte Carlo Methods for Image Synthesis

Thursday, 9 August, 9 am-12:15 pm
Advanced

This course covers practical aspects of advanced (Quasi) Monte Carlo methods for photorealistic rendering.

Alexander Keller
NVIDIA Research

Simon Premoze

Matthias Raab
NVIDIA ARC GmbH

Graphics Programming for the Web

Thursday, 9 August, 9 am-12:15 pm
Introductory

This course introduces and demonstrates modern web technologies (HTML5 <canvas>, CSS3, WebGL, SVG, WebCL) that enable developers to produce complex, general-purpose graphics applications for the web.

Pushkar Joshi
Mikaël Bourges-Sévenier
Motorola Mobility

Kenneth Russell
Zhenyao Mo
Google, Inc.

State of the Art in Photon-Density Estimation

Thursday, 9 August, 2-5:15 pm
Advanced

Recent developments in light-transport simulation algorithms using photon-density estimation.

Toshiya Hachisuka
Aarhus Universitet

Wojciech Jarosz
Disney Research Zürich

Guillaume Bouchard
Université de Lyon

Per Christensen
Pixar Animation Studios

Jeppe Revall Frisvad
Danmarks Tekniske Universitet

Wenzel Jakob
Cornell University

Henrik Wann Jensen
University of California, San Diego

Jared M. Johnson
University of Central Florida

Michael Kaschalk
Walt Disney Animation Studios

Claude Knaus
University of Bern

Andrew Selle
Walt Disney Animation Studios

Ben Spencer
Swansea University

Color Transfer

Thursday, 9 August, 3:45-5:15 pm
Introductory

This course discusses color transfer, an exciting and creative approach to adjusting color content in images and video, with applications in night-for-day imagery, correcting stereo pairs, color matching photographs for constructing panoramas, and example-based enhancement of photographs.

Tania Pouli
Erik Reinhard
University of Bristol

Emerging Technologies

Full Conference Access
Basic Conference Pass
Basic Conference Plus
Exhibitors
#siggraph #etech

Interact with the latest systems before they become hot topics in mainstream media and blogs. Emerging Technologies presents innovative technologies and applications in several fields, from displays and input devices to collaborative environments and robotics, and technologies that apply to film and game production.

Sponsored by

Walt Disney Animation Studios

3D Capturing Using Multi-Camera Rigs, Real-Time Depth Estimation, and Depth-Based Content Creation for Multi-View and Light-Field Auto-Stereoscopic Displays

Peter Tamas Kovacs
Holografika Kft.
Ferederik Zilly
Fraunhofer Heinrich Hertz Institute

A Colloidal Display: Membrane Screen That Combines Transparency, BRDF, and 3D Volume

Yoichi Ochiai
The University of Tokyo

Alexis Oyama
Carnegie Mellon University

Keisuke Toyoshima
University of Tsukuba

Augmented Reflection of Reality

Wing Ho Andy Li
Hongbo Fu
City University of Hong Kong

BOTANICUS INTERACTICUS: Interactive Plants Technology

Ivan Poupyrev
Disney Research, Pittsburgh

Philipp Schoessler
Universität der Künste Berlin

Chilly Chair: Facilitating an Emotional Feeling With Artificial Piloerection

Shogo Fukushima
Hiroyuki Kajimoto
The University of Electro-Communications

ClaytricSurface: An Interactive Surface With Dynamic Softness Control Capability

Yasushi Matoba
Toshiki Sato
Nobuhiro Takahashi
Hideki Koike
The University of Electro-Communications

Combiform: Beyond Co-Attentive Play, a Combinable Social-Gaming Platform

Edmond Yee
Tai An
Andrew Dang
Josh Joiner
Andy Uehara
University of Southern California

Drum On
Jaehyuck Bae
Byungjoo Lee
Sungmin Cho
Yunsil Heo
Hyunwoo Bang
Seoul National University

Gocen: A Handwritten Notation Interface for Musical Performance and Learning Music

Tetsuaki Baba
Yuya Kikukawa
Toshiki Yoshiike
Tatsuhiko Suzuki
Rika Shoji
Kumiko Kushiyama
Tokyo Metropolitan University

Hand-Rewriting: Automatic Rewriting Like Natural Handwriting

Tomoko Hashida
Takeshi Naemura
Kohei Nishimura
The University of Tokyo

HDRchitecture: Real-Time 3D HDR Imaging for Extreme Dynamic Range

Raymond Lo
Steve Mann
University of Toronto

Interactive Light-Field Painting

James Tompkin
Samuel Muff
Stanislav Jakuschevskij
Disney Research, Boston

Jim McCann
Adobe Systems Incorporated

Jan Kautz
University College London

Marc Alexa
Technische Universität Berlin

Wojciech Matusik
Massachusetts Institute of Technology

JUKE Cylinder: A Device to Metamorphose Hands to a Musical Instrument

Masamichi Ueta
The University of Tokyo

Osamu Hoshuyama
NEC Corporation

Takuji Narumi
Tomohiro Tanikawa
Michitaka Hirose
The University of Tokyo

Magic Pot: Interactive Metamorphosis of the Perceived Shape

Yuki Ban
Takuji Narumi
Tomohiro Tanikawa
Michitaka Hirose
The University of Tokyo

Mood Meter: Large-Scale and Long-Term Smile Monitoring System

Javier Hernandez
Mohammed Hoque
Rosalind Picard
MIT Media Lab

PossessedHand

Emi Tamaki
Jun Rekimoto
The University of Tokyo

Emerging Technologies

#siggraph #etech

REVEL: A Tactile Feedback Technology for Augmented Reality
Olivier Bau
Ivan Poupyrev
Mathieu Le Goc
Laureline Galliot
Matthew Glisson
Disney Research, Pittsburgh

Shader Printer
Daniel Saakes
Japan Science and Technology Agency

Masahiko Inami
Japan Science and Technology Agency and Keio University

Takeo Igarashi
Japan Science and Technology Agency and The University of Tokyo

Naoya Koizumi
Keio University

Ramesh Raskar
Massachusetts Institute of Technology

SplashDisplay: Volumetric Projecting Using Projectile Beads
Yasushi Matoba
Taro Tokui
Ryo Sato
Toshiki Sato
Hideki Koike
The University of Electro-Communications

Stuffed Toys Alive! Cuddly Robots From a Fantasy World
Youhei Yamashita
Tokyo Institute of Technology

Tatsuya Ishikawa
University of Electro-Communications

Hironori Mitake
Ikumi Susa
Fumihiro Kato
Yutaka Takase
Wataru Seshimo
Yukinobu Takehana
Satoru Onohara
Takahiro Harano
Shoichi Hasegawa
Makoto Sato
Tokyo Institute of Technology

Tavola: Holographic User Experience
Yue Fei
Andrea Melle
David Kryze
Jean-Claude Junqua
Panasonic Silicon Valley Laboratory

TECHTILE Toolkit
Kouta Minamizawa
Yasuaki Kakehi
Masashi Nakatani
Keio University

Soichiro Mihara
Yamaguchi Center for Arts and Media

Susumu Tachi
Keio University

TELESAR V: TELExistence Surrogate Anthropomorphic Robot
Charith Lasantha Fernando
Masahiro Furukawa
Tadatoshi Kurogi
Kyo Hirota
Keio University

Sho Kamuro
The University of Tokyo

Katsunari Sato
Kouta Minamizawa
Susumu Tachi
Keio University

Tensor Displays: Compressive Light-Field Synthesis Using Multilayer Displays With Directional Backlighting
Matthew Hirsch
Douglas Lanman
Gordon Wetzstein
Ramesh Raskar
MIT Media Lab

Turn: Virtual Pottery
Sungmin Cho
Yunsil Heo
Hyunwoo Bang
Seoul National University

Ungrounded Haptic Rendering Device for Torque Simulation in Virtual Tennis
Wee Teck Fong
Ching Ling Chin
Farzam Farbiz
Zhiyong Huang
Institute for Infocomm Research

Panels

Full Conference Access
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A forum for the community to share experiences, opinions, insights, speculation, disagreement, controversy, and audience interaction with the leading experts in computer graphics and interactive techniques.

Full Conference Access registration allows attendees access to all SIGGRAPH 2012 Panels. Seating is on a first-come, first-served basis. Please be sure to arrive early for the Panel you wish to attend.

The Battle for Motion-Controlled Gaming and Beyond

Sunday, 5 August 3:45-5:15 pm

Although motion tracking has existed in research labs and some niche markets for decades, only recently has it gained mainstream acceptance in the living room in the form of the Nintendo Wii, the Playstation Move, Microsoft's Kinect, and the Sixense Razer Hydra. These devices and their corresponding software have pushed human-computer interaction to new levels in gaming. Is this just another passing fad that will move back to the laboratory or is it here to stay? Will motion control move beyond gaming to control a wide range of digital media? Or is it only appropriate for a small subset of technologies? This panel of motion-tracked game pioneers will debate the tradeoffs of different tracking technologies, discuss important aspects of the end-user experience, predict the future of motion-controlled gaming, and discuss how this technology will affect other industries.

Topics include:
- What technologies are the most appropriate for what types of games?
- How the specific technologies affect user experience
- The role, if any, for hardcore gaming
- Buttons versus no buttons
- How media and marketing have affected the perception of motion tracking
- The future of gaming
- The role of motion control in industries beyond gaming

Panelists

Jason Jerald
Digital ArtForms, Inc.

Richard Marks
Sony Computer Entertainment

Joseph LaViola
University of Central Florida

Evan Hirsch
Engine Co. 4

Brian Murphy
Keith Steury
Microsoft Studios

Amir Rubin
Sixense Entertainment Inc.

Virtual Production Branches Out

Monday, 6 August 9-10:30 am

Virtual production is changing how directors, actors, and stories interact. The ability to capture the subtleties of actors' performance digitally and move digital-environment data among pre-production, production, and post is opening up new worlds, new kinds of characters, and new ways of telling stories.

After gaining wide public visibility on "Avatar", virtual production is sweeping through the feature film world – and beyond. Because blending live and CGI elements is not only possible, but now practical, virtual production has been embraced to improve the standard of previsualization, to augment motion capture in games creation to enhance overall quality, and to enable film directors to see more of what their world will look like while they're in production. In short, virtual production has branched out.

A panel of leading virtual-production practitioners discusses and debates:
- Advances and considerations in motion capture
- Relative benefits of separate vs. in-scene facial capture
- SimulCam – its evolution and where it is heading
- The client/filmmaker experience

Moderator

Ray Feeney
RFX Inc. and former Co-Chair, Academy of Motion Picture Arts & Sciences Science & Technology Council

Panelists

Matt Aitken
Weta Digital

Dave Cravens
High Moon Studios

Gary Roberts
Digital Domain

Matt Madden
Giant Studios

SIGGRAPH Mobile

Full Conference Access
#siggraph #mobile

Inspired by SIGGRAPH Asia 2011's popular Symposium on Apps, this new program presents the latest advances in mobile technologies.

In just a few years, smartphones, tablets, and handheld game devices have evolved beyond text, voice, music, news, and simple contests. Now, they combine serious graphics hardware with very cool software, good cameras, full-color screens, and high-resolution sensors that deliver precision space-time data everywhere in the world. What's next? In talks, workshops, and demonstrations, SIGGRAPH Mobile explores what's possible, and when, for computers that can remain in their bags at security checkpoints.

Workshop

Sunday, 5 August, 2-3:30 pm

A Very Basic Introduction to GLKit for IOS 5: Getting Up and Running

Ann McNamara
Texas A&M University

Full Conference Access
Basic Conference Access
Basic Conference Plus

#siggraph #mobile

Workshop

Monday, 6 August, 2-3:30 pm

Presenting Mojito:
A Yahoo! Library Implementing a JavaScript-Based on-Line/ Off-line, Multi-Device, Hosted Application Platform

William Edney
Yahoo Inc.

Full Conference Access
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Basic Conference Plus

#siggraph #mobile

Panel – Mobile GPUs: Markets and Technology

Wednesday, 8 August, 9-10:30 am

Session Chair

Peter Glaskowsky
Microsoft Corporation

9-9:10 am

Introduction to SIGGRAPH Mobile
Lars Erik Holmquist
Yahoo! Research

9:10-9:20 am

Demo Madness
Short presentations of all demonstrations.

9:20-10:30 am

Mobile GPU Panel

Organizer

Peter Glaskowsky
Microsoft

Panelists

Dan Wexler
The 11ers

Dave Shreiner
ARM, Inc.

Eric Demers
Qualcomm Incorporated

Understanding Mobile Graphics – GPUs and Platforms

Wednesday, 8 August, 10:45 am-12:15 pm

Session Chair

Lars Erik Holmquist
Yahoo! Research

10:45-11:30 am

Saving the Planet, One Handset at a Time: Designing Low-Power, Low-Bandwidth Mobile GPUs

Thomas Olson
Edvard Sorgard
Dave Shreiner
ARM, Inc.

11:30 am-12:15 pm

Unity: iOS and Android - Cross-Platform Challenges and Solutions

Renaldas Zioma
Aras Pranckevicius
Unity Technologies

SIGGRAPH Mobile

#siggraph #mobile

Mobile Graphics – Hardware and Software Techniques

Wednesday, 8 August, 2-3:30 pm

2-2:45 pm

Advancing Dynamic Lighting on Mobile

Sam Martin
Geomerics Ltd.

2:45-3:30 pm

On-Target Performance Analysis of GPU Applications

Karthik Hariharakrishnan
ARM, Inc.

Mobile Applications – In Your Hand and On the Road

Wednesday, 8 August, 3:45-5:15 pm

Session Chair

Ronald van der Lingen
Layar

3:45-4:30 pm

Auto(mobile)

Vidya Setlur
Nokia Research Center

Alark Joshi
Boise State University

4:30-5:15 pm

Mobile Augmented Reality in Advertising: the TineMelk AR App - A Case Study

Kim Baumann Larsen
Placebo Effects

Tuck Siver
David Jones
Labrat

Magnus Wessel Bøe-Waal
Michael Birkeland
Placebo Effects

Sigbjørn Galåen
Christer Sveen
Eigil Jarl Halse
Blink Studios AS

Demonstrations

(Located Outside SIGGRAPH Mobile Presentation Room)

LED-to-LED Visible Light Communication for Mobile Applications

Giorgio Corbellini
Stefan Schmid
Disney Research, Zürich

Thomas Gross
ETH Zürich

Armen Mkrtchyan
Disney Consumer Products

Stefan Mangold
Disney Research, Zürich

Annotating With "Sticky" Light for Mobile Remote Guidance

Matt Adcock
Chris Gunn
CSIRO

Mobile Augmented Reality in Advertising: the TineMelk AR App – A Case Study

Kim Baumann Larsen
Placebo Effects

Tuck Siver
David Jones
Labrat

Magnus Wessel Bøe-Waal
Michael Birkeland
Placebo Effects

Sigbjørn Galåen
Christer Sveen
Eigil Jarl Halse
Blink Studios AS

3D Tai Chi Interactive Animation Application on Mobile Platform

Hui Zhu
Tsinghua University

Mobile GPU Demos

Phil Smith
ARM, Inc.

Studio

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A hands-on creative space for art and design of all kinds. A collaborative working environment where the latest technologies and brightest minds come together to learn, experiment, and create.

Full Conference Access, Basic Conference Access, and Basic Conference Plus registration allows attendees access to all SIGGRAPH 2012 Studio Talks. Seating is on a first-come, first-served basis. Please be sure to arrive early for the Studio Talk you wish to attend.

Studio Talks

Sunday, 5 August

SIGGRAPH Mobile Workshop

Sunday, 5 August, 2-3:30 pm

Session Chair
Kim Voigt
Temple University

A Very Basic introduction to GLKit for IOS 5: Getting Up and Running
Ann McNamara
Texas A&M University

Monday, 6 August

Jamming

Monday, 6 August, 9-10:30 am

Session Chair
Kim Voigt
Temple University

Beyond Minus Ones: VirtualBand Demo
François Pachet
Sony Computer Science Laboratory

Design Computing I

Monday, 6 August, 2-3:30 pm

Session Chair
Gene Cooper
Four Chambers Studio

Introducing Processing 2.0
Andres Colubri
Harvard University and
Fathom Information Design

Ben Fry
Fathom Information Design

Exploring Algorithmic Geometry Using "Beetle Blocks"
Duks Koschitz
Massachusetts Institute of Technology

Eric Rosenbaum
MIT Media Lab

Grooving

Monday, 6 August, 3:45-5:15 pm

Session Chairs
Gerry Derkson
Winthrop University

RhythmSynthesis
Ryan Raffa
Parsons The New School for Design

Automatic Lead-Sheet Visualization for Musical Study
Douglas Mason
Harvard University

AudioCloning: Extracting Material Fingerprints from Example Audio Recording
Hengchin Yeh
Zhimin Ren
Ming Lin
University of North Carolina at Chapel Hill

Beyond Minus Ones: VirtualBand
François Pachet
Pierre Roy
Julian Moreira
Sony Computer Science Laboratory

Tuesday, 7 August

Wild Rides

Tuesday, 7 August, 9-10:30 am

Session Chair
Kim Voigt
Temple University

Magic Beanstalk Ride in "Puss In Boots"
Amaury Aubel
Nikita Pavlov
Andrew Pearce
DreamWorks Animation SKG

Conquering the Seas of "Ice Age: Continental Drift"
Mark Adams
Joan Cabot

Bryan Useo
Matthew Roach
David Quirus
Blue Sky Studios

River Running Through It
Michael O'Brien
Dave Hale
Allen Hemberger
Matthew Wong
Pixar Animation Studios

Art Panel 1: In Search of the Miraculous

Tuesday, 7 August, 10:45 am-12:15 pm

Art Gallery Artists and Designers discuss their work in context of the SIGGRAPH 2012 Art Gallery and contemporary Art and design practices.

Big Game

Tuesday, 7 August, 2-3:30 pm

Session Chair
Chris Williams
Knowledge Adventure

Film/Game Convergence: What's Taking So Long?
Christopher Evans
Xiaomao Wu
Crytek

Creating Vast Game Worlds - Experiences From Avalanche Studios
Emil Persson
Avalanche Studios

Studio

#siggraph #studio

Digifab

Tuesday, 7 August, 3:45 – 5:15 pm

Session Chair
Charles Overy
LGM

Get Real! Automated Methods for Rapid Prototyping and Industrial Design
Martin Wicke
Geoffrey Irving
Otherlab

Now That We Have Desktop 3D Printers, The Revolution Can Begin
Matthew Griffin
MakerBot Industries, LLC

DIYLILCNC v2.0
Chris Reilly
University of California, Los Angeles

Taylor Hokanson
Columbia College Chicago

Wednesday, 8 August

Doing Design

Wednesday, 8 August, 9-10:30 am

Session Chair
Kim Voigt
Temple University

Loosely Fitted Design Synthesizer {LFDS]
Robert Wendrich
Universiteit Twente

Virtual Cane Creation for Glassblowers
Andrew Winslow
Tufts University

Kimberly Baldauf
Benjamin Lee
Massachusetts Institute of Technology

James McCann
Adobe Systems, Inc.

Erik Demaine
Martin Demaine
Peter Houk
Massachusetts Institute of Technology

Vignette: A Style-Preserving Sketching Tool for Pen-and-Ink Illustration
Rubaiat Kazi
National University of Singapore

Takeo Igarashi
JST ERATO

Shengdong Zhao
National University of Singapore

Richard Davis
Singapore Management University

Kenshi Takayama
University of Tokyo

SketchGraph: Gestural Data Input for Mobile Tablet Devices
Jacquelyn Martino
Paul Matchen
Harold Ossher
Rachel Bellamy
Cal Swart
IBM Corporation

Art Panel 2: The Message is in the Medium

Wednesday, 8 August, 10:45 am – 12:15 pm

Art Gallery Artists and Designers discuss the use of technology as creative medium, material and inspiration

Space is the Place

Wednesday, 8 August, 2-3:30 pm

Session Chair
Dan Collins
Arizona State University

Public Displays of Computing: Space, Place, and Computing
Eric Sauda
Christpher Beorkrem
Taylor Milner
Trevor Hess
University of North Carolina at Charlotte

Multi-Disciplinary Mashups – People, Technology, and Design
Shane Burger
Xavier DeKestlier
Smartgeometry Ltd

Robert Woodbury
Simon Fraser University

Mesh Mash

Wednesday, 8 August, 3:45-5:15 pm

Session Chair
Dan Collins
Arizona State University

Interactive Modeling With Mesh Surfaces
Ryan Schmidt
Autodesk Research

A Guided Synthesizer for Blendshape Characters
Wan-Chun Ma
J.P. Lewis
Weta Digital

Thursday, 9 August

Hackerspace Continuum

Thursday, 9 August, 9-10:30 am

Session Chair
Byron Lahey
Arizona State University

The Signal Strength Project
Amelia Marzec

Ikimo: Open Entry-Level Robotics Platform
Charith Fernando
Jan Rod
David Eisner
Mauricio Cordero
InMojo Inc.

Gigapixel Science Lab
Gene Cooper
Four Chambers Studio

Studio

#siggraph #studio

Studio Workshops

A series of in-depth workshops taught by the best in the industry. (maximum capacity: 25 persons per workshop).

Sunday, 5 August

Body Monitoring: Exploring the Creative Uses of Invasive Technologies

2-3:30 pm

Julie Legault
Royal College of Art

Monday 6 August

Material is Expensive But Complexity is Free

9-10:30 am

Charles Overy
LGM

Presenting Mojito: A Yahoo! Library Implementing a JavaScript-Based On-Line/Off-Line, Multi-Device, Hosted Application Platform [SIGGRAPH Mobile Workshop]

2-3:30 pm

William Edney
Yahoo Inc.

Tuesday, 7 August

ZBrush: Artists Without Borders

9-10:30 am

Paul Gaboury
Thomas Rousell
Pixologic

Python Scripting in Maya

10:45 am-12:15 pm

Christopher Evans
Crytek

MaxScript for Artists

2-3:30 pm

Christopher Evans
Sascha Herfort
Crytek

Signal Strength: Activist Networking Techniques

3:45-5:15 pm

Amelia Marzec
Eyebeam Art and Technology Center/
The Huffington Post

Wednesday, 8 August

Making Your Own Avatar - Realistic Faces and Expressions Workshop

9-10:30 am

Ketrina Yim
Kan Anant
PhaseSpace

VFX for Games: Pre-Baked Destruction

10:45 am-12:15 pm

Christopher Evans
Sascha Herfort
Crytek

Building a Game Level

2-3:30 pm

Christopher Evans
Crytek

VFX for Games: Particle Effects

3:45-5:15 pm

Sascha Herfort
Crytek

Thursday, 9 August

Intro to Arduino

9-10:30 am

Alejandro Borsani
Rensselaer Polytechnic Institute

Smart Lighting With Arduino

10:45 am-12:15 pm

Alejandro Borsani
Rensselaer Polytechnic Institute

Studio Projects

Preliminary list of SIGGRAPH 2012 Studio Projects:

The Merchant of Venus Prime
A collaborative project to demonstrate the Studio's artistic, technical and creative talents and how they apply to computer graphic production.

Milton Garcia
Tracy McSheery
PhaseSpace Inc.

Digital Ceramics
Participants develop digital designs, then use direct CNC milling to create plaster molds for hand-moulding or slip-casting ceramic forms.

David Celento
Norwich University

iPi Mocap – Dual-Kinect Motion Capture Technology
A markerless motion capture software that works with multiple Kinect sensors (or similar depth-sensing devices like Asus Xtion).

Michael Nikonov
iPi Soft LLC

Creation Station
This project allows attendees to create wearable fabric art objects with glowing LED features.

Courtney Starrett
Winthrop University

Byron Lahey
Patricia Clark
Arizona State University

Gigapixel Science Lab
A space for creating, exploring, and sharing gigapixel images of scientific subjects and themes.

Gene Cooper
Four Chambers Studio

DIYLILCNC v2.0
After three years of R&D, community building, and countless upgrade requests, DIYLILCNC introduces version 2.0 of their do-it-yourself tabletop milling design.

Chris Reilly
University of California, Los Angeles

Taylor Hokanson
Columbia College Chicago

Talks

Full Conference Access
#siggraph #talks

SIGGRAPH 2012 Talks provide a broad spectrum of presentations on recent achievements in all areas of computer graphics and interactive techniques, including art, design, animation, visual effects, interactivity, research, and engineering.

Talks often highlight the latest developments before publication, present ideas that are still in progress, or showcase how computer graphics and interactive techniques are actually implemented and used, in graphics production or other fields. Talks take you behind the scenes and into the minds of SIGGRAPH 2012 creators.

Full Conference Access registration allows attendees access to all SIGGRAPH 2012 Talks. Seating is on a first-come, first-served basis. Please be sure to arrive early for the Talk you wish to attend.

Sunday, 5 August

SIGGRAPH Mobile Workshop

Sunday, 5 August 2-3:30 pm

Session Chair

Kim Voigt
Temple University

A Very Basic Introduction to GLKit for IOS 5: Getting Up and Running
Ann McNamara
Texas A&M University

Game Worlds

Sunday, 5 August 2-3:30 pm

Session Chair

Corrinne Yu
Microsoft

Creating Vast Game Worlds - Experiences From Avalanche Studios
Emil Persson
Avalanche Studios

Asking the Impossible on SSX: Creating 300 Tracks on a 10-Track Budget
Caleb Howard
Electronic Arts and Cognitive Imaging Corporation

Lighting the Open World of New York Zero for Prototype 2
Keith O'Cono
Josh Blommestein
Radical Entertainment

Character Customization of Soulcalibur 5 In-Depth
Shiro Tani
NAMCO BANDAI Studios Inc.

Monday, 6 August

Jamming [Studio Talks]

Monday, 6 August 9-10:30 am

Session Chair

Kim Voigt
Temple University

Beyond Minus Ones: VirtualBand Demo
François Pachet
Sony Computer Science Laboratory

Pointed Illumination

Monday, 6 August 9-10:30 am

Session Chair

Carlos Gonzalez-Ochoa
Naughty Dog

Progressive Lightcuts for GPU
Tomas Davidovic
Iliyan Georgiev
Universität des Saarlandes and Intel VCI Saarbrücken

Philipp Slusallek
Deutsches Forschungszentrum für Künstliche Intelligenz, Universität des Saarlandes, and Intel VCI Saarbrücken

SGRT: A Scalable Mobile GPU Architecture Based on Ray Tracing
Won Jong Lee
Shi-Hwa Lee
Samsung Electronics

Jae-Ho Nah
Jin-Woo Kim
Yonsei University

Youngsam Shin
Jaedon Lee
Seok-Yoon Jung
Samsung Electronics

Point-Based Global Illumination Directional Importance Mapping
Eric Tabellion
PDI/DreamWorks

Ill-Loom-inating Handmade Fabric in "Brave"
Philip Child
Pixar Animation Studios

Design Computing I [Studio Talks]

Monday, 6 August 2-3:30 pm

Session Chair

Gene Cooper
Four Chambers Studio

Introducing Processing 2.0
Andres Colubri
Harvard University and Fathom Information Design

Ben Fry
Fathom Information Design

Exploring Algorithmic Geometry Using "Beetle Blocks"
Duks Koschitz
Massachusetts Institute of Technology

Eric Rosenbaum
MIT Media Lab

Talks

#siggraph #talks

Head in the Clouds

Monday, 6 August 2-3:30 pm

Session Chair

Anastasio Garcia Rodriguez
Sony Pictures Imageworks

Cloud Modeling and Rendering for "Puss In Boots"
Brett Miller
Ken Museth
Devon Penney
Nafees Bin Zafar
DreamWorks Animation

A World of Voxels: The Volumetric Effects of "Ice Age: Continental Drift"
Andrew Schneider
Trevor Thomson
Matthew Wilson
Matthew Roach
Blue Sky Studios

Vortex of Awesomeness
Can Yuksel
Domin Lee
Ron Henderson
DreamWorks Animation

Efficient and Seamless Volumetric Fracturing
Miahi Alden
Gustav Melich
Ken Museth
DreamWorks Animation

Grooving [Studio Talks]

Monday, 6 August 3:45-5:15 pm

Session Chair

Gerry Derkson
Winthrop University

RhythmSynthesis
Ryan Raffa
Parsons The New School for Design

Automatic Lead-Sheet Visualization for Musical Study
Douglas Mason
Harvard University

AudioCloning: Extracting Material Fingerprints from Example Audio Recording
Hengchin Yeh
Zhimin Ren
Ming Lin
University of North Carolina at Chapel Hill

Beyond Minus Ones: VirtualBand
François Pachet
Pierre Roy
Julian Moreira
Sony Computer Science Laboratory

Surf & Turf

Monday, 6 August 3:45-5:15 pm

Session Chair

Kenny Mitchell
Disney Research

From a Calm Puddle to a Stormy Ocean: Rendering Water in Uncharted
Carlos Gonzalez-Ochoa
Eben Cook
Doug Holder
Naughty Dog, Inc.

What if the Earth Was Flat: The Globe UI System in SSX
Qing Shen
Electronic Arts

Adaptive Level-of-Detail System for End of Nations
Gregory Hjelstrom
Petroglyph Games
Thanh Nguyen
Petroglyph Games

Screen Space Decals in Warhammer 40,000: Space Marine
Pope Kim
Relic Entertainment

Material: The Gathering

Monday, 6 August 3:45-5:35 pm

Session Chair

Pascal Gautron
Technicolor Research & Innovation

Estimating Specular Normals From Spherical Stokes Reflectance Fields
Giuseppe Claudio Guarnera
USC Institute for Creative Technologies

Pieter Peers
The College of William & Mary

Paul Debevec
Abhijeet Ghosh
USC Institute for Creative Technologies

Estimating Diffusion Parameters From Polarized Spherical Gradient Illumination
Yufeng Zhu
University of Southern California

Pieter Peers
The College of William & Mary

Paul Debevec
Abhijeet Ghosh
USC Institute for Creative Technologies

Improved Linear-Light-Source Material Reflectance Scanning
Jan Meseth
Shawn Hempel
Andrea Weidlich
Lynn Fyffe
Graham Fyffe
Craig Miller
Paul Carroll
RTT AG

Paul Debevec
USC Institute for Creative Technologies

Measurement-Based Synthesis of Facial Microgeometry
Paul Graham
USC Institute for Creative Technologies

Borom Tunwattanapong
University of Southern California

Jay Busch
Xueming Yu
Andrew Jones
Paul Debevec
Abhijeet Ghosh
USC Institute for Creative Technologies

A Single-Shot Light Probe
Paul Graham
Jay Busch
Mark Bolas
Paul Debevec
USC Institute for Creative Technologies

Talks

#siggraph #talks

Tuesday, 7 August

Wild Rides [Studio Talks]

Tuesday, 7 August 9-10:30 am

Session Chair

Kim Voigt
Temple University

Magic Beanstalk Ride in "Puss In Boots"
Amaury Aubel
Nikita Pavlov
Andrew Pearce
DreamWorks Animation SKG

Conquering the Seas of "Ice Age: Continental Drift"
Mark Adams
Joan Cabot
Bryan Useo
Matthew Roach
David Quirus
Blue Sky Studios

River Running Through It
Michael O'Brien
Dave Hale
Allen Hemberger
Matthew Wong
Pixar Animation Studios

Big Game [Studio Talks]

Tuesday, 7 August 2-3:30 pm

Session Chair

Chris Williams
Knowledge Adventure

Film/Game Convergence: What's Taking So Long?
Christopher Evans
Xiaomao Wu
Crytek

Creating Vast Game Worlds - Experiences From Avalanche Studios
Emil Persson
Avalanche Studios

Model Stories

Tuesday, 7 August 2-3:30 pm

Session Chair

Mashhuda Glencross
Loughborough University

Introducing Processing 2.0
Andres Colubri
Harvard University and
Fathom Information Design

Ben Fry
Fathom Information Design

Growing Documentary: Creating a Computer-Supported Collaborative Storytelling Environment
Janak Bhimani
Annisa Mahdia
Ali Almahr
Daisuke Shirai
Naohisa Ohta
Keio University

Adapting Curriculum to Explore New 3D Modeling Technologies and Workflows
Shaun Foster
David Halbstein
Joel Ogden
Scott Riddle
Rochester Institute of Technology

3D Diff: An Interactive Approach to Mesh Differencing and Conflict Resolution
Jozef Dobos
Anthony Steed
University College London

Three is a Crowd

Tuesday, 7 August 2-3:30 pm

Session Chair

Samuel Lord Black
Autodesk, Inc.

CageR: From 3D Performance Capture to Cage-Based Representation
Jean-Marc Thiery
Julien Tierny
Tamy Boubekeur
Télécom ParisTech

Headstrong, Hairy, and Heavily Clothed: Animating Crowds of Scotsmen on "Brave"
Paul Kanyuk
Leon J.W. Park
Emily Weihrich
Pixar Animation Studios

Hero-Quality Crowds in "Madagascar 3: Europe's Most Wanted"
Nathaniel Dirksen
Justin Fischer
Jung-Hyun Kim
Kevin Vassey
Rob Vogt
DreamWorks Animation

Digifab [Studio Talks]

Tuesday, 7 August 3:45-5:15 pm

Session Chair

Charles Overy

Get Real! Automated Methods for Rapid Prototyping and Industrial Design
Martin Wicke
Geoffrey Irving
Otherlab

Now That We Have Desktop 3D Printers, The Revolution Can Begin
Matthew Griffin
MakerBot Industries, LLC

DIYLILCNC v2.0
Chris Reilly
University of California, Los Angeles

Taylor Hokanson
Columbia College Chicago

Talks

#siggraph #talks

Wednesday, 8 August

Doing Design [Studio Talks]

Wednesday, 8 August 9-10:30 am

Session Chair

Kim Voigt
Temple University

Loosely Fitted Design Synthesizer {LFDS]
Robert Wendrich
Universiteit Twente

Virtual Cane Creation for Glassblowers
Andrew Winslow
Tufts University

Kimberly Baldauf
Benjamin Lee
Massachusetts Institute of Technology

James McCann
Adobe Systems, Inc.

Erik Demaine
Martin Demaine
Peter Houk
Massachusetts Institute of Technology

Vignette: A Style-Preserving Sketching Tool for Pen-and-Ink Illustration
Rubaiat Kazi
National University of Singapore

Takeo Igarashi
JST ERATO

Shengdong Zhao
National University of Singapore

Richard Davis
Singapore Management University

Kenshi Takayama
University of Tokyo

SketchGraph: Gestural Data Input for Mobile Tablet Devices
Jacquelyn Martino
Paul Matchen
Harold Ossher
Rachel Bellamy
Cal Swart
IBM Corporation

Priming the Pipe

Wednesday, 8 August 9-10:30 am

Session Chair

Ted Kim
University of California, Santa Barbara

LibEE: A Multithreaded Dependency Graph for Character Animation
Martin Watt
DreamWorks Animation

Mark Hampton
Intel Corporation

Crom - Massively Parallel, CPU/GPU Hybrid Computation Platform for Visual Effects
John Vanover
Nathan Cournia
Bill Spitzak
Hans Rijpkema
Josh Tomlinson
Bradley Smith
Nathan Litke
Rhythm & Hues Studios, Inc.

Amorphous: An OpenGL Sparse Volume Renderer
Mark Matthews
DreamWorks Animation

Efficient Large-Scale Hybrid Fluid Simulation
Abhinav Golas
University of North Carolina at Chapel Hill

Rahul Narain
University of California, Berkeley

Jason Sewall
Intel Corporation

Pavel Krajcevski
Ming Lin
University of North Carolina at Chapel Hill

Capture the World

Wednesday, 8 August 10:45 am-12:15 pm

Session Chair

Mike Bailey
Oregon State University

KinÊtre: Animating the World With the Human Body
Jiawen Chen
Shahram Izadi

Andrew Fitzgibbon
Microsoft Research Cambridge

Computational Retinal Imaging via Binocular Coupling and Indirect Illumination
Everett Lawson
Jason Boggess
MIT Media Lab

Siddharth Khullar
Rochester Institute of Technology

Alex Olwal
Gordon Wetzstein
Ramesh Raskar
MIT Media Lab

Relativistic Ultrafast Rendering Using Time-Resolved Imaging
Andreas Velten
University of Wisconsin

Di Wu
Tsinghua University

Adrian Jarabo
Belen Masia
Universidad de Zaragoza

Christopher Barsi
Everett Lawson
Chinmaya Joshi
MIT Media Lab

Diego Gutierrez
Universidad de Zaragoza

Moungi Bawendi
Massachusetts Institute of Technology

Ramesh Raskar
MIT Media Lab

Compressive Light-Field Photography
Kshitij Marwah
Gordon Wetzstein
MIT Media Lab

Ashok Veeraraghavan
Rice University

Ramesh Raskar
MIT Media Lab

Talks

#siggraph #talks

Understanding Mobile Graphics – GPUs and Platforms [SIGGRAPH Mobile Talks]

Wednesday, 8 August 10:45 am-12:15 pm

Session Chair

Lars Erik Holmquist
Yahoo! Research

Saving the Planet, One Handset at a Time: Designing Low-Power, Low-Bandwidth Mobile GPUs
Thomas Olson
Edvard Sorgard
Dave Shreiner
ARM, Inc.

Unity: iOS and Android - Cross-Platform Challenges and Solutions
Renaldas Zioma
Aras Pranckevicius
Unity Technologies

Mobile Graphics – Hardware and Software Techniques [SIGGRAPH Mobile Talks]

Wednesday, 8 August 2-3:30 pm

Session Chair

Lars Erik Holmquist
Yahoo! Research

Advancing Dynamic Lighting on Mobile
Sam Martin
Geomerics Ltd.

Novel approaches to GPU performance analysis
Karthik Hariharakrishnan
ARM, Inc.

Space is the Place

Wednesday, 8 August 2-3:30 pm

Session Chair

Dan Collins
Arizona State University

Public Displays of Computing: Space, Place, and Computing
Eric Sauda
Christpher Beorkrem
Taylor Milner
Trevor Hess
University of North Carolina at Charlotte

Multi-Disciplinary Mashups – People, Technology, and Design
Shane Burger
Xavier DeKestlier
Smartgeometry Ltd

Robert Woodbury
Simon Fraser University

Building Character

Wednesday, 8 August 2-3:30 pm

Session Chair

Juan Buhler
Pixar Animation Studios

Computer-Assisted Animation of Line and Paint in Disney's "Paperman"
Brian Whited
Eric Daniels
Michael Kaschalk
Patrick Osborne
Kyle Odermatt
Walt Disney Animation Studios

Simulation Preview in "Brave"
Alexander Nehls
Paul Mendoza
Tom Sanocki
Pixar Animation Studios

Stable, Art-Directable Skin and Flesh Using Biphasic Materials
Ryan Kautzman
Jiayi Chong
Patrick Coleman
Pixar Animation Studios

Character Design: Visual Complexity in "Brave"
Jacob Speirs
Lou Hamou-Lhadj
Pixar Animation Studios

Effects Omelet

Wednesday, 8 August 2-3:30 pm

Session Chair

Eric Tabellion
PDI/DreamWorks

"Wrath of the Titans" - Complex Models With Voxel Greeble
Daniel Seddon
James Kirk
Tomas Zaveckas
Method Studios

"Wrath of the Titans" - Creating CG Lava With Advected Sculpts
Daniel Seddon
Daniel Letarte
James Kirk
Method Studios

Dark Fairy Creature Effects on "Snow White and the Huntsman"
Alexander Seaman
Pablo Gimenez
Peter Kyme
Double Negative Visual Effects

Multiresolution Radiosity Caching for Global Illumination in Movies
Per Christensen
George Harker
Jonathan Shade
Brenden Schubert
Dana Batali
Pixar Animation Studios

Talks

#siggraph #talks

Play Time

Wednesday, 8 August 2-3:30 pm

Session Chair

Ken Museth
DreamWorks Animation

Making Tracks: Footprints in the "Ice Age" Movies
Hugo Ayala
Michael Reed
Ilan Gabai
Blue Sky Studios, Inc.

Building the Snow Footprint Pipeline on "Brave"
Keith Klohn
Michael O'Brien
Tim Speltz
Tom Wichitsripornkul
Pixar Animation Studios

A Guided Synthesizer for Blendshape Characters
Wan-Chun Ma
J.P. Lewis
Weta Digital

dRig: An Artist-Friendly, Object-Oriented Approach to Rig Building
Gregory Smith
Evan Goldberg
Mark McLaughlin
Chung-An Lin
Frank Hanner
Walt Disney Animation Studios

Mesh Mash [Studio Talks]

Wednesday, 8 August 3:45-5:15 pm

Session Chair

Dan Collins
Arizona State University

Interactive Modeling With Mesh Surfaces
Ryan Schmidt
Autodesk Research

A Guided Synthesizer for Blendshape Characters
Wan-Chun Ma
J.P. Lewis
Weta Digital

Mobile Applications – In Your Hand and On the Road [SIGGRAPH Mobile Talks]

Wednesday, 8 August 3:45-5:15 pm

Session Chair

Ronald van der Lingen
Layar

Auto(mobile)
Vidya Setlur
Nokia Research Center

Alark Joshi
Boise State University

Mobile Augmented Reality in Advertising: the TineMelk AR App - A Case Study
Kim Baumann Larsen
Placebo Effects

Tuck Siver
David Jones
Labrat

Magnus Wessel Bøe-Waal
Michael Birkeland
Placebo Effects

Sigbjørn Galåen
Christer Sveen
Eigil Jarl Halse
Blink Studios AS

Thursday, 9 August

Hackerspace Continuum

Thursday, 9 August 9-10:30 am

Session Chair

Byron Lahey
Arizona State University

The Signal Strength Project
Amelia Marzec

Ikimo: Open Entry-Level Robotics Platform
Charith Fernando
Jan Rod
David Eisner
Mauricio Cordero
InMojo Inc.

Gigapixel Science Lab
Gene Cooper
Four Chambers Studio

Silence! Eliminate the Noise

Thursday, 9 August 9-10:30 am

Session Chair

Pete Segal
Luxololgy, LLC

Importance Sampling for Hair Scattering
Jiawei Ou
Dartmouth College/
DreamWorks Animation

Feng Xie
DreamWorks Animation

Parashar Krishnamachari
DreamWorks Animation

Fabio Pellacini
Dartmouth College/
Sapienza University of Rome

Adaptive Noise Reduction for Progressive Photon Mapping
Zhe Fu
Henrik Jensen
University of California, San Diego

Progressive Volume Photon Tracing
Charly Collin
University of Central Florida

Mickaël Ribardière
Rémi Cozot
Kadi Bouatouch
IRISA Rennes

Volume-Aware Extinction Mapping
Pascal Gautron
Cyril Delalandre
Jean-Eudes Marvie
Pascal Lecocq
Technicolor Research & Innovation

Talks

#siggraph #talks

John Carter Scales Up

Thursday, 9 August 10:45 am-12:15 pm

Session Chair

Nafees Bin Zafar
DreamWorks Animation

Stereoscopic Conversion of "John Carter"
Michele Sciolette
Scott Willman
Gregory Keec
John Grotelueschen
Cinesite

Zodanga, The Walking City of "John Carter"
Jon Neill
Artemis Oikonomopoulou
Axel Akesson
Dan Boogert
Cinesite

Thern: The Nano Technology of "John Carter"
Simon Stanley-Clamp
Richard Pickler
Artemis Oikonomopoulou
Cinesite

Facial Motion Capture for "John Carter"
Oliver James
Peter Kyme
Martin Parsons
Double Negative Visual Effects

Fast Realistic Lighting

Thursday, 9 August 2-3:30 pm

Session Chair

Chris Wyman
NVIDIA Research

Fast Generation of Directional Occlusion Volumes
Andrew Willmott
Electronic Arts Inc.

Local Image-Based Lighting With Parallax-Corrected Cubemaps
Sebastien Lagarde
Antoine Zanuttini
Dontnod Entertainment

Tiled and Clustered Forward Shading
Ola Olsson
Ulf Assarsson
Markus Billeter
Chalmers University of Technology

Art Pipeline: Transition From Offline to Real-Time CG
Renaldas Zioma
Paulius Liekis
Unity Technologies

Julian Hodgson
Passion Pictures

Hairy Scary

Thursday, 9 August 2-3:30 pm

Session Chair

Paul Strauss
Google, Inc.

Curls Gone Wild: Hair Simulation in "Brave"
Olivier Soares
Samantha Raja
Rich Hurrey
Hayley Iben
Pixar Animation Studios

High-Fidelity Facial Hair Capture
Graham Fyffe
USC Institute for Creative Technologies

Furry, Fuzzy, Lovable: Once Upon a Monster's Fur Pipeline
Peter Demoreuille
Google Inc.

Oliver Franzke
Double Fine Productions, Inc.

Lydia Choy
Bloom Studio, Inc.

Image Playground

Thursday, 9 August 3:45-5:15 pm

Session Chair

Kurt Luther
Georgia Institute of Technology

Crowd Sourcing Memory Colors For Image Enhancement
Su Xue
Yale University

Ann McNamara
Texas A&M University

Holly Rushmeier
Julie Dorsey
Yale University

Calligraphic Cutting: Extreme Image Resizing With Cuts in Continuous Domain
Youyou Wang
Ergun Akleman
Texas A&M University

Intelligent Brush Strokes
Daniel Wexler
Gilles Dezeustre
The 11ers

Rich Intrinsic Image Decomposition of Outdoor Scenes From Multiple Views
Pierre-Yves Laffont
Adrien Bousseau
George Drettakis
INRIA Sophia-Antipolis

PANDA: Panoramas, Displays and Acquisition

Thursday, 9 August 3:45-5:15 pm

Session Chair

Robert Kooima
Louisiana State University

Building Interior Multi-Panorama Experiences at Scale
Mark Colbert
Google Inc.

Panorama Light-Field Imaging
Clemens Birklbauer
Oliver Bimber
Johannes Kepler Universität Linz

Colloidal Display: A Membrane Screen That Combines Transparency, BRDF, and 3D Volume
Yoichi Ochiai
The University of Tokyo

Alexis Oyama
Carnegie Mellon University

Keisuke Toyoshima
University of Tsukuba

CoDAC: Compressive Depth Acquisition Using a Single Time-Resolved Sensor
Andrea Colaco
Ahmed Kirmani
Franco Wong
Vivek Goyal
Massachusetts Institute of Technology

Technical Papers

Full Conference Access
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SIGGRAPH Technical Papers is the premier international forum for disseminating new scholarly work in computer graphics and interactive techniques. At the conference, paper authors provide brief overviews of their work in the Technical Papers Fast Forward session.

Technical Papers are published as a special issue of ACM Transactions on Graphics. In addition to papers selected by the SIGGRAPH 2012 Technical Papers Jury, the conference presents papers that have been published in ACM Transactions on Graphics during the past year.

Full Conference Access registration allows attendees access to all SIGGRAPH 2012 Technical Papers. Seating is on a first-come, first-served basis. Please be sure to arrive early for the Technical Papers session you wish to attend.

Technical Papers Fast Forward

Sunday, 5 August, 6-8 pm

This exciting two-hour session is an entertaining, illuminating summary of all presented papers!

- Full Conference Access
- Basic Conference Pass
- Basic Conference Pass
- Computer Animation Festival
- Exhibitor

Character Locomotion

Monday, 6 August 9-10:30 am

Session Chair

Jehee Lee
Seoul National University

Optimizing Locomotion Controllers Using Biologically Based Actuators and Objectives

Jack M. Wang
Samuel R. Hamner
Scott L. Delp
Vladlen Koltun
Stanford University

Soft Body Locomotion

Jie Tan
Greg Turk
C. Karen Liu
Georgia Institute of Technology

Video-Based 3D Motion Capture Through Biped Control

Marek Vondrak
Brown University

Leonid Sigal
Disney Research Pittsburgh

Jessica Hodgins
Disney Research Pittsburgh and Carnegie Mellon University

Odest Jenkins
Brown University

Continuous Character Control With Low-Dimensional Embeddings

Sergey Levine
Jack M. Wang
Alexis Haraux
Stanford University

Zoran Popović
University of Washington

Vladlen Koltun
Stanford University

Shape Analysis

Monday, 6 August 9-10:30 am

Session Chair

Richard Zhang
Berlin Mathematical School (BMS) and MPI Informatik

Schelling Points on 3D Surface Meshes

Xiaobai Chen
Abulhair Saparov
Bill Pang
Thomas Funkhouser
Princeton University

Functional Maps: A Flexible Representation of Maps Between Shapes

Maks Ovsjanikov
Mirela Ben-Chen
Justin Solomon
Adrian Butscher
Leonidas Guibas
Stanford University

Variational Mesh Decomposition

Juyong Zhang
Jianmin Zheng
Nanyang Technological University

Chunlin Wu
National University of Singapore

Jianfei Cai
Nanyang Technological University

Sketch-Based Shape Retrieval

Mathias Eitz
Ronald Richter
Technischen Universität Berlin

Tamy Boubekeur
Télécom ParisTech

Kristian Hildebrand
Marc Alexa
Technischen Universität Berlin

Technical Papers

#siggraph #techpapers

Image Processing

Monday, 6 August 2- 3:30 pm

Session Chair

Peter-Pike Sloan
NVIDIA Research

Decoupling Algorithms From Schedules for Easy Optimization of Image-Processing Pipelines

Jonathan Ragan-Kelley
Andrew Adams
Massachusetts Institute of Technology

Sylvain Paris
Adobe Systems Incorporated

Marc Levoy
Stanford University

Saman Amarasinghe
Frédo Durand
Massachusetts Institute of Technology

Adaptive Manifolds for Real-Time High-Dimensional Filtering

Eduardo S. L. Gastal
Manuel M. Oliveira
Universidade Federal
do Rio Grande do Sul

High-Quality Image Deblurring With Panchromatic Pixels

Sen Wang
Eastman Kodak Company

Tingbo Hou
Stony Brook University

John Border
Eastman Kodak Company

Hong Qin
Stony Brook University

Rodney Miller
Eastman Kodak Company

Practical Temporal Consistency for Image-Based Graphics Applications

Manuel Lang
Disney Research Zürich and ETH Zürich

Oliver Wang
Tunc Aydin
Aljoscha Smolic
Disney Research

Markus Gross
Disney Research Zürich and ETH Zürich

Cloth

Monday, 6 August 2-3:30 pm

Session Chair

Dinesh Pai
University of British Columbia

Specular Reflection From Woven Cloth

Piti Irawan
Steve Marschner
Cornell University

DRAPE : DRessing Any PErson

Peng Guan
Loretta Reiss
Brown University

David A. Hirshberg
Max Planck Institut für Intelligente Systeme

Alexander Weiss
Brown University

Michael J. Black
Max Planck Institut für Intelligente Systeme

Design-Preserving Garment Transfer

Rémi Brouet
Laboratoire Jean-Kuntzmann/INRIA

Alla Sheffer
The University of British Columbia

Laurence Boissieux
INRIA

Marie-Paule Cani
Laboratoire Jean-Kuntzmann/INRIA

Stitch Meshes for Modeling Knitted Clothing With Yarn-level Detail

Cem Yuksel
Jonathan M. Kaldor
Doug L. James
Steve Marschner
Cornell University

Appearance

Monday, 6 August 3:45-5:35 pm

Session Chair

Hendrik Lensch
Tübingen University

3D Imaging Spectroscopy for Measuring 3D Hyperspectral Patterns on Solid Objects

Min H. Kim
Todd Alan Harvey
Yale University

David S. Kittle
Duke University

Holly Rushmeier
Julie Dorsey
Richard O. Prum
Yale University

David J. Brady
Duke University

Primal-Dual Coding to Probe Light Transport

Matthew O'Toole
University of Toronto

Ramesh Raskar
Massachusetts Institute of Technology

Kiriakos Kutulakos
University of Toronto

Fast High-Resolution Appearance Editing Using Superimposed Projections

Daniel E. Aliaga
Yu Hong Yeung
Alvin Law
Purdue University

Behzad Sajadi
Aditi Majumder
University of California, Irvine

Printing Spatially Varying Reflectance for Reproducing HDR Images

Yue Dong
Xin Tong
Microsoft Research Asia

Fabio Pellacini
Dartmouth College and Sapienza – Università di Roma

Baining Guo
Microsoft Research Asia

Technical Papers

#siggraph #techpapers

Printing Reflectance Functions

Thomas Malzbender
Ramin Samadani
Hewlett-Packard Laboratories

Steven Scher
Adam Crume
University of California, Santa Cruz

Douglas Dunn
3M

James Davis
University of California, Santa Cruz

Hand, Eye, and Face

Monday, 6 August 3:45-5:35 pm

Session Chair

Vladlen Koltun
Stanford University

Synthesis of Detailed Hand Manipulations Using Contact Sampling

Yuting Ye
C. Karen Liu
Georgia Institute of Technology

Eyecatch: Simulating Visuomotor Coordination for Object Interception

Sang Hoon Yeo
Martin Lesmana
Debanga R. Neog
Dinesh K. Pai
The University of British Columbia

Discovery of Complex Behaviors through Contact-Invariant Optimization

Igor Mordatch
Emanuel Todorov
Zoran Popović
University of Washington

Spacetime Expression Cloning for Blendshapes

Yeongho Seol
Korea Advanced Institute of Science and Technology and Weta Digital

J.P. Lewis
Weta Digital

Jaewoo Seo
Byungkuk Choi
Korea Advanced Institute of Science and Technology

Ken Anjyo
OLM Digital, Inc. and JST CREST

Junyong Noh
Korea Advanced Institute of Science and Technology

Bilinear Spatiotemporal Basis Models

Ijaz Akhter
Lahore University of Management Sciences

Tomas Simon
Carnegie Mellon University

Sohaib Khan
Lahore University of Management Sciences

Iain Matthews
Disney Research Pittsburgh

Yaser Sheikh
Carnegie Mellon University

Sketching

Monday, 6 August 3:45-5:35 pm

Session Chair

Eitan Grinspun
Columbia University

Three-Dimensional Proxies for Hand-Drawn Characters

Eakta Jain
Yaser Sheikh
Carnegie Mellon University

Moshe Mahler
Jessica Hodgins
Carnegie Mellon University and Disney Research Pittsburgh

How Do Humans Sketch Objects?

Mathias Eitz
Technischen Universität Berlin

James Hays
Brown University

Marc Alexa
Technischen Universität Berlin

CrossShade: Shading Concept Sketches Using Cross-Section Curves

Cloud Shao
University of Toronto

Adrien Bousseau
REVES/INRIA Sophia Antipolis

Alla Sheffer
The University of British Columbia

Karan Singh
University of Toronto

Learning Hatching for Pen-and-Ink Illustration of Surfaces

Evangelos Kalogerakis
Stanford University

Derek Nowrouzezahrai
Université de Montréal

Simon Breslav
Autodesk Research

Aaron Hertzmann
University of Toronto

HelpingHand: Example-Based Stroke Stylization

Jingwan Lu
Fisher Yu
Adam Finkelstein

Princeton University

Stephen DiVerdi
Adobe Systems Incorporated

Fabrication

Tuesday, 7 August 9-10:30 am

Session Chair

Marc Alexa
Technischen Universität Berlin

Fabricating Articulated Characters From Skinned Meshes

Moritz Bächer
Harvard University

Bernd Bickel
Disney Research Zürich

Doug L. James
Cornell University

Hanspeter Pfister
Harvard University

Stress Relief: Improving Structural Strength of 3D Printable Objects

Ondrej Stava
Juraj Vanek
Bedrich Benes
Purdue University

Nathan Carr
Radomir Mech
Adobe Systems Incorporated

Beady: Interactive Beadwork Design and Construction

Yuki Igarashi
University of Tsukuba

Takeo Igarashi
Jun Mitani
The University of Tsukuba/JST ERATO

Technical Papers

#siggraph #techpapers

Plastic Trees: Interactive Self-Adapting Botanical Tree Models

Sören Pirk
Universität Konstanz

Ondrej Stava
Purdue University

Julian Kratt
Universität Konstanz

Michel Abdul-Massih Said
Purdue University

Boris Neubert
Universität Konstanz

Radomir Mech
Adobe Systems Incorporated

Bedrich Benes
Purdue University

Oliver Deussen
Universität Konstanz

Sampling, Reconstructing, and Filtering Light

Tuesday, 7 August 10:45 am-12:15 pm

Session Chair

Kun Zhou
Zheijang University

A Theory of Monte Carlo Visibility Sampling

Ravi Ramamoorthi
University of California, Berkeley

John Anderson
Mark Meyer
Pixar Animation Studios

Derek Nowrouzezahrai
Disney Research Zürich and Université de Montréal

Theory, Analysis, and Applications of 2D Global Illumination

Wojciech Jarosz
Disney Research Zürich and University of California, San Diego

Volker Schönefeld
Limbic Software, RWTH Aachen University, and University of California, San Diego

Leif Kobbelt
RWTH Aachen University

Henrik Wann Jensen
University of California, San Diego

On Filtering the Noise From the Random Parameters in Monte Carlo Rendering

Pradeep Sen
Soheil Darabi
University of New Mexico

Reconstructing the Indirect Light Field for Global Illumination

Jaakko Lehtinen
Timo Aila
Samuli Laine
NVIDIA Research

Frédo Durand
Massachusetts Institute of Technology

Geometry Reconstruction & Tracking

Tuesday, 7 August 10:45 am-12:15 pm

Session Chair

Chi-Keung Tang
The Hong Kong University of Science & Technology

Stochastic Tomography and Its Applications in 3D Imaging of Mixing Fluids

James Gregson
Michael Krimerman
Matthias Hullin
Wolfgang Heidrich
The University of British Columbia

Animation Cartography - Intrinsic Reconstruction of Shape and Motion

Art Tevs
Alexander Berner
Michael Wand
Max-Planck-Institut für Informatik

Ivo Ihrke
Universität des Saarlandes

Martin Bokeloh
Jens Kerber
Hans-Peter Seidel
Max-Planck-Institut für Informatik

Temporally Coherent Completion of Dynamic Shapes

Hao Li
ETH Zürich

Linjie Luo
Princeton University

Daniel Vlasic
Massachusetts Institute of Technology

Pieter Peers
The College of William & Mary and USC Institute for Creative Technologies

Jovan Popović
Adobe Systems Incorporated, University of Washington, and Massachusetts Institute of Technology

Mark Pauly
École Polytechnique Fédérale de Lausanne

Szymon Rusinkiewicz
Princeton University

Tracking Surfaces With Evolving Topology

Morten Bojsen-Hansen
Institute of Science and Technology Austria

Hao Li
Columbia University

Chris Wojtan
Institute of Science and Technology Austria

Sets of Shapes

Tuesday, 7 August 2-3:30 pm

Session Chair

Alla Sheffer
University of British Columbia

Exploring Collections of 3D Models Using Fuzzy Correspondence

Vladimir G. Kim
Princeton University

Wilmot Li
Adobe Systems Incorporated

Niloy J. Mitra
University College London

Stephen DiVerdi
Adobe Systems Incorporated

Thomas Funkhouser
Princeton University

Technical Papers

#siggraph #techpapers

A Probabilistic Model for Component-Based Shape Synthesis

Evangelos Kalogerakis
Siddhartha Chaudhuri
Daphne Koller
Vladlen Koltun
Stanford University

Synthesizing Open Worlds With Constraints Using Locally Annealed Reversible Jump MCMC

Yi-Ting Yeh
Lingfeng Yang
Matthew Watson
Noah D. Goodman
Pat Hanrahan
Stanford University

Fit and Diverse: Set Evolution for Inspiring 3D Shape Galleries

Kai Xu
Shenzhen VisuCA Key Lab/SIAT and National University of Defense Technology (NUDT)

Hao (Richard) Zhang
Simon Fraser University

Daniel Cohen-Or
Tel Aviv University

Baoquan Chen
Shenzhen VisuCA Key Lab/SIAT

Light Rays

Tuesday, 7 August 2-3:30 pm

Session Chair

Jaakko Lehtinen
NVIDIA Research

Naïve Ray Tracing: A Divide-And-Conquer Approach

Benjamin Mora
Swansea University

Manifold Exploration: A Markov Chain Monte Carlo Technique for Rendering Scenes With Difficult Specular Transport

Wenzel Jakob
Steve Marschner
Cornell University

Bidirectional Lightcuts

Bruce Walter
Pramook Khungurn
Kavita Bala
Cornell University

Virtual Ray Lights for Rendering Scenes With Participating Media

Jan Novák
Karlsruher Institut für Technologie

Derek Nowrouzezahrai
Disney Research Zürich

Carsten Dachsbacher
Karlsruher Institut für Technologie

Wojciech Jarosz
Disney Research Zürich

Particle Fluids

Tuesday, 7 August 2-3:30 pm

Session Chair

Nils Thuerey
ScanlineVFX

Ghost SPH for Animating Water

Hagit Schechter
Robert Bridson
The University of British Columbia

Versatile Rigid-Fluid Coupling for Incompressible SPH

Nadir Akinci
Markus Ihmsen
Gizem Akinci
Universität Freiburg

Barbara Solenthaler
ETH Zürich

Matthias Teschner
Universität Freiburg

MultiFLIP for Energetic Two-Phase Fluid Simulation

Landon Boyd
Robert Bridson
The University of British Columbia

Animating Bubble Interactions in a Liquid Foam

Oleksiy Busaryev
Tamal K. Dey
Huamin Wang
The Ohio State University

Zhong Ren
Zhejiang University

Fun With Video

Tuesday, 7 August 3:45-5:35 pm

Session Chair

Noah Snavely
Cornell University

Video Deblurring for Hand-Held Cameras Using Patch-Based Synthesis

Sunghyun Cho
Pohang University of Science and Technology

Jue Wang
Adobe Systems Incorporated

Seungyong Lee
Pohang University of Science and Technology

Eulerian Video Magnification for Revealing Subtle Changes in the World

Hao-Yu Wu
Michael Rubinstein
Massachusetts Institute of Technology

Eugene Shih
Quanta Research Cambridge, Inc.

John Guttag
Frédo Durand
Massachusetts Institute of Technology

William T. Freeman
Massachusetts Institute of Technology

Selectively De-Animating Video

Jiamin Bai
University of California, Berkeley

Aseem Agarwala
Adobe Systems Incorporated

Maneesh Agrawala
Ravi Ramamoorthi
University of California, Berkeley

Tools for Placing Cuts and Transitions in Interview Video

Floraine Berthouzoz
University of California, Berkeley

Wilmot Li
Adobe Systems Incorporated

Maneesh Agrawala
University of California, Berkeley

Technical Papers

#siggraph #techpapers

Videoscapes: Exploring Sparse, Unstructured Video Collections

James Tompkin
University College London

Kwang In Kim
Max-Planck-Institut für Informatik

Jan Kautz
University College London

Christian Theobalt
Max-Planck-Institut für Informatik

Control Deformables

Tuesday, 7 August 3:45-5:35 pm

Session Chair

Adam Bargteil
University of Utah

Deformable Objects Alive!

Stelian Coros
Sebastian Martin
Bernhard Thomaszewski
Disney Research Zürich

Christian Schumacher
ETH Zürich

Robert Sumner
Markus Gross
Disney Research Zürich

Interactive Editing of Deformable Simulations

Jernej Barbič
Funshing Sin
University of Southern California

Eitan Grinspun
Columbia University

Interactive Spacetime Control of Deformable Objects

Klaus Hildebrandt
Christian Schulz
Christoph von Tycowicz
Konrad Polthier
Freie Universität Berlin

Rig-Space Physics

Fabian Hahn
ETH Zürich

Sebastian Martin
Bernhard Thomaszewski
Robert Sumner
Stelian Coros
Markus Gross
Disney Research Zürich

Fast Simulation of Skeleton-Driven Deformable Body Characters

Junggon Kim
Nancy S. Pollard
Carnegie Mellon University

Noise and Texture

Tuesday, 7 August 3:45-5:35 pm

Session Chair

Wojciech Jarosz
Disney Research Zürich

Gabor Noise by Example

Bruno Galerne
Université Paris Descartes

Ares Lagae
Katholieke Universiteit Leuven

Sylvain Lefebvre
Alice/INRIA

George Drettakis
REVES/INRIA Sophia-Antipolis

Diffusion Curve Textures for Resolution-Independent Texture Mapping

Xin Sun
Microsoft Research Asia

Guofu Xie
Chinese Academy of Sciences

Yue Dong
Stephen Lin
Weiwei Xu
Microsoft Research Asia

Wencheng Wang
Chinese Academy of Sciences

Xin Tong
Baining Guo
Microsoft Research Asia

Structure-Aware Synthesis for Predictive Woven Fabric Appearance

Shuang Zhao
Kavita Bala
Steve Marschner
Wenzel Jakob
Cornell University

Point Sampling With General Noise Spectrum

Yahan Zhou
Haibin Huang
University of Massachusetts Amherst

Li-Yi Wei
The University of Hong Kong

Rui Wang
University of Massachusetts Amherst

Symmetry-Guided Texture Synthesis and Manipulation

Vladimir Kim
Princeton University

Yaron Lipman
Weizmann Institute of Science

Thomas Funkhouser
Princeton University

Shape Transformation

Wednesday, 8 August 9-10:30 am

Session Chair

Karan Singh
University of Toronto

Fast Automatic Skinning Transformations

Alec Jacobson
ETH Zürich

Ilya Baran
Disney Research Zürich

Ladislav Kavan
ETH Zürich

Jovan Popović
Adobe Systems Incorporated

Olga Sorkine
ETH Zürich

An Algebraic Model for Parameterized Shape Editing

Martin Bokeloh
Stanford University

Michael Wand
Hans-Peter Seidel
Max-Planck-Institut für Informatik

Vladlen Koltun
Stanford University

Steady Affine Motions and Morphs

Jarek Rossignac
Gerogia Institute of Technology

Àlvar Vinacua
Universitat Politècnica de Catalunya

Interactive Surface Modeling Using Modal Analysis

Klaus Hildebrandt
Christian Schulz
Freie Universität Berlin

Christoph von Tycowicz
Hochschule Bremen

Konrad Polthier
Freie Universität Berlin

Technical Papers

#siggraph #techpapers

Displays

Wednesday, 8 August 9-10:30 am

Session Chair

Diego Gutierrez
Universidad de Zaragoza

Resolution Enhancement by Vibrating Displays

Floraine Berthouzoz
University of California, Berkeley

Raanan Fattal
The Hebrew University of Jerusalem

Edge-Guided Resolution Enhancement in Projectors via Optical Pixel Sharing

Behzad Sajadi
Meenakshisundaram Gopi
Aditi Majumder
University of California, Irvine

Tensor Displays: Compressive Light-Field Synthesis Using Multilayer Displays With Directional Backlighting

Gordon Wetzstein
Douglas Lanman
Matthew Hirsch
Ramesh Raskar
MIT Media Lab

Tailored Displays to Compensate for Visual Aberrations

Vitor F. Pamplona
Manuel M. Oliveira
Universidade Federal do Rio Grande do Sul

Daniel G. Aliaga
Purdue University

Ramesh Raskar
MIT Media Lab

Stitching

Wednesday, 8 August 10:45 am-12:15 pm

Session Chair

Ping Tan
National University of Singapore

Image Melding: Combining Inconsistent Images Using Patch-Based Synthesis

Soheil Darabi
University of New Mexico

Eli Shechtman
Connelly Barnes
Dan B. Goldman
Adobe Systems Incorporated

Pradeep Sen
University of New Mexico

Panorama Weaving: Fast and Flexible Seam Processing

Brian Summa
University of Utah and ViSUS Inc.

Julien Tierny
Télécom ParisTech

Valerio Pascucci
University of Utah, Pacific Northwest National Laboratory, and ViSUS Inc.

Understanding and Improving the Realism of Image Composites

Su Xue
Yale University

Aseem Agarwala
Adobe Systems Incorporated

Julie Dorsey
Holly Rushmeier
Yale University

Exposing Photo Manipulation With Inconsistent Reflections

James F. O'Brien
University of California, Berkeley

Hany Farid
Dartmouth College

Maps, Surfaces, and Shapes

Wednesday, 8 August 10:45 am-12:15 pm

Session Chair

Eugene Zhang
Oregon State University, Berlin Mathematical School and MPI Informatik

Robust Modeling of Constant Mean Curvature Surfaces

Hao Pan
Yi-King Choi
The University of Hong Kong

Yang Liu
Microsoft Research Asia

Wenchao Hu
The University of Hong Kong

Qiang Du
Pennsylvania State University

Konrad Polthier
Freie Universitaet Berlin

Caiming Zhang
Shandong University

Wenping Wang
The University of Hong Kong

Simple Formulas For Quasiconformal Plane Deformations

Yaron Lipman
Weizmann Institute of Science

Vladimir G. Kim
Princeton University

Thomas Funkhouser
Princeton University

Guided Exploration of Physically Valid Shapes for Furniture Design

Nobuyuki Umetani
Takeo Igarashi
The University of Tokyo

Niloy J. Mitra
University College London

Design of Self-Supporting Surfaces

Paul Vouga
Columbia University and King Abdullah University of Science and Technology

Mathias Höbinger
Evolute GmbH and Technische Universität Wien

Johannes Wallner
Technische Universität Graz and Technische Universität Wien

Helmut Pottmann
King Abdullah University of Science and Technology

Technical Papers

#siggraph #techpapers

Interactive Systems & Hardware

Wednesday, 8 August 2-3:30 pm

Session Chair

Patrick Baudisch
Hasso Plattner Institute

Position-Correcting Tools for 2D Digital Fabrication

Alec Rivers
Ilan E. Moyer
Frédo Durand
Massachusetts Institute of Technology

REVEL: Tactile Feedback Technology for Augmented Reality

Olivier Bau
Ivan Poupyrev
Disney Research Pittsburgh

Realistic Perspective Projections for Virtual Objects and Environments

Frank Steinicke
Gerd Bruder
Universität Würzburg

Scott Kuhl
Michigan Technological University

Micro Perceptual Human Computation for Visual Tasks

Yotam Gingold
Columbia University and Rutgers, The State University of New Jersey

Ariel Shamir
Interdisciplinary Center, Herzliya

Daniel Cohen-Or
Tel Aviv University

Perception and Stereo

Wednesday, 8 August 3:45-5:35 pm

Session Chair

Holly Rushmeier
Yale University

Push it Real: Perceiving Causality in Virtual Interactions

Ludovic Hoyet
Rachel McDonnell
Carol O'Sullivan
Trinity College Dublin

Render Me Real? Investigating the Effect of Render Style on the Perception of Animated Virtual Humans

Rachel McDonnell
Trinity College Dublin

Martin Breidt
Max-Planck-Institut für biologische Kybernetik

Heinrich Bülthoff
Korea University

Highlight Microdisparity for Improved Gloss Depiction

Krzysztof Templin
Piotr Didyk
Tobias Ritschel
Karol Myszkowski
Hans-Peter Seidel
Max-Planck-Institut für Informatik

Binocular Tone Mapping

Xuan Yang
Linling Zhang
Tien-Tsin Wong
Pheng-Ann Heng
The Chinese University of Hong Kong

Surface Flows for Image-Based Shading Design

Romain Vergne
Justus-Liebig-Universität Gießen

Pascal Barla
LABRI/INRIA Bordeaux

Roland W. Fleming
Justus-Liebig-Universität Gießen

Xavier Granier
LABRI/INRIA Bordeaux

Physics and Mathematics for Light

Wednesday, 8 August 3:45-5:35 pm

Session Chair

Xin Tong
Microsoft Research Asia

Reflectance Model for Diffraction

Tom Cuypers
Universiteit Hasselt

Se Baek Oh
Massachusetts Institute of Technology

Tom Haber
Philippe Bekaert
Universiteit Hasselt

Ramesh Raskar
MIT Medialab

An Analytic Model for Full Spectral Sky-Dome Radiance

Lukas Hosek
Alexander Wilkie
Univerzita Karlova v Praze

Physically-Based Simulation of Rainbows

Iman Sadeghi
University of California, San Diego

Adolfo Munoz
Universidad de Zaragoza

Philip Laven

Wojciech Jarosz
Disney Research, Zürich and University of California, San Diego

Francisco Seron
Diego Gutierrez
Universidad de Zaragoza

Henrik Wann Jensen
University of California, San Diego

K-Clustered Tensor Approximation: A Sparse Multi-Linear Model for Real-Time Rendering

Yu-Ting Tsai
Zen-Chung Shih
National Chiao Tung University

Sparse Zonal Harmonic Factorization for Efficient SH Rotation

Derek Nowrouzezahrai
Université de Montréal

Patricio Simari
Eugene Fiume
University of Toronto

Collisions

Wednesday, 8 August 3:45-5:35 pm

Session Chair

Jernej Barbic
University of Southern California

Efficient Geometrically Exact Continuous Collision Detection

Tyson Brochu
Essex Edwards
Robert Bridson
The University of British Columbia

Technical Papers

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VolCCD: Fast Continuous Collision Culling Between Deforming Volume Meshes

Min Tang
Zhejiang University

Dinesh Manocha
University of North Carolina at Chapel Hill

Sung-Eui Yoon
Korea Advanced Institute of Science and Technology

Peng Du
Zhejiang University

Jae-Pil Heo
Korea Advanced Institute of Science and Technology

Ruo-Feng Tong
Zhejiang University

Adaptive Image-Based Intersection Volume

Bin Wang
Beihang University and The University of British Columbia

François Faure
Université de Grenoble 1 and The University of British Columbia

Dinesh K. Pai
The University of British Columbia

PolyDepth: Real-Time Penetration-Depth Computation Using Iterative Contact-Space Projection

Changsoo Je
Ewha Womans University
and Sogang University

Min Tang
Youngeun Lee
Minkyoung Lee
Young J. Kim
Ewha Womans University

Energy-Based Self-Collision Culling for Arbitrary Mesh Deformations

Changxi Zheng
Doug L. James
Cornell University

All About Images

Thursday, 9 August 9-10:30 am

Session Chair

James Hays
Brown University

Interactive Images: Cuboid Proxies for Smart Image Manipulation

Youyl Zheng
King Abdullah University of Science and Technology

Xiang Chen
Zhejiang University

Ming-Ming Cheng
Tsinghua University

Kun Zhou
Zhejiang University

Shi-Min Hu
Tsinghua University

Niloy Mitra
University College London

A Framework for Content-Adaptive Photo Manipulation Macros: Application to Face, Landscape, and Global Manipulations

Floraine Berthouzoz
University of California, Berkeley

Wilmot Li
Mira Dontcheva
Adobe Systems Incorporated

Maneesh Agrawala
University of California, Berkeley

Image-Based Rendering for Scenes With Reflections

Sudipta N. Sinha
Johannes Kopf
Microsoft Research

Michael Goesele
Technische Universität Darmstadt

Daniel Scharstein
Middlebury College

Richard Szeliski
Microsoft Research

What Makes Paris Look Like Paris?

Carl Doersch
Saurabh Singh
Abhinav Gupta
Carnegie Mellon University

Josef Sivic
INRIA

Alexei A. Efros
Carnegie Mellon University

Sound and Elements

Thursday, 9 August 9-10:30 am

Session Chair

George Drettakis
REVES/INRIA Sophia-Antipolis

Motion-Driven Concatenative Synthesis of Cloth Sounds

Steven S. An
Doug L. James
Steve Marschner
Cornell University

Precomputed Acceleration Noise for Improved Rigid-Body Sound

Jeffrey N. Chadwick
Changxi Zheng
Doug L. James
Cornell University

Interactive Sound Propagation Using Compact Acoustic Transfer Operators

Lakulish Antani
Anish Chandak
University of North Carolina at Chapel Hill

Lauri Savioja
Aalto University

Dinesh Manocha
University of North Carolina at Chapel Hill

Updated Sparse Cholesky Factors for Corotational Elastodynamics

Florian Hecht
Yeon Jin Lee
Jonathan R. Shewchuk
James F. O'Brien
University of California, Berkeley

Technical Papers

#siggraph #techpapers

Rigid Bodies and Penalty Forces

Thursday, 9 August 10:45 am-12:15 pm

Session Chair

Robert Bridson
University of British Columbia

Underwater Rigid Body Dynamics

Steffen Weißmann
Ulrich Pinkall
Technische Universität Berlin

Mass Splitting for Jitter-Free Parallel Rigid-Body Simulation

Richard Tonge
Feodor Benevolenski
Andrey Voroshilov
NVIDIA Corporation

Reflections on Simultaneous Impact

Breannan Smith
Danny M. Kaufman
Etienne Vouga
Columbia University

Rasmus Tamstorf
Walt Disney Animation Studios

Eitan Grinspun
Columbia University

Continuous Penalty Forces

Min Tang
Zhejiang University

Dinesh Manocha
University of North Carolina at Chapel Hill

Miguel A. Otaduy
Universidad Rey Juan Carlos de Madrid

Ruofeng Tong
Zhejiang University

Layout and Parameterization

Thursday, 9 August 10:45 am-12:15 pm

Session Chair

Paolo Cignoni
ISTI - CNR

Bounded-Distortion-Mapping Spaces For Triangular Meshes

Yaron Lipman
Weizmann Institute of Science

Global Parameterization by Incremental Flattening

Ashish Myles
Denis Zorin
New York University

Dual Loops Meshing: Quality Quad Layouts on Manifolds

Marcel Campen
David Bommes
Leif Kobbelt
RWTH Aachen University

Fields on Symmetric Surfaces

Daniele Panozzo
ETH Zürich

Yaron Lipman
Weizmann Institute of Science

Enrico Puppo
Università degli Studi di Genova

Denis Zorin
New York University

Mesh Based Fluids

Thursday, 9 August 2-3:30 pm

Session Chair

Chris Wojtan
IST Austria

Lagrangian Vortex Sheets for Animating Fluids

Tobias Pfaff
ETH Zürich

Nils Thuerey
ScanlineVFX GmbH

Markus Gross
ETH Zürich

Discrete Viscous Sheets

Christopher Batty
Andres Uribe
Columbia University

Basile Audoly
Université Pierre et Marie Curie

Eitan Grinspun
Columbia University

Topology-Adaptive Interface Tracking Using the Deformable Simplicial Complex

Marek Misztal
Jakob Andreas Bærentzen
Danmarks Tekniske Universitet

Fluid Simulation Using Laplacian Eigenfunctions

Tyler de Witt
Christian Lessig
Eugene Fiume
University of Toronto

Technical Papers

#siggraph #techpapers

Geometry & Viewing

Thursday, 9 August 2-3:30 pm

Session Chair

Scott Schaefer
Texas A&M University

Feature-Adaptive GPU Rendering of Catmull-Clark Subdivision Surfaces

Matthias Nießner
Friedrich-Alexander-Universität Erlangen-Nürnberg

Charles Loop
Microsoft Research

Mark Meyer
Tony DeRose
Pixar Animation Studios

Object-Space Multiphase Implicit Functions

Zhan Yuan
The University of Hong Kong

Yizhou Yu
The University of Hong Kong and University of Illinois at Urbana-Champaign

Wenping Wang
The University of Hong Kong

Discrete Bi-Laplacians and Biharmonic B-Splines

Powei Feng
Joe Warren
Rice University

Perceptual Models of Viewpoint Preference

Adrian Secord
New York University

Jingwan Lu
Adam Finkelstein
Princeton University

Manish Singh
Rutgers University

Andrew Nealen
Rutgers, The State University of New Jersey

Faces and Hair [Closing Session]

Thursday, 9 August 3:45-5:15 pm

Session Chair

Matthias Zwicker
University of Bern

Single-View Hair Modeling for Portrait Manipulation

Menglei Chai
Zhejiang University

Lvdi Wang
Microsoft Research Asia

Yanlin Weng
Zhejiang University

Yizhou Yu
University of Hong Kong

Baining Guo
Microsoft Research Asia

Kun Zhou
Zhejiang University

Coupled 3D Reconstruction of Sparse Facial Hair and Skin

Thabo Beeler
ETH Zürich and Disney Research Zürich

Bernd Bickel
Disney Research Zürich

Gioacchino Noris
ETH Zürich and Disney Research Zürich

Paul Beardsley
Disney Research Zürich

Steve Marschner
Cornell University

Robert W. Sumner
Disney Research Zürich

Markus Gross
ETH Zürich and Disney Research Zürich

Physical Face Cloning

Bernd Bickel

Peter Kaufmann
Disney Research Zürich

Melina Skouras
ETH Zürich

Bernhard Thomaszewski
Derek Bradley
Disney Research Zürich

Thabo Beeler
ETH Zürich

Philip Jackson
Walt Disney Imagineering

Steve Marschner
Cornell University

Wojciech Matusik
Disney Research Zürich

Markus Gross
ETH Zürich and Disney Research Zürich

Exhibitor Tech Talks

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Exhibitors
#siggraph #techtalks

Comprehensive summaries of the latest technologies in computer graphics and interactive techniques. SIGGRAPH 2012 exhibitors demonstrate software, hardware, and systems; answer questions; and host one-on-one conversations about how their applications improve professional and technical performance.

Tuesday, 7 August

Unity Technologies

Tuesday, 7 August, 11:15 am-12:15 pm

Unity Art Pipeline, Butterfly Demo
Unity art pipeline, Butterfly Demo.

AMD

Tuesday, 7 August, 12:45-1:45 pm

AMD FirePro Advanced 3D Graphic and Compute Features & AMD FirePro 3D Graphics and Compute Combined on Latest GPU Architecture in Deep Dive
This talk reviews the features that the AMD FirePro solutions provide for 3D graphics and compute through OpenGL, DirectX, and OpenCL. It describes how they apply to specific workflows for digital content creation or video processing.

Demos combining 3D graphics and compute using the latest AMD GPU architecture. The demos provide deep-dive technical details on the best ways to combine rendering and compute tasks.

Next Limit Technologies

Tuesday, 7 August, 2:15-3:15 pm

RealFlow 2013 Technology Preview
Next Limit demos the exciting new developments coming up in RealFlow 2013, from the new Hybrido2 solver to the RealFlow Graphs implementation. Examples demonstrate the power and flexibility of the new nodal systems. The session also includes a preview of some of the other great new features coming up in this release: Alembic, Maxwell Render integration, and RealFlow Renderkit3.0

Speakers

Angel Tena
RealFlow Lead Developer

Gustavo Sanchez
Real Flow Product Manager

CentiLeo

Tuesday, 7 August, 3:45-4:40 pm

Huge-Scene Interactive Rendering on a Laptop
CentiLeo is a high-performance rendering engine that interactively renders huge scenes composed of hundreds of millions of polygons, on a laptop accelerated with a GPU. Using the fastest ray tracing and to render photorealistic images, the system supports arbitrarilly dynamic 3D scenes (deformed or exploding) and a huge number of large textures. Scenes can contain dozens or hundreds of gigabytes, and still the frames are interactively updateable on a laptop with a GPU.

Imagination Technologies Limited

Tuesday, 7 August, 5:05-6 pm

Accelerating Look Development *With* Rhinoceros Interactive Ray-Traced Viewports
Interactive ray tracing plugins for popular 3D packages (including Autodesk 3ds Max, Autodesk Maya, and McNeel & Associates Rhinoceros) are now bringing final-frame photorealism to even the earliest stages of modeling and lighting, and in doing so creating exciting new creative opportunities for artists and designers. In this session, users of Rhinoceros learn how real-time ray-traced viewports help designers make better-informed creative choices, shorten review cycles, and save time by reducing unnecessary and time-consuming preview renders compared to working with traditional OpenGL or Direct3D viewports.

Wednesday, 8 August

Qt Commercial, Digia Oyj

Wednesday, 8 August, 9:45-10:45 am

Learn How to Develop Powerful Advanced Visualization Applications and UIs With Qt Commercial
This session shows how development frameworks can be used to create advanced visualization applications and UIs with fewer lines of code. It introduces the Qt Commercial cross-platform application and UI framework to create stunning graphics and an amazing UX. Qt Commercial is the strategic-development choice for leading production houses looking to shorten time to market, increase efficiency, drive creativity, and extend outreach. Demos show the development tool in action and explain how to quickly develop an easy-to-use UI. The session also covers how our Qt Commercial's cross-platform capabilities protect investments by enabling developers to write the same application once and deploy it on different OS targets.

Exhibitor Tech Talks

#siggraph #techtalks

AMD

Wednesday, 8 August-11:15 am-12:15 pm

AMD FirePro Advanced 3D Graphic and Compute Features & AMD FirePro 3D Graphics and Compute Combined on Latest GPU Architecture in Deep Dive
This talk reviews the features that the AMD FirePro solutions provide for 3D graphics and compute through OpenGL, DirectX, and OpenCL. It describes how they apply to specific workflows for digital content creation or video processing. Demos combining 3D graphics and compute using the latest AMD GPU architecture. The demos provide deep-dive technical details on the best ways to combine rendering and compute tasks.

Web3D Consortium

Wednesday, 8 August, 12:45-1:45 pm

Delivering New Dimensions on the Web
X3D is the only open-standard (ISO), royalty-free file format and run-time player specification for 4D virtual environments. It remains the most robust and versatile open standard for implementation of high- integrity, high-capability 4D multimedia information spaces. With multiple encodings and API bindings, it is compatible with many web and industry technologies. The data-integration capacities and the rich set of componentized features are rapidly expanding X3D's value across markets from mobile to AR, CAD, and medical.

Meet our innovative community of content and application developers, who ensure interoperability, longevity, and ownership of your content. See the latest real-world interactive 3D applications and find out how you can build and protect your content investment in this ever-changing competitive market.

Presenters from: Virginia Polytechnic Institute and State University, Bitmanagement Software GmbH, Fraunhofer-Gesellschaft, Naval Postgraduate School, and others

Imagination Technologies Limited

Wednesday, 8 August, 2:15-3:15 pm

Accelerating Look Development *With* Autodesk 3ds Max and Autodesk Maya Interactive Ray Traced Viewports
Interactive ray tracing plugins for popular 3D packages (including Autodesk 3ds Max, Autodesk Maya, and McNeel & Associates Rhinoceros) are now bringing final-frame photorealism to even the earliest stages of modeling and lighting, and in doing so creating exciting new creative opportunities for artists and designers. In this session, users of 3ds Max and Maya learn how real-time ray-traced viewports help designers make better-informed creative choices, shorten review cycles, and save time by reducing unnecessary and time-consuming preview renders compared to working with traditional OpenGL or Direct3D viewports.

Isotropix SAS

Wednesday, 8 August, 3:45-4:40 pm

Introducing Artistically Correct Rendering
Clarisse is a new breed of high-end 2D/3D animation software derived from years of teamwork between Isotropix R&D engineers and high-end CG artists. Designed as the fusion of a compositing software, a 3D rendering engine, and animation software, Clarisse delivers a fully revised workflow powered by a unified 2D/3D graphics rendering pipeline. It is the world's first animation software that lets artists work interactively on their final images, with full effects on. This session demonstrates creating and working on feature-film-like visual effects, interactively.

Imagination Technologies Limited

Wednesday, 8 August, 5:05-6 pm

PowerVR: Getting Great Graphics Performance With the PowerVR Insider SDK
Experts from the PowerVR Developer Technology team deliver the low-down on the great new features that have been added to the PowerVR Insider SDK and utilities. Learn how to tame textures, models, and shaders, and incorporate these leading development tools into your workflow to produce smarter, more portable game code. Then take a deep-dive into the SDK's performance tools, PVRTune and PVRTrace, and how they are used, and the PVRScope API for extracting maximum performance from today's leading mobile and hand-held gaming platforms.

Exhibitor Sessions

#siggraph #techtalks

Exhibitor Sessions

Wednesday, 8 August 9 am-5:30 pm

Intel Corporation, Room 402B

Join Intel experts for a full day of cutting-edge graphics research deep-dives, technical discussions, and exciting demos. From open-source ray tracing kernels and next-gen graphics technologies to OpenCL programming on Intel CPUs and GPUs, learn how to take advantage of latest-generation hardware to identify, optimize and unleash stellar performance for your next graphics and media workloads.

9-10 am

Embree: Photo-Realistic Ray Tracing Kernels

10:45-11:45 am

The Future of OpenCL for Graphics and Film Applications on Intel Platforms

2-3 pm

Optimizing Film and Media with OpenCL and Intel Quick Sync Video

3:15-4:15 pm

Efficient Anti-Aliasing on Intel HD graphics

4:30-5:30 pm

The Future of Visual Computing as Viewed by Intel Visual Computing Research Centers

Exhibitor Sessions

Wednesday, 8 August 9 am-5:30 pm

NVIDIA Corporation, Room 503

Explore the impact of GPUs on state-of-the-art CG and interactive design. Join NVIDIA for seven engaging talks and technical deep dives covering everything from advanced ray tracing and rendering to tessellation. Get insight into today's most exciting applications-and a glimpse into the next generation of groundbreaking advancements. Don't miss the unveiling of NVIDIA's latest groundbreaking developer tools.

Exhibitor List As of 11 June

Full Conference Access
Basic Conference Pass
Basic Conference Plus
Computer Animation Festival
Exhibitors
#siggraph #exhibits

3D Consortium
3D Systems
3D3 Solutions
3Dconnexion, Inc.
3dMD
3DVIA
Academy of Art University
ACUTE3D
Addison-Wesley/Pearson
AMD
American Express OPEN
Andersson Technologies LLC
Animation Magazine Inc.
AnimSchool
ARM
ASC-American Cinematographer
Autodesk, Inc.
Avere Systems
Axceleon Inc.
Beijing Enochview Digital Art Co., Ltd.
BOXX Technologies, Inc.
British Columbia Film Commission
Canon Inc.
Cap Digital
Cast Group
cebas Visual Technology Inc.
CentiLeo LLC
Christie Digital Systems
CLO Virtual Fashion, Inc.
Codeplay Software Ltd.
Cogswell College
Computer Graphics World
Costa Rican Animation Industry
CRC Press/AK Peters
Crescent, Inc.
CyberGlove Systems
DAZ 3D
DePaul University College of Computing and Digital Media
DigiPen Institute of Technology
Digital Domain Institute & FSU College of Motion Picture Arts
Digital Media Professionals Inc.
Dimensional Imaging
Drawiz, Inc.
EDGE 3 Technologies, Inc.
Elphel, Inc.
EMC Isilon
emotion3D
Epson America Inc.
Esri
Fixstars Corporation
Focal Press/Morgan Kaufmann
Fusion-io
FXGear, Inc.
Hardcore Processing
Hitachi Data Systems
IATSE
IdN magazine
IEEE Computer Society
Imagination Technologies
Imagineer Systems Ltd.
Infinite Z
IntegrityWare, Inc.
Intel Corporation
Isotropix
John Wiley & Sons, Inc.
JourneyEd
Khronos Group
King Abdullah University of Science and Technology
Korea Creative Content Agency (KOCCA)
Leonar3do International PLC
Lightcraft Technology
LightWorks
Lumiscaphe
Luxion, Inc.
Luxology, LLC
MAXON Computer
Microway, Inc.
Motion Analysis Corporation
Motion Technologies, Inc.
NewTek, Inc.
Next Limit Technologies
NorPix Inc.
NVIDIA Corporation
Objet Geometries Inc.
OC3 Entertainment
Ontario Canada Delegation
OPTIS SAS
OptiTrack
Organic Motion, Inc.
PipelineFx, LLC
PI-VR GmbH
Pixar Animation Studios
Pixologic, Inc.
PNY Technologies
Point Grey Research, Inc.
Pond5, Inc.
Prime Focus World
PS-Tech
Purdue University
Qt Commercial, Digia

Age Requirement
Children under 16 are not permitted in the Exhibition. Age verification is required.

Rate a Reel, LLC
Reallusion Inc.
RenderCloud
Rightware Oy
Ringling College of Art and Design
Ross Video Limited
Savannah College of Art and Design
ScanlineVFX
Shapeways
Shotgun Software, Inc.
Side Effects Software
Smith Micro Software
SoftEther Corporation
SpeedTree
SpheronVR AG
Springer
Steinbichler Vision Systems, Inc.
Stratasys 3D Printers & Production Systems
Studica, Inc.
Tandent Vision Science, Inc.
TechViz
The CGAL Project
The Foundry
The University of the Arts
The3DShop.com
Thinkbox Software Inc.
Tobii Technology Inc.
Toon Boom Animation Inc.
Topaz Labs
Trinity3D.com
Tukatech, Inc.
Ubiquitous Entertainment Inc.
Unity Technologies
VanArts
Vancouver Animation School
Vancouver Film School
VanGogh Imaging
Vicon
Wacom Technology Services, Corp.
Web3D Consortium
Western Digital
WorldViz
Xsens Technologies B.V.
Z Corporation
Zygote Media Group, Inc.

General Information

Age Requirement

Children under 16 are not permitted in the Exhibition. Age verification is required.

Airport Shuttle Bus Discounts

SIGGRAPH 2012 has partnered with Super Shuttle to offer transportation to and from Los Angeles International Airport (LAX).

Shared Ride Van: $13 per passenger (up to 9 passengers)

Town Car Service: $63 per sedan (up to 4 passengers)

These discounted rates are valid from five days before the conference to five days after it concludes.

If you book your shuttle reservation through the SIGGRAPH 2012 website, you earn miles on American Airlines, United Airlines, Delta, and Frontier Airlines.

Book by phone at 800.258.3826 (toll free) or +1.310.222.5500, extension 4. To receive the discount, you must mention the SIGGRAPH 2012 discount code: **PK7AU**.

Bookstore

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 2012 speakers and award winners. To suggest books, CDs, or DVDs that should be available in the bookstore, contact:

Breakpoint Books
dave@breakpointbooks.com

Camera and Recording Policies

No cameras or recording devices are permitted at SIGGRAPH 2012. Abuse of this policy will result in the loss of the individual's registration credentials.

SIGGRAPH 2012 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.

Hotel-Convention Center Shuttle Bus Service

SIGGRAPH 2012 provides complimentary shuttle service between many conference hotels and the Los Angeles Convention Center.

IMPORTANT NOTICE
Attendees who use the SIGGRAPH 2012 hotel reservation system to make reservations at hotels served by the SIGGRAPH 2012 shuttle buses will receive a shuttle wristband when they check in. Attendees who do not book through the SIGGRAPH 2012 reservation system and wish to use the shuttle service can purchase wristbands at the SIGGRAPH Store.

Hotel Reservations

Visit the SIGGRAPH 2012 web site to access the easy-to-use online hotel reservation system, which includes complete information on housing policies, procedures, and rates: www.siggraph.org/s2012

Or contact:
onPeak
SIGGRAPH 2012 Travel Partner
siggraph@onpeakevents.com

SIGGRAPH 2012 has negotiated discount rates for hotels in Los Angeles. These discounts are available to SIGGRAPH 2012 attendees only. Please make your hotel reservation by 9 July 2012. Reservations made after 9 July will be based on availability only, and rates may increase.

Los Angeles Convention Center

1201 South Figueroa Street
Los Angeles, CA 90015

Accessibility
The convention center is handicap accessible. If you have special needs or requirements, please call Conference Management at: +1.312.673.4785.

Food Services
Several restaurants, concessions, and food carts are available throughout the convention center for the convenience of SIGGRAPH 2012 attendees.

Internet Access
Free wireless access is available for SIGGRAPH 2012 in limited areas in the Los Angeles Convention Center.

Parking
SIGGRAPH 2012 attendees can park at the Los Angeles Convention Center or L.A. LIVE Parking Lots:

Los Angeles Convention Center Parking
+1.213.741.1151, ext 5850

L.A. LIVE Parking Lots
+1.213.463.5483

Additional parking information, call:
District Parking Office
+1.213.742.PARK (7275)

Luggage and Coat Check

Luggage and coat-check services ($2 for coat or small handbag and $3 for luggage or large items) are available at the Los Angeles Convention Center from Sunday, 5 August through Thursday, 9 August.

Special Policies

Lost badges cannot be replaced. If you lose your badge, you must purchase a new registration. Technical materials included with your registration must be picked up at the SIGGRAPH 2012 Merchandise Pickup Center. Lost merchandise vouchers will not be replaced.

Access: To be admitted to the Reception, you must have a ticket (your badge does not provide access). Computer Animation Festival access comes with a Full Conference

Included With Your Registration

Registration Categories

- Full Conference Access
- Basic Conference Access
- Basic Conference Plus
- Computer Animation Festival
- Exhibitor

■ ● ✚ ▲ ★	**ACM SIGGRAPH Award Presentations**
■ ● ✚	**ACM SIGGRAPH Award Talks**
■ ● ✚ ★	**Art Gallery**
■	**Art Papers**
■ ● ✚ ▲ ★	**Birds of a Feather**
■ ✚ ▲	**Computer Animation Festival**
■	**Courses**
■ ● ✚ ★	**Emerging Technologies**
■ ● ✚ ▲ ★	**Exhibition**
■ ● ✚ ▲ ★	**Exhibitor Tech Talks**
■ ● ✚ ★	**International Center**
■ ● ✚ ▲ ★	**Job Fair**
■ ● ✚ ▲ ★	**Keynote Speakers**
■	**Panels**
■ ● ✚ ▲ ★	**Posters**
■ ● ✚ ▲	**Real-Time Live!**
■	**Reception**
■	**SIGGRAPH Mobile**
■ ● ✚ ★	**Studio**
■	**Talks**
■	**Technical Papers**
■ ● ✚ ▲	**Technical Papers Fast Forward**

SIGGRAPH Business Symposium is NOT included with SIGGRAPH conference registration packages. This is an additional cost.

See page 55 for pricing information.

Technical Materials

■ Full Conference DVD-ROM

This digital publication contains the electronic version of the Technical Papers, including images and supplemental material; all of the course and tutorial notes, including auxiliary material (movies, source code, HTML presentations); and the permanent record of the Courses, Emerging Technologies, Panels, Posters, Real-Time Live!, SIGGRAPH Dailies!, SIGGRAPH Mobile, Studio Talks, Talks, and the permanent record of the Art Gallery and the Computer Animation Festival.

The DVD is included with all Full Conference registrations, and it is available for purchase at SIGGRAPH 2012. The content of the printed version of the ACM Transactions on Graphics (Conference Proceedings Special Issue) is included on the Full Conference DVD-ROM.

NOTE:
Full Conference registrants must pick up the Full Conference DVD-ROM included with registration at SIGGRAPH 2012 at the Merchandise Pickup Center located in Petree Hall, West Lobby.

The printed *ACM Transactions on Graphics* (Conference Proceedings Special Issue), which contains the Technical Papers and the ACM SIGGRAPH awards is NOT included with any registration category. The Proceedings is available for purchase at SIGGRAPH 2012.

Technical Materials are also available after the conference, contact:

ACM, Member Services
800.342.6626 (Continental US and Canada)
+1.212.626.0500 (International and New York Metro area)
+1.212.944.1318 fax
orders@acm.org

Basic Conference registration does not include any technical materials.

Registration Fees & Information

The printed *ACM Transactions on Graphics* (Conference Proceedings Special Issue) is not included in your registration and may be purchased separately.

Member rates refer to ACM SIGGRAPH membership.

Conference Registration Categories
- ■ Full Conference Access
- ● Basic Conference Access
- ✚ Basic Conference Plus
- ▲ Computer Animation Festival

■ Full Conference Access

	ON OR BEFORE 18 JUNE	ON OR BEFORE 16 JULY	AT SIGGRAPH 2012
ACM SIGGRAPH Member	$895	$1,070	$1,170
Non-Member	$1045	$1,195	$1,320
Student Member	$395	$445	$495

Includes admission to ALL conference programs and events, including the Exhibition (Tuesday-Thursday), Computer Animation Festival, Full Conference DVD-ROM, and reception ticket. Add the SIGGRAPH Business Symposium at a rate of: $175

■ Full Conference One-Day Pass

	ON OR BEFORE 18 JUNE	ON OR BEFORE 16 JULY	AT SIGGRAPH 2012
ACM SIGGRAPH Member	$325	$375	$425
Non-Member	$375	$425	$475
Student Member	$175	$200	$225

Includes admission to ALL conference programs and events, Computer Animation Festival for day(s) attending, and Exhibition (Tuesday-Thursday). Note: Does NOT include reception ticket or Full Conference DVD-ROM. A Computer Animation Festival Full Festival Pass for ALL days can be added at the time of registration, at a discounted fee of $100.

● Basic Conference Access

	ON OR BEFORE 18 JUNE	ON OR BEFORE 16 JULY	AT SIGGRAPH 2012
ACM SIGGRAPH Member	$95	$125	$150
Non-Member	$125	$150	$175

Includes: Admission to Art Gallery, Birds of a Feather, Emerging Technologies, Exhibitor Tech Talks, Keynote Speaker, International Resources, Job Fair, Posters, Real-Time Live!, SIGGRAPH Dailies!, Studio, Technical Papers Fast Forward, and Exhibition (Tuesday-Thursday).
Note: Does NOT include reception ticket, Full Conference DVD-ROM or Computer Animation Festival.

✚ Basic Conference Plus Pass

	ON OR BEFORE 18 JUNE	ON OR BEFORE 16 JULY	AT SIGGRAPH 2012
ACM SIGGRAPH Member	$270	$300	$320
Non-Member	$325	$350	$375
Student Rate	$245	$275	$300

Includes: Admission to Art Gallery, Birds of a Feather, Computer Animation Festival for the week, Emerging Technologies, Exhibitor Tech Talks, Keynote Speaker, International Resources, Job Fair, Posters, Real-Time Live!, SIGGRAPH Dailies!, Studio, Technical Papers Fast Forward, and Exhibition (Tuesday-Thursday). Note: Does NOT include reception ticket or Full Conference DVD-ROM.

● Basic Conference One-Day Pass

PURCHASED BEFORE OR AT SIGGRAPH 2012
$45

Includes admission to Art Gallery, Birds of a Feather, Exhibitor Tech Talks, Emerging Technologies, Keynote Speaker, International Resources, Job Fair, Posters, Real-Time Live!, SIGGRAPH Dailies!, Studio for day(s) attending, and Exhibition (Tuesday-Thursday). Note: Does NOT include reception ticket, Full Conference DVD-ROM or Computer Animation Festival. Add Computer Animation Festival access at the discounted rate of: $175.

▲ Computer Animation Festival

	FULL FESTIVAL PASS	ONE-DAY PASS
ACM SIGGRAPH Member	$175	$50
Non-Member	$200	$50
Student Member	$150	$50

Includes admission to the Birds of a Feather, Computer Animation Festival, Exhibitor Tech Talks, Keynote Speaker, Job Fair, Real-Time Live!, SIGGRAPH Dailies!, Technical Papers Fast Forward and Exhibition (Tuesday-Thursday).

SIGGRAPH Business Symposium

PURCHASE BEFORE OR AT SIGGRAPH 2012
$500 or $175 with the purchase of a Full Conference Week Pass

A full day of frank discussions, networking opportunities, talks, and panels that investigate critical international issues related to intellectual property, venture capital, complex legal systems, and other topics vital to the health and welfare of a global creative community.
The SIGGRAPH Business Symposium is NOT included with SIGGRAPH conference registration packages. This is an additional cost.

SIGGRAPH 2012 Conference Committee

ACM SIGGRAPH is a diverse group of researchers, artists, developers, filmmakers, scientists, and other professionals, who share an interest in computer graphics and interactive techniques. The community values excellence, passion, integrity, volunteerism, and cross-disciplinary interaction.

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Penn State Altoona

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Talley Management Group, Inc.

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