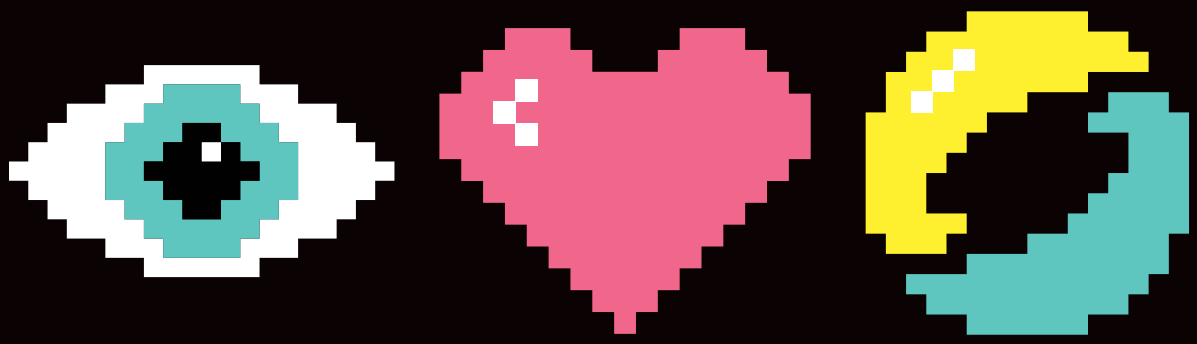
SIGGRAPH2017

AT THE ♥ of COMPUTER GRAPHICS & INTERACTIVE TECHNIQUES



ADVANCE PROGRAM R2

30 JULY – 3 AUGUST

Los Angeles, California

S2017.SIGGRAPH.ORG/REGISTRATION

Sponsored by ACMSIGGRAPH

TABLE OF CONTENTS

curated content

SIGGRAPH 2017 offers several events and sessions that are individually chosen by program chairs to address specific topics in computer graphics and interactive techniques.

Curated content is not selected through the regular channels of a comprehensive jury.

Focus Areas

Many SIGGRAPH 2017 programs and events are assigned to focused areas of interest in computer graphics and interactive techniques, and some are especially appropriate for first-time attendees.

ANIMATION & VFX
AR/VR
ART
EDUCATORS
GAMES
MOBILE
PRODUCTION
RESEARCH

SCHEDULE AT A GLANCE (as of 28 June, schedule subject to change)

Conference Registration Categories

- FP Full Conference Platinum
- F Full Conference
- S Select Conference
- EP Exhibits Plus
- E Exhibitors
- EO Exhibits Only

One Day Registration

Full Conference One Day registration is available. Includes admission to conference programs and events for the day purchased and the Exhibition (Tuesday-Thursday). It does NOT include Computer Animation Festival – Electronic Theater or Reception.

		SAT, 29 JUL	SUN, 30 JUL	MON, 31 JUL	TUE, 1 AUG	WED, 2 AUG	THU, 3 AUG
	Registration	5-7 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-1 pm
	Merchandise Pickup/ SIGGRAPH Store	5-7 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-6 pm	8:30 am-3:30 pm
FP F S	ACM SIGGRAPH Award Talks			2-3:30 pm			
FP F S EP	ACM Student Research Competition Final Presentation					3:45-5:15 pm	
FP F S EP E	Appy Hour					5-7 pm	
FP F S EP E	Art Gallery		1:30-5:30 pm	10 am-5:30 pm	10 am-5:30 pm	10 am-5:30 pm	10 am-3:30 pm
FP F S	Art Papers				3:45-5:55 pm		
FP F S EP E	Birds of a Feather		All week				
FP F	Computer Animation Festival – Electronic Theater			6-8 pm		8-10 pm	
FP F	Computer Animation Festival – VR Theater		2-5 pm (FP only)	10:30 am-5:30 pm	10:30 am-5:30 pm	10:30 am-5:30 pm	10:30 am-3:30 pm
FP F	Courses		9 am-5:15 pm	9 am-5:15 pm	9 am-5:15 pm	9 am-5:15 pm	9 am-5:15 pm
FP F S	Educator's Forum		2-5:15 pm	9 am-5:15 pm	9 am-5:15 pm		
FP F S EP E	Emerging Technologies		1:30-5:30 pm	10 am-5:30 pm	10 am-5:30 pm	10 am-5:30 pm	10 am-3:30 pm
FP F S EP E EO	Exhibition/Exhibitor Sessions				9:30 am-6 pm	9:30 am-6 pm	9:30 am-3:30 pm
FP F S EP E	Experience Presentations		9 am-5:15 pm		9 am-1:45 pm	9 am-5:15 pm	10:45 am-3:30 pm
FP F S EP E	International Center		9 am-6 pm	9 am-6 pm	9 am-6 pm	9 am-6 pm	9 am-3:30 pm
FP F S EP E EO	Job Fair				9:30 am-6 pm	9:30 am-6 pm	9:30 am-3:30 pm
FP F S	Keynote Session*			11 am-12:45 pm			
FP F	Panels		9 am-12:15 pm 3:45-5:15 pm	3:45-5:15 pm	9-10:30 am 2-3:30 pm	9-10:30 am	
FP F S EP E	Posters		1:30-5:30 pm	9:30 am-6 pm	9:30 am-6 pm	9:30 am-6 pm	9:30 am-3:30 pm
FP F S EP E	Poster Sessions			1-2 pm	12:15-1:15 pm	12:15-1:15 pm	
FP F S EP E	Production Gallery		9 am-6 pm	9 am-6 pm	9 am-6 pm	9 am-6 pm	
FP F S	Production Sessions			2-3:30 pm	10:45 am-12:15 pm 2-5:15 pm	10:45 am-12:15 pm 2-7:15 pm	10:45 am-12:15 pm 2-5:15 pm
FP F S EP E EO	Production Session Movie Screening		9-11 pm				
FP F S	Real-Time Live!				6-7:45 pm		
FP F	Reception			8-10 pm			
FP F S EP E	Studio		1:30-5:30 pm	10 am-5:30 pm	10 am-5:30 pm	10 am-5:30 pm	10 am-3:30 pm
FP F	Talks		9 am-5:15 pm	9-10:30 am 2-5:15 pm	9 am-5:15 pm	9 am-3:30 pm	9 am-12:15 pm 3:45-5:15 pm
FP F	Technical Papers			9-10:30 am 3:45-5:35 pm	9 am-5:35 pm	9 am-5:35 pm	9 am-5:15 pm
FP F	Technical Papers Fast Forward		6-8 pm				
FP F S EP E	VR Film Jam		9 am-9 pm	9 am-9 pm	9 am-5 pm		
FP F S EP E	VR Village		1:30-5:30 pm	10 am-5:30 pm	10 am-5:30 pm	10 am-5:30 pm	10 am-3:30 pm

The ACM SIGGRAPH Award Presentation immediately precedes the Keynote Session

REASONS TO ATTEND

Why SIGGRAPH?

While you could add to your skill set in your spare time — studying and navigating industry trends from your home or office computer — there is nothing quite like immersing yourself in a world of cutting-edge computer graphics and interactive techniques. Whether you're in animation, research, product development, or fine arts and design, SIGGRAPH has you covered. See below to find out how you, and your employer, can benefit from attending this year's conference.

"An opportunity to meet and explore the possibilities of technological advancements in the industry from around the world."

"Besides the fact that you get to learn, test, and discover the newest technologies and software, SIGGRAPH gives you a huge inspiration boost. It makes you want to go and do something amazing."

"Think of everything that has ever made you geek out and feel so passionate about something in your whole life and put it into one feeling...That, my friend, is the feeling you get when being at SIGGRAPH."

"It helped me define a direction in my career. The opportunity to meet creators and professionals and see how they work was the most effective way to learn."

"It's like stepping into the future. Nothing is impossible."

"Immersing yourself among such diversity, united by common ideals, is an experience that cannot be replicated or accurately quantified. Its key benefit is leaving thinking if they can, I can!"

CONFERENCE OVERVIEW

SIGGRAPH 2017 is a five-day interdisciplinary educational experience, featuring the world's most prestigious forum for computer graphics research, creative adventures in digital media, immersive realities, emerging interactive technologies, advanced mobile systems, and hands-on opportunities for creative collaboration.

Conference Registration Categories

- FP Full Conference Platinum
- F Full Conference
- S Select Conference
- EP Exhibits Plus
- EO Exhibits Only
- E Exhibitors

One-Day Registration

Full Conference One Day registration is available. This pass includes admission to conference programs and events for the day purchased and the Exhibition (Tuesday-Thursday).

It does NOT include the Computer Animation Festival – Electronic Theater or Reception.

FP F

RECEPTION

Monday, 31 July, 8-10 pm
California Science Center

Board buses with your SIGGRAPH friends as you head to the California Science Center where you'll unlock the power of technology during this very special reception. Food and drink will be scattered throughout the venue for you to enjoy as you explore special exhibitions – including Mission 26: The Big Endeavour, which gives you the chance to see the real Space Shuttle Endeavour! – and permanent exhibitions like Creative World and Ecosystems.

FP F S

ACM SIGGRAPH AWARDS PRESENTATIONS

(Immediately preceding the Keynote Session)

ACM SIGGRAPH 2017 Award Recipients

The Steven Anson Coons Award for Outstanding Creative Contributions to Computer Graphics

Jessica Hodgins
Carnegie Mellon University

The Computer Graphics Achievement Award

Ramesh Raskar
Massachusetts Institute of Technology

ACM SIGGRAPH Outstanding Service Award

Alyn Rockwood

The Significant New Researcher Award

Bernd Bickel
IST Austria

The Distinguished Artist Award for Lifetime Achievement in Digital Art

Ernest A. Edmonds
Institute of Creative Technologies
De Montfort University

The Outstanding Doctoral Dissertation Award

Felix Heide
PhD Advisor: Wolfgang Heidrich
University of British Columbia

FP F S

ACM SIGGRAPH AWARD TALKS

The Steven Anson Coons Award for Outstanding Creative Contributions to Computer Graphics

This award, presented during odd-numbered years, recognizes long-term creative impact to the field of computer graphics through a personal commitment over an extended period of time.

The Computer Graphics Achievement Award

The Computer Graphics Achievement award is given each year to recognize an individual for an outstanding achievement in computer graphics and interactive techniques.

ACM SIGGRAPH Outstanding Service Award

This award is given annually 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.

The Significant New Researcher Award

The Significant New Researcher Award is given 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, through early in their careers, have already made a notable contribution.

The Distinguished Artist Award for Lifetime Achievement in Digital Art

The award is given 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.

The Outstanding Doctoral Dissertation Award

Awarded annually to recognize a recent doctoral candidate who has successfully defended and completed a dissertation in computer graphics and interactive techniques.

FP F S EP

ACM STUDENT RESEARCH COMPETITION FINAL PRESENTATION

Student posters are selected for judging at SIGGRAPH 2017. A panel of distinguished judges selects three semi-finalists in each category (undergraduate and graduate), who present their work to SIGGRAPH 2017 attendees.

FP F S EP E

APPY HOUR

Meet the next generation of mobile applications and their creators at Appy Hour. Interact with developers, and experience tomorrow's mobile media.

FP F S EP E

ART GALLERY

For the first time in SIGGRAPH history, the Art Gallery is dedicated exclusively to showcase works by Latin American artists and designers and presents a selection of speculative artifacts that apply digital technologies to map alternative futures.

FP F S

ART PAPERS

These juried presentations reveal the motivations, thought processes, inspiration, and methodologies behind artists' endeavors at the leading edge of global digital culture.

FP F S EP E

BIRDS OF A FEATHER (BOF)

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

COMPUTER ANIMATION FESTIVAL

Sponsored by Walt Disney Animation Studios

FP F **Electronic Theater**

FP F **VR Theater**

High-tech projection of the finest achievements in animated feature and short films, games, advertising, visual effects, real-time effects, real-time graphics, and scientific visualization.

For SIGGRAPH 2017, the Computer Animation Festival is moving beyond the flat screen to present short films and experiences in a new space, the VR Theater, where attendants will experience the next generation of storytelling in virtual reality.

FP F

COURSES

Instructional sessions in which you will learn new concepts and skills. Courses range from an introduction to the foundations of computer graphics and interactive techniques for those new to the field to advanced instruction on the most current techniques and topics.

FP F S

EDUCATOR'S FORUM

This year's Educator's Forum is Cross-Disciplinary Collaborations. Sessions include panels on existing and planned cross-disciplinary programs, and the future of CGEMS, the Computer Graphics Educational Materials Source, sponsored by the SIGGRAPH Education Committee. Talk sessions explore cross-disciplinary collaborations and courses on current topics like GPU Hardware Fundamentals.

FP F S EP E

EMERGING TECHNOLOGIES

Test-dive the latest interactive and graphic technologies before they transform the way we live and work. Emerging Technologies presents hands-on demonstrations of research from a wide variety of disciplines, including automotive systems, displays, input devices, and wearable technology.

FP F S EP EO E

EXHIBITION

The largest, most comprehensive exhibition of hardware systems, software tools, and creative services in the computer graphics and interactive marketplace. Established industry leaders and emerging challenges display, discuss, and demonstrate the products, systems, techniques, ideas, and inspiration that are creating the digital future.

FP F S EP EO E

EXHIBITOR SESSIONS

SIGGRAPH 2017 exhibitors demonstrate software, hardware, and systems; answer questions; and host one-on-one conversations about how their applications improve professional and technical performance.

FP F S EP E

EXPERIENCE PRESENTATIONS

Informal presentations on new ideas that are applicable to techniques, concepts, and strategies related to the Experience Hall programs: Art Gallery, Emerging Technologies, Studio, and VR Village.

FP F S EP E

INTERNATIONAL RESOURCES

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

FP F S EP EO E

JOB FAIR

Looking for an opportunity? Interested in meeting with some inspiring companies? Discover your future at SIGGRAPH 2017. In the Job Fair, attendees connect with employers before, during, and after the conference via the CreativeHeads.net job board and candidate profiling system.

FP F S

KEYNOTE SESSION

Monday, 31 July, 11 am-12:45 pm

SIGGRAPH 2017 is honored to have Floyd Norman, the first African-American animator to work for Walt Disney Animation Studios, as its keynote speaker. This keynote session will be in an interview format, allowing you to come and hear about the life and career of this Disney legend.

FP F

PANELS

Expert panelists share experiences, opinions, insights, speculation, disagreement, and controversy with each other and the audience.

FP F S EP E

POSTERS

In-progress research, student projects, and late-breaking work ranging from applications of computer graphics to in-depth analysis of a specific subject. During Poster Presentations, authors discuss their work with attendees.

FP F S

PRODUCTION SESSIONS

Hear how the most elite and talented computer graphic experts and creative geniuses explain their processes and techniques for creating compelling content.

FP F S

REAL-TIME LIVE!

An interactive extravaganza that celebrates real-time achievements at the intersection of ingenious technical skills and creative beauty, Real-Time Live! showcases the latest trends and techniques for pushing the boundaries of interactive visuals.

FP F S EP E

STUDIO

Explore new tools, applications, and methods to create, craft, build, and share. New this year: "Cyborg Self", a broad range of concepts related to the convergence of the physical body and evolving technologies with an emphasis on wearables, e-texibles, bio-tech, and sensory extensions across physical and virtual platforms. Attend Studio Workshops that educate attendees on state-of-the-art processes and workflow pipelines.

FP F

TALKS

Explore the latest in-progress developments and how they will be implemented in graphics production or other fields.

FP F

TECHNICAL PAPERS

These prestigious juried presentations are the most influential international scientific events in computer graphics and interactive techniques.

FP F

TECHNICAL PAPERS FAST FORWARD

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.

FP F S EP E

VR FILM JAM SPECIAL EVENT

New for SIGGRAPH 2017: VR Film Jam, where teams convert their animated shorts to interactive VR experiences. The goal is to demonstrate how great linear content can be turned into great interactive VR content.

FP F S EP E

VR VILLAGE

Explore real-time immersion in tomorrow's virtual and augmented realities for exploring new modes of communication, interaction, and powering real–world applications in health, education, design, and gaming.

COMING IN JULY

SIGGRAPH 2017 MOBILE APP

- *manage your schedule*
- *interact with attendees*
- *grow your network*

CONFERENCE SCHEDULE

Registration/Merchandise Pickup Center/SIGGRAPH Store

Saturday, 29 July	5-7 pm
Sunday, 30 July	8:30 am-6 pm
Monday, 31 July	8:30 am-6 pm
Tuesday, 1 August	8:30 am-6 pm
Wednesday, 2 August	8:30 am-6 pm
Thursday, 3 August	8:30 am-1 pm [Note: The Merchandise Pickup Center and SIGGRAPH Store closes at 3:30 pm.]

Schedule is subject to change.

SUNDAY, 30 JULY

9-10:30 am
Experience Presentation: VR/AR & Optics

Panel: Mobile GPU's What's Next?

Panel: State and Future of Hair in Feature Film and Visual Effects

Talks: The Art of Production

9 am-12:15 pm
Course: Production-Volume Rendering

Course: Applications of Visual Perception to Virtual Reality Rendering

9 am-6 pm
International Center

Exhibitor Session: NVIDIA Spotlights: Best of GTC and NVIDIA Research

Production Gallery

9 am-9 pm
VR Film Jam

10-11 am
ACM SIGGRAPH Theater Event:
BOF: The International Collegiate Virtual Reality Contest (IVRC)

10:45 am-12:15 pm
Course: An Introduction to Laplacian Spectral Distances and Kernels: Theory, Computation, and Applications

Course: Computational Narrative

Experience Presentations: Experimental Realities

Talks: Industrial Light & Magic's Visual Development and Effects Simulation for Marvel Studio's "Doctor Strange"

Talks: It's Complicated

11:30 am-12:30 pm
ACM SIGGRAPH Theater Event:
CG in Australasia - Developing Links Between Industry and Higher Education in CG

1:30-5:30 pm
Art Gallery

Emerging Technologies

Posters

Studio

VR Village

2-3 pm
ACM SIGGRAPH Theater Event:
SIGGRAPH in Japanese + Japan CG Showcase

2-3:30 pm
Course: Material Capture and Representation With Applications in Virtual Reality

Educator's Forum: Education Committee Open Forum

Experience Presentations: Body & Mind in VR

Talks: Effects Omelette

Talks: Game On

2-5 pm (FP only)
Computer Animation Festival - VR Theater

2-5:15 pm
Course: Computing and Processing Correspondences with Functional Maps

Course: Physically Based Shading in Theory and Practice

Studio Workshop: Hands-on: Rapid Interactive Application Prototyping for Media Arts and Stage Performance

3-4:30 pm
ACM SIGGRAPH Theater Event:
Open Forum of the ACM SIGGRAPH Digital Arts Community

3:45-5:15 pm
Educator's Forum: Educators Meet and Greet

Experience Presentations: Explorations in E-Textiles and Circuit Constructing Methods

Panel: Emotion & Affect in VR

Panel: The Academy's Science and Technology Council Presents "Hidden Figures" in Collaboration with NASA

Talks: Catching Light

Talks: I Like to Move It, Move It

4:30-5:30 pm
ACM SIGGRAPH Theater Event:
SIGGRAPH for Beginners - General View

6-8 pm
Technical Papers Fast Forward

9-11 pm
Production Session Movie Screening

MONDAY, 31 JULY

9-10 am
ACM SIGGRAPH Theater Event:
BOF: Undergraduate Research Alliance

9-10:30 am
Educator's Forum Panel: Industry Perspectives: Preparing Students for Careers

Talks: Hair It Is!

Talks: The Art of Visual Journey

Technical Papers: Imaginative Imaging

Technical Papers: Mappings and Deformations

Technical Papers: Learning to Move

9-10:45 am
Screening: An Animated Life Screening with Floyd Norman

9 am-12:15 pm
Special Session: Advances in Real-Time Rendering, Part I

9 am-6 pm
International Center

Exhibitor Session: NVIDIA Spotlights: Best of GTC and NVIDIA Research

Production Gallery

9 am-9 pm
VR Film Jam

9:30 am-6 pm
Posters

10-11 am
ACM SIGGRAPH Theater Event:
CG in Asia - Inside the Asian CG Industry

10 am-5:30 pm
Art Gallery

Emerging Technologies

Studio

VR Village

10:30 am-5:30 pm
Computer Animation Festival - VR Theater

11 am-12:45 pm
Keynote Session

1-2 pm
Poster Sessions

1:30-3 pm
ACM SIGGRAPH Theater Event: BOF: ACM SIGGRAPH Cartographic Visualization

2-3:30 pm
ACM SIGGRAPH Award Talks

Course: Communicating Science Through Visualization in the Age of Alternative Facts

Panel: AR and VR Futures

Panel: CGEMS: Computer Graphics Education Material

Production Session: The Making of Disney's "Beauty and the Beast"

Studio Workshop: A Processing Primer for Artists

Talks: Wet and Wild

2-5:15 pm
Course: Multithreading for Visual Effects

Special Session: Advances in Real-Time Rendering, Part II

3:30-4:30 pm
ACM SIGGRAPH Theater Event: Recapturing our Past: Archiving SIGGRAPH's History

3:45-5:15 pm
Educator's Forum Discussion: CGEMS Working Group

Panel: CGIStudio: Thirty Years, One Renderer

Studio Workshop: Troubleshooting and Cleanup Techniques for 3D Printing

Talks: Lite Brite

3:45-5:35 pm
Technical Papers: Get More Out of Your Photo

Technical Papers: People Power

Technical Papers: Comparing 3D Shapes and Parts

4:30-6 pm
ACM SIGGRAPH Theater Event: BOF: Shenzhen & Los Angeles Chapters Meetup

6-8 pm
Computer Animation Festival – Electronic Theater

8-10 pm
SIGGRAPH 2017 Reception

9 pm-2 am
ACM SIGGRAPH Chapters Party (Location: Exchange LA)

TUESDAY, 1 AUGUST

9-10 am
Exhibitor Session: Microsoft - Driving Machine Learning and Computer Vision Algorithm Through Synthetic Data

9-10:30 am
Course: Rethinking Texture Mapping

Educator's Forum Panel: Curriculum Matters: Melding Art + Computer Science

Experience Presentations: Augmented Reality

Panel: History of the JPL Computer Graphics Lab

Talks: It's a Material World

Technical Papers: Clever Solids

Technical Papers: Being Discrete About Geometry Processing

9-11 am
ACM SIGGRAPH Theater Event: BOF: Immersive Visualization for Science, Research and Art - International

9 am-Noon
Studio Workshop: Animal Drawing With Gary Geraths and "Tiny"

9 am-12:15 pm
Course: Applying Color Theory to Digital Media and Visualization

9 am-5 pm
VR Film Jam

9 am-6 pm
International Center

Production Gallery

9:30 am-6 pm
Exhibition

Exhibitor Sessions

Job Fair

Posters

10-11:30 am
Exhibitor Session: Pixar - Women of Pixar Panel

10 am-5:30 pm
Art Gallery

Emerging Technologies

Studio

VR Village

10:30-11:30 am
Exhibitor Session: Microsoft - Future of Studios & VFX in the Cloud

10:30 am-5:30 pm
Computer Animation Festival - VR Theater

10:45 am-12:15 pm
Educator's Forum Talks: SIGCSE Reprise

Experience Presentation: Immersive VR Production

Production Session: Stories the Ocean Tells Us: The Making of "Moana"

Studio Workshop: WebAR: Creating Augmented Reality Experiences on Smart Glasses and Mobile Device Browsers

Talks: Making Waves

Talks: UIST Reprise at SIGGRAPH 2017

Technical Papers: Reflectance & Scattering

10:45 am-12:35 pm
Technical Papers: Color & Compositing

Technical Papers: Fabricating Curves, Surfaces & Volumes

11 am-12:30 pm
ACM SIGGRAPH Theater Event: Special Session of the ACM SIGGRAPH Digital Arts Community — "Immersive Expressions: Virtual Reality on the Web"

12:15-1:15 pm
Poster Sessions

12:15-1:45 pm
Experience Presentations: Artist Talks: Counter-Artifacts

12:30-1:30 pm
Exhibitor Session: Qualcomm - Profiling VR Games and Applications for Optimum Performance

1-2 pm
ACM SIGGRAPH Theater Event: Women in CG

Exhibitor Session: Pixar - How to Create a Compelling Demo Reel

2-3 pm
ACM SIGGRAPH Theater Event: Fantastic Student Portfolio Showcase

Exhibitor Session: Panasas, Inc. - Parallel Storage Scaling for Emerging Render Challenges

2-3:30 pm
Reception: Leonardo, Art Papers and Art Gallery

Educators Forum: Concerning Collaboration

Panel: The Academy's Scientific and Technical Awards: The Technology, the Awardees, and the Process

Production Session: Crazy Eight: The Making of a Race Sequence in Disney/Pixar's "Cars 3"

Studio Workshop: Comparing Screen Printing and Direct-to- Garment Technologis using Digital Workflows

Talks: IEEE TVCG Session on Advances in Virtual and Augmented Reality

Talks: Interdisciplinary Circus

2-3:30 pm (continued)
Technical Papers: Fluid Control & Synthesis

Technical Papers: Learning & Analysis for Geometry

Technical Papers: Rendering in Path Space

2-5:15 pm
Course: Directional-Field Synthesis, Design, and Processing

Special Session: Open Problems in Real-Time Rendering

3-3:45 pm
Exhibitor Session: Pixar - Open Source at Pixar: OpenTimelineIO

Exhibitor Session: Intel - Steal Our Secrets: Pixar's Journey to Take Renderman to New Levels of Performance

3:30-4:30 pm
ACM SIGGRAPH Theater Event: CG in Latin America: "Encontro dos brasileiros" - Brazilian Meeting

Exhibitor Session: Qumulo - Resolving Storage Plan

3:45-5:15 pm
Educator's Forum Course: GPU Hardware Fundamentals

Exhibitor Session: Intel - Steal our Secrets: Pixar's Journey to Take Renderman to New Levels of Performance

Production Session: Industrial Light & Magic Presents: Behind the Magic, The Visual Effects of Rogue One: A Star Wars Story

Studio Workshop: Pursuing Perfect Color

Talks: IEEE TVCG Session on Advance in Data Visualization

Talks: VR/AR To Go

3:45-5:35 pm
Technical Papers: Reconstructing 3D Surfaces From Points, Lines, Images & Water

Technical Papers: Dynamic Fabrication

3:45-5:55 pm
Art Papers Session

4-6 pm
Exhibitor Session: Pixar - Open Source at Pixar: USD and OpenSubdiv

4:30-5:30 pm
ACM SIGGRAPH Theater Event: CG in Latin America

Exhibitor Session: Intel - Slashing Open Shading Language Render Times with a SIMD Scalable Architecture

5-6 pm
Exhibitor Session: Microsoft - Secure Burst Rendering to the Microsoft Cloud

6-7:45 pm
Real-Time Live!

6-8 pm
Pioneer Reception (For Pioneer members only)

WEDNESDAY, 2 AUGUST

9-10 am
ACM SIGGRAPH Theater Event: BOF: Massive Collaborative Animation Project

Exhibitor Session: Intel - Slashing Open Shading Language Render Times with a SIMD Scalable Architecture

9-10:30 am
Experience Presentations: It's All (VR) Fun & Games

Talks: Alt. Workflows

Technical Papers: Time to Focus

Technical Papers: Global Parameterization

Technical Papers: Speech and Facial Animation

9 am-Noon
Studio Workshop: Animal Drawing With Gary Geraths and "Tiny"

9 am-12:15 pm
Course: Path Tracing in Production - Part 1: Production Renderers

9 am-6 pm
International Center

Production Gallery

9:30-10:30 am
Exhibitor Session: Pixar - A Collaboration Between Pixar's Creative and Technical Worlds

9:30 am-6 pm
Exhibition

Exhibitor Sessions

Job Fair

Posters

10-11 am
ACM SIGGRAPH Theater Event: ACM SIGGRAPH Chapters Business Meeting

10 am-5:30 pm
Art Gallery

Emerging Technologies

Studio

VR Village

10:30 am-5:30 pm
Computer Animation Festival - VR Theater

10:45-11:45 am
Exhibitor Session: Intel - Steal our Secrets: Pixar's Journey to Take Renderman to New Levels of Performance

Exhibitor Session: Pixar - Reel Reviews

10:45 am-12:15 pm
Production Session: Behind the Headset: The Making of Google Spotlight Stories' "Son of Jaguar," "Sonaria," and Oculus Story Studios' "Dear Angelica"

Studio Workshop: Real-Time Cinematics & Storytelling

Talks: Make Me a Design

Talks: Procedural With Caution

10:45 am-12:35 pm
Experience Presentations: Touching Holograms, Several Approaches

Technical Papers: Rendering Systems

Technical Papers: Fluids II

Technical Papers: Image Texture & Completion

11 am-12 pm
ACM SIGGRAPH Theater Event: Professional and Student Chapters Startup Meeting

12:15-1:15 pm
Poster Sessions

12:30-1:30 pm
Exhibitor Session: Intel - Intel® RealSense™ Technology in Virtual Reality

Exhibitor Session: Qualcomm - Developing AR Applications for ODG's AR Glasses

12:30-2 pm
ACM SIGGRAPH Theater Event: BOF: ISEA International - Open Forum

2-2:40 pm
Computer Animation Festival: Electronic Theater Director Q&A

2-3 pm
ACM SIGGRAPH Theater Event: BOF: DCAJ Presentation "Industrial Application of Content Technology in Japan"

Exhibitor Session: Intel - StudioCloud: VFX Render with Intel® Performance Tuning

Exhibitor Session: The Qt Company - Behind the Scenes and Beyond Your Imagination With Qt

2-3:30 pm
Experience Presentations: Artist Talks: Biocybernetic Speculations

Production Session: Valerian and the City of Thousand Planets

Talks: It's Alive! Alternative Immersions

Technical Papers: Rendering Volumes

Technical Papers: Meshing

Technical Papers: Sound & Elastics

2-5:15 pm
Course: Path Tracing in Production - Part 2: Making Movies

Course: Build Your Own VR Display: An Introduction to VR Display Systems for Hobbyists and Educators

Studio Workshop: Knitted Finger Sensors

2:50-3:30 pm
Computer Animation Festival: VR Theater Director Q&A

3-4 pm
ACM SIGGRAPH Theater Event: VR in Europe + Russia

3:15-4:15 pm
Exhibitor Session: Intel - Embree Ray Tracing Kernels - Recent Improvements and New Features

3:30-4:30 pm
Exhibitor Session: Microsoft - Past and Future: The Journey From Static to Elastic Infrastructure

3:45-5:15 pm
ACM Student Research Competition Final Presentation

Experience Presentations: The Art & Science of VR

Experience Presentations: Artist Talks: Unsettled Machinery

Production Session: Games of Thrones: Building and Destroying Meereen

3:45-5:35 pm
Technical Papers: Deep Image Processing

Technical Papers: Fabricating Look & Feel

Technical Papers: Sketching & Curves

4-5 pm
ACM SIGGRAPH Theater Event: CG in Africa + Middle East

4:30-5:30 pm
Exhibitor Session: Intel - OSPRay - A Ray Tracing Based Rendering Engine for High Fidelity Rendering and Visualization

5-6 pm
ACM SIGGRAPH Theater Event: Silicon Valley Kids: Get-Together for Young Entrepreneurs

5-7 pm
Appy Hour

5:45-7:15 pm
Production Session: Sony Pictures Imageworks Celebrating 25 Years of Innovation, Imagination, and Creativity

8-10 pm
Computer Animation Festival – Electronic Theater

THURSDAY, 3 AUGUST

9-10 am
ACM SIGGRAPH Theater Event: Join the IRC in 2017!

Exhibitor Session: Intel - Introduction to Artificial Intelligence - The Next Evolution for Usage Opportunities in Graphics and VR

9-10:30 am
Course: OpenVDB

Talks: Pipe Dreams

Talks: Realities of VR Production

Technical Papers: Video

Technical Papers: Simulation for Virtual Worlds

Technical Papers: Random Sampling

9 am-12:15 pm
Course: Video for Virtual Reality

9 am-3:30 pm
International Center

9:30 am-3:30 pm
Exhibition

Exhibitor Sessions

Job Fair

Posters

10 am-3:30 pm
Art Gallery

Emerging Technologies

Studio

VR Village

10:30 am-3:30 pm
Computer Animation Festival - VR Theater

10:45-11:45 am
Exhibitor Session: Intel - OSPRay - A Ray Tracing Based Rendering Engine for High Fidelity Rendering and Visualization

10:45-11:55 am
Technical Papers: Human Motion

10:45 am-12:15 pm
Experience Presentations: Materialization of Motion, Levitation, and Magnetics

Production Session: Blizzard Entertainment Presents: the Making of the "Overwatch Animated Shorts"

Talks: Partly Crowdy

Talks: Tools of the Trade

10:45 am-12:35 pm
Technical Papers: Fluids III

Technical Papers: Image and Light Field Manipulation

12:30-2 pm
ACM SIGGRAPH Theater Event: CG in Canada

1-2 pm
Exhibitor Session: Intel - Intel® RealSense™ Technology in Virtual Reality

2-3:30 pm
Experience Presentations: Augmented Self, New Interaction

Production Session: The Making of Marvel Studio's Spider-Man Homecoming

Studio Workshop: Getting Your Monitor and Inkjet Print to Match – Color Management and Printing

Technical Papers: Computational Cameras & Displays

Technical Papers: Let's Get in Contact

Technical Papers: Faces & Hair

2-5:15 pm
Course: VR Interactions

Course: An Interactive Introduction to WebGL and three.js

Course: Business 101 for CG and HCI Professionals

2:30-3:30 pm
Exhibitor Session: Intel - Embree Ray Tracing Kernels - Recent Improvements and New Features

3:45-5:15 pm
Production Session: The Making of Marvel Studio's "Guardians of the Galaxy Vol. 2"

Talks: Don't Be Scared – It's Only Math

Talks: Physical Exe Stuff

Technical Papers: Work It, Make It Better, Stronger

4-5 pm
Exhibitor Session: Introduction to Artificial Intelligence - The Next Evolution for Usage Opportunities in Graphics and VR

MOBILE

APPY HOUR

FP F S EP E

Wednesday, 2 August, 5-7 pm

Appy Hour celebrates innovation, creativity, and know-how, where attendees interact with the developers and experience the next generation of mobile media.

Visit s2017.siggraph.org

Expresii Watercolor

Expresii combines state-of-the-art watercolor simulation and hybrid vector-raster rendering to provide the most natural water-based painting experience.

Nelson Chu

FlexR – Control Technology With Your Muscle

FlexR is an open-API wearable neuromuscular sensor, which detects even the slightest muscle activity during a movement in real-world context.

Li "Ricky" Ge
Fox Cheng
Joseph Miao
Healer Tech, Inc.

infltr: Infinite Filters

infltr is a new type of photo app with an infinite number of filters to make mobile photography more intuitive. There are over seven million filters to explore.

Philippe Levieux
Nick Pelling
infltr

Mobile Image Stylization Combining Neural Style Transfer and Filtering

This mobile app combines neural-style transfers with user-controlled state-of-the-art image filtering to interactively transform photos into artistic renditions. The results feature characteristics of famous artworks, simulate the appeal of traditional media such as oil paint and watercolor, and can be exported at full image resolution.

Amir Semmo
Universität Potsdam

Mandy Klingbeil
Universität Potsdam, Digital Masterpieces GmbH

Jürgen Döllner
Matthias Trapp
Universität Potsdam

Oblique: A New Way to Photograph

Oblique is a real-time camera app that allows users to apply creative filters and adjustments to live camera views. The powerful interactive filters allow users to touch and manipulate the camera's view directly and in creative new ways. With Oblique, there is no post-production.

Masood Kamandy
Pasadena City College

EDUCATORS

Pete and The Orange Fox

With hand-crafted, digitized images and an original story, this app uses the mobile space to arouse children's curiosity, imagination, and love of language and narrative, and encourage active, engaged readers.

C.A. MacFinn
CGMuse

Snaptric: Perfect Group Selfie and Group Shot

Snaptric uses a new high-tech seam technique enabling users to effortlessly replace faces in their group photos. It does not simply replace the face. It makes a nice seam through the original and replacement photos so that the new face blends seamlessly with the background.

Sarita Dev
Maurits Kelder
DEVART, the Netherlands

ART curated content

ART GALLERY

UNSETTLED ARTIFACTS: TECHNOLOGICAL SPECULATIONS FROM LATIN AMERICA

FP F S EP E

For the first time in SIGGRAPH history, the Art Gallery is dedicated exclusively to works by Latin American artists and designers. The Art Gallery emphasizes the power of the poetics of technological speculation and shares new insights on how Latin American artists create, adapt, and use technology to critically engage our present and to map alternative futures and imagine new possible worlds.

Image Credit: Dispersiones © 2017 Leo Nuñez

Art Gallery Hours

Sunday, 30 July . . . . . 1:30-5:30 pm
Monday, 31 July . . . . . 10 am-5:30 pm
Tuesday, 1 August . . . . . 10 am-5:30 pm
Wednesday, 2 August . . . . . 10 am-5:30 pm
Thursday, 3 August . . . . . 10 am-3:30 pm

Leonardo

A special issue of *Leonardo, The Journal of the International Society of the Arts, Sciences and Technology* includes visual documentation of the works exhibited in the Art Gallery. Publication of this special issue coincides with SIGGRAPH 2017.

ART

FP F S EP E

RECEPTION: *LEONARDO*, ART PAPERS, AND ART GALLERY

Tuesday, 1 August, 2-3:30 pm

Mix and mingle with artists, researchers, and authors whose works were selected for SIGGRAPH 2017. Meet the *Leonardo* team and members of the SIGGRAPH 2017 committee who organized this year's Art Gallery.

Sponsored by Leonardo/ISAST *and The MIT Press*

The MIT Press

LEONARDO
THE INTERNATIONAL SOCIETY FOR THE ARTS, SCIENCES AND TECHNOLOGY

ART curated content

FP F S EP E

EXPERIENCE PRESENTATIONS

Tuesday, 1 August, 12:15-1:45 pm

Artist Talks: Counter-Artifacts
Moderator: Nao Bustamante, University of Southern California
Artists: Astrovandalistas; Marcela Armas and Arcángelo Constantini; Gisela Motta

Wednesday, 2 August, 2-3:30 pm

Artist Talks: Biocybernetic Speculations
Moderator: Maria Fernandez, Cornell University
Artists: Gilberto Esparza; Paul Rosero Contreras; Hamilton Mestizo

Wednesday, 2 August, 3:45-5:15 pm

Artist Talks: Unsettled Machinery
Moderator: Andres Burbano, Universidad de los Andes
Artists: Leo Nuñez; Mariela Yeregui; Christian Oyarzún; Rodolfo Peraza

BioSoNot 1.2

BioSoNot 1.2 is a hybrid bio-sound instrument that translates biological activity into sound as it cleans contaminated water samples. It generates music and noise from the biological activity of living microorganisms inhabiting the LA River. A series of custom-made microbial fuel cells (biosensors) captures and harvests electrons produced by the metabolic processes of bacteria and is fired as energy into an oscillator that expresses the information as sound, generating an organic symphony of bacterial life.

Gilberto Esparza (Mexico)

Milpa Polímera

Inspired by the conflicting relationship between the market-driven economy of maize and its deep symbolic and cultural values in Mexico, Milpa Polímera is a 3D printer modified to function as a tractor that plants infertile seeds made of polylactic acid, a thermoplastic biopolymer produced from a patented strain of corn. The machine is trapped in an absurd and perverse cycle that contradicts the very origins of corn: a plant domesticated about 10,000 years ago by a collective civilization whose cosmogony and culture saw it as a shared source of life.

Marcela Armas and Arcángelo Constantini (Mexico)

Echolocalizator

Echolocalizator is a cybernetic helmet that recreates physical reality within a biofeedback system, translating sensory stimuli into a new language for human interpretation. It proposes a "virtualized reality" where visible phenomena are reinterpreted into synthesized sounds that generate new cognitive associations and perceptive experiences. By simulating the echolocation sonar used by animals like bats and dolphins, it highlights the essential role of technology in the co-evolution of humans and animals, and creates a perception-bending, environment-transforming portal to a world that simultaneously exists and does not exist.

Hamilton Mestizo (Colombia)

The Andean Pavilion

The Andean Pavilion is a series of 3D-printed sculptures based on recordings of seismic waves at four active volcanoes in the highlands of Ecuador and the Galápagos Islands. Sound devices recorded the volcanic activity, and custom software converted the data to computational 3D models. The result is a series of hybrid objects and a fictional video that reenact a momentary encounter among a volcano, a human, and a machine in settings where human-environmental dynamics are constantly redefined.

Paul Rosero Contreras (Ecuador)

Imaginario Inverso (Reverse Imaginary)

Astrovandalistas is a translocal collective that applies creative intervention, technological activism, urban hacking, and open-source knowledge to explore the industrialization of our social imagination. At SIGGRAPH 2017 they will open a new office where they will be using their 'future-glyphic' alphabet and laser communication system to engrave predictions and micro-narratives onto rocks and city debris collected from the greater Los Angeles area. Using conceptual prototyping, futurecasting, and technology reappropriation, *Imaginario Inverso* proposes different frameworks for reflecting on the geopolitics of technology development and the reinterpretation of technologies for more personal uses.

Astrovandalistas (Mexico, Brazil)

JailHead.com

Rodolfo Peraza explores the interiors of abandoned historical spaces designed for social engineering. JailHead.com uses internet surveillance technology to recreate one of the best panopticon buildings in the world: el Presidio Modelo, an abandoned prison in Isla de la Juventud, Cuba. As participants in this multi-player virtual-reality "game" become "inmates" identified by their IP addresses, they realize that we are all prisoners of the 21st century's international system of observation and control.

Rodolfo Peraza (Cuba)

Sisyphean Octopods

Octópodos Sisíficos (Sisyphean Octopods) is a group of six mobile robots that carry LCD screens displaying endoscopic videos with images that resemble internal body organs. The robots move erratically, without any purpose except to reveal their own technological animality; they display a corporeal behavior that is artificial and organic, material and phenomenological, exposing their own absurd existence as "living" artificial objects. Like Sisyphus, condemned to perform a laborious and futile task *ad eternum*, these mytho-technological beings were created to carry an image of themselves, and with that to define their own fate and identity.

Mariela Yeregui and Miguel Grassi (Argentina)

Developed by the Artes Electrónicas Group and supported by UNTREF, Universidad Nacional de Tres de Febrero.

Anti-Horário (CounterClockwise)

Anti-Horário is a video installation and "wall clock" that addresses the cyclical movement of human existence, and the poetics of duration and perception. It combines several layered elements (the earth, a child, an adult couple, and the sky) moving at distinct cadences, registered from the same point of view, resulting in a disorienting analog clock that uncannily proceeds at a unified pace representing the passage of time as well as the cycle of life.

Gisela Motta and Leandro Lima (Brazil)

drumCircle[]

drumCircle[] is an autonomous instrument composed of eight connected den-den drums mounted to LED spotlights to create a temporal and spatial network of machine-viewer interactions. Arranged in a circle pointing inward toward the center of the installation, these modules project light and sound patterns bidirectionally to create an immersive and ritualistic technological experience that illuminates how space and time are shaped by technology. They create relationships of dominance and meaning between subjects and objects, modifying our cognitive processes and the symbolic relationships we create with our environment.

Christian Oyarzún (Chile)

Dispersiones

Dispersiones is a physical network comprised of a series of interconnected relays that produce an artificial and interactive soundscape. The work appears to be a messy web of hundreds of tangled wires through which sounds travel, following an algorithm of artificial life. Using only the metallic clicking sound of the relays, the network behaves as a complex system of electromagnetic actuators that interact with the viewer. Each individual relay acts as a "living" agent that activates the space and the architecture. Once a viewer's movement is detected, the system unleashes an infinite flow of sound and light.

Leo Nuñez (Argentina)

ART PAPERS

FP F S

Art Papers investigate the roles of artists and the methods of art-making in an increasingly global, networked, and technologically mediated world. Art Papers contribute to our understanding of the history of art, inform contemporary artistic and critical practices, and anticipate and stimulate future trajectories.

Best Art Paper Award
New for SIGGRAPH 2017 the Best Art Paper Award recognizes excellence in contributions to the literature on digital arts, computer graphics, and/or interactive techniques.

The winner will be announced during the Art Papers Session, Tuesday, 1 August, 3:45 pm.

Image Credit: Creature Interactions: A Social Mixed Reality Playspace © 2017 Andrew Bluff, Andrew Johnston, University of Technology Sydney

Leonardo

In collaboration with Leonardo/ISAST, 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. Publications of this special issue coincide with SIGGRAPH 2017.

ART

FP F S EP E

RECEPTION: *LEONARDO*, ART PAPERS, AND ART GALLERY

Tuesday, 1 August, 2-3:30 pm

Mix and mingle with artists, researchers, and authors whose works were selected for SIGGRAPH 2017. Meet the *Leonardo* team and members of the SIGGRAPH 2017 committee who organized this year's Art Gallery.

Sponsored by Leonardo/ISAST *and The MIT Press*

The MIT Press

LEONARDO
THE INTERNATIONAL SOCIETY FOR THE ARTS, SCIENCES AND TECHNOLOGY

ART PAPERS SESSION

Tuesday, 1 August, 3:45-5:55 pm

Lenticular Waterwheels: Simultaneous Kinetic and Embedded Animation

In a remote mountain river in France, a kinetic sculpture powered by natural energy played custom animation on printed lenticulars and struggled through violent storms, lightning strikes, and torrential hail to become one of the medium's largest displays and a lesson in metal fabrication, site dynamics, and multilayered animation.

Scott Hessels
City University of Hong Kong

The Interactive Image: A Media Archaeology Approach

This paper examines the history of the influential Interactive Image computer graphics showcase, which took place at museums and conferences throughout 1987 and 1988. It explores the historical contexts that led to the creation of this exhibition, which included the integrated efforts of artists and computer scientists.

Esteban Garcia Bravo
Purdue University

Andres Burbano
Universidad de los Andes

Vetria Byrd
Purdue University

Angus Forbes
University of Illinois at Chicago

Transforming the Commonplace Through Machine Perception: Light-Field Synthesis and Audio-Feature Extraction in the Rover Project

Rover is a mechatronic imaging device and real-time audio/visual installation that employs light-field synthesis and machine listening to create a generative hybrid between photography and cinema. This paper describes the mechatronic, machine perception, audio/visual synthesis, and compositional techniques developed for the piece.

Robert Twomey
Youngstown State University

Michael McCrea
University of Washington

Autoencoding Blade Runner: Reconstructing Films With Artificial Neural Networks

"Blade Runner—Autoencoded" is a film made by training a neural network to watch the film "Blade Runner" several times and then reinterpret it. The film is the first of this kind, and it has since been exhibited in art galleries and museums around the world.

Terence Broad
Mick Grierson
Goldsmiths, University of London

Avoid Setup: Insights and Implications of Generative Cinema

This paper explores generative cinema by presenting the thought-provoking projects that exemplify approaches toward cinema in generative art. In a discussion of the aspects of the artists' creative thinking, it shows that cognitive tensions between film and generative art have significant expressive, intellectual, and ethical implications that could benefit both fields.

Dejan Grba
University of Arts in Belgrade

Creature Interactions: A Social Mixed-Reality Playspace

Creature:Interactions is a large-scale immersive and interactive artwork based on the ecologically driven children's book Dot and the Kangaroo. It features full-bodied expressive interaction in a social mixed-reality environment presented in stereoscopic 3D. The immersive visuals have elicited a phantom sensory effect in certain participants.

Andrew Bluff
Andrew Johnston
University of Technology Sydney

COMPUTER ANIMATION FESTIVAL

FP F #SIGGRAPHcaf

The leading annual festival for the world's most innovative, accomplished, and amazing digital film and video creators. 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. > WATCH TRAILER

Image Credit: Moving Picture Company, Dougual Wilson (United Kingdom)

FP F

Each session features a small group of contributing directors who share insider information about themselves, their films, and their processes.

ELECTRONIC THEATER DIRECTOR Q&A

Wednesday, 2 August, 2-2:40 pm

VR THEATER DIRECTOR Q&A

Wednesday, 2 August, 2:50-3:30 pm

ELECTRONIC THEATER

Monday, 31 July, 6-8 pm
Wednesday, 2 August, 8-10 pm

Analogue Loaders
official selection

Freelance
Raphael Vangelis
United Kingdom

ASTERIA
official selection

École Supérieure des Métiers Artistiques
ESMA School

Alexandre Arpentinier, Mathieu Blanchys, Lola Grand, Tristan Lamarca, Thomas Lemaille, Jean-Charles Lusseau
France

Canal Kitchen
official selection

Unit Image
Maxime Luère
Leon Berelle
Dominique Boidin
Remi Kozyra
France

Elemental
official selection

Filmakademie Baden-Württemberg
Adrian Meyer
Germany

Final Fantasy XV – Omen Trailer
official selection

Digic Pictures
István Zorkóczy
Hungary

Fortnite: From Husk Till Dawn!
curated content

Epic Games
Gavin Moran, Michael Clausen
United States

Garden Party
Best Student Project
official selection

MOPA
Théophile Dufresne, Florian Babikian, Gabriel Grapperon, Lucas Navarro, Vincent Bayoux, Victor Caire
France

Happy Valentine's Day
official selection

Neymarc Visuals
Neymarc Brothers
United States

ILM VFX – Kong: Skull Island
curated content

Industrial Light & Magic
John Vogt-Roberts
United States, Canada

ILM VFX – Rogue One: A Star Wars Story
curated content

Industrial Light & Magic
Gareth Edwards
United States, United Kingdom, China, Canada

John Lewis Buster the Boxer
Jury's Choice
official selection

Moving Picture Company
Dougual Wilson
United Kingdom

Lou
curated content

Pixar Animation Studio
Dave Mullens
United States

MPC Presents: The Jungle Book
official selection

Moving Picture Company
Jon Favreau
United States

Our Wonderful Nature – The Common Chameleon
official selection

LUMATIC GmbH & Co. KG
Tomer Eshed
Germany

Pirate Smooch
official selection

Filmakademie Baden-Württemberg
Tobias Trebeljahr
Germany

Polius
official selection

ISART Digital
Guillaume Auberval, Léa Dozoul, Simon Gomez, Timothé Hek, Hugo Lagrange, Antoine Laroye, David Lashcari
France

Résistance
official selection

MOPA
Alex Chauvet, Anna Le Danois, Quentin Foulon, Fabien Glasse, Juliette Jean, Julie Narat
France

Scrambled
official selection

Polder Animation
Bastiaan Schravendeel
Netherlands

Seasonal Changes in Carbon Dioxide
official selection

Scientific Visualization Studio – NASA/GSFC
Gregory Shirah
Horace Mitchell
United States

Sirocco
official selection

MOPA
Avril Hug, Lauren Madec, Kevin Tarpinian, Thomas Lopez, Romain Garcia
France

Song of a Toad
Best in Show
official selection

Filmakademie Baden-Württemberg
Kariem Saleh
Germany

The Human Race
official selection

The Mill, Chevrolet, Epic Games
Rama Allen, Westley Sarokin
United Kingdom

Weta Digital VFX – Guardians of the Galaxy Vol. 2
curated content

Walt Disney Pictures, Marvel Entertainment
James Gunn
New Zealand

Weta Digital VFX – Valerian and the City of a Thousand Planets
curated content

EuropaCorp
Luc Besson
New Zealand

Weta Digital VFX – War for the Planet of the Apes
curated content

20th Century Fox
Matt Reeves
New Zealand

VR THEATER

Sunday, 30 July, 2-5 pm (FP only)
Monday, 31 July, 10:30 am-5:30 pm
Tuesday, 1 August, 10:30 am-5:30 pm
Wednesday, 2 August, 10:30 am-5:30 pm
Thursday, 3 August, 10:30 am-3:30 pm

Arden's Wake
official selection

Penrose Studios
Eugene Chung
United States

Chocolate
official selection

Gentle Manhands
Tyler Hurd
United States

Dear Angelica
official selection

Oculus Story Studio
Saschka Unseld
United States

Fantasynth
official selection

HelloEnjoy
Carlos Ulloa
United Kingdom

Rainbow Crow
official selection

Baobab Studios
Eric Darnell
United States

Son of Jaguar
official selection

Google ATAP
Jorge Gutierrez
United States

Sonaria
official selection

Google ATAP
Scot Stafford, Chromosphere
United States

The Antarctica Series: Under a Cracked Sky
curated content

The New York Times
Graham Roberts, Jonathan Corum
United States

We Wait
official selection

Aardman Animations
Dan Efergan
United Kingdom

Zero Days VR
official selection

Scatter
Yasmin Elayat
United States

StudioXperience

StudioXperience at SIGGRAPH 2017 will feature cutting-edge technology demonstrations, a large-scale VR experience and a wide range of guests during our live broadcast. Join us in-studio during the broadcasts.

COURSES

FP F

Instruction, insight, and inspiration from academic and industry experts. SIGGRAPH 2017 Courses deliver invaluable learning opportunities in three levels of difficulty (introductory, intermediate, and advanced).

Full Conference Platinum and Full Conference registration allows attendees access to all SIGGRAPH 2017 Courses.

Seating is on a first-come, first-served basis. Please arrive early for the Courses you wish to attend.

Also visit the Studio Workshops which are open to: FP F S EP E.

GAMES *curated content*

SPECIAL SESSIONS

Advances in Real-Time Rendering, Part I

Monday, 31 July, 9 am-12:15 pm

INTERMEDIATE

Modern video games employ a variety of sophisticated algorithms to produce groundbreaking 3D rendering that pushes the visual boundaries and interactive experience of rich environments. This course presents state-of-the-art and production-proven rendering techniques for fast, interactive rendering of complex an engaging virtual worlds.

Organizer
Natalya Tatarchuk
Unity Technologies

Advances in Real-Time Rendering, Part II

Monday, 31 July, 2-5:15 pm

INTERMEDIATE

Phase Two of a course on state-of-the-art and production-proven rendering techniques for fast, interactive rendering of complex and engaging virtual worlds.

Open Problems in Real-Time Rendering

Tuesday, 1 August, 2-5:15 pm

INTERMEDIATE

Leading industry experts and researchers discuss the top unsolved problems in real-time rendering, why current solutions don't work in-practice, the desired ideal solution, and the problems that need to be solved to work toward that ideal.

Organizers
Natalya Tatarchuk
Unity Technologies

Aaron Lefohn
NVIDIA Research

SUNDAY, 30 JULY

PRODUCTION

Production-Volume Rendering

Sunday, 30 July, 9 am-12:15 pm

INTERMEDIATE

This course provides an overview of production-volume rendering, focused on path tracing. It describes practical fundamentals for adding volume rendering to an existing path tracer, reviews a complete range of volume-integration scenarios and techniques, and describes in detail recent production-proven techniques for optimizing volume rendering.

Julian Fong
Pixar Animation Studios

Ralf Habel
Walt Disney Animation Studios

Magnus Wrenninge
Pixar Animation Studios

Christopher Kulla
Sony Pictures Imageworks

AR/VR

Applications of Visual Perception to Virtual Reality Rendering

Sunday, 30 July, 9 am-12:15 pm

INTERMEDIATE

This in-depth review of perceptual methods in modern virtual reality introduces attendees to human visual perception and the psychophysical methods used to study it. Then it presents three case studies that leverage perceptual insights in improving quality, performance, and immersion in VR experiences.

Anjul Patney
Joohwan Kim
NVIDIA Corporation

Marina Zannoli
Oculus VR

George-Alex Koulieris
Inria, Université Côte d'Azur

Gordon Wetzstein
Stanford University

Frank Steinicke
Universität Hamburg

An Introduction to Laplacian Spectral Distances and Kernels: Theory, Computation, and Applications

Sunday, 30 July, 10:45 am-12:15 pm

ADVANCED

This introductory course on the Laplacian spectral kernels and distances focuses on their definition, computation, and applications to shape analysis.

Giuseppe Patane
L'istituto di Matematica Applicata e Tecnologie Informatiche

ANIMATION & VFX EDUCATORS

Computational Narrative

Sunday, 30 July, 10:45 am-12:15 pm

INTRODUCTORY

A summary of recent progress in developing computer-assisted solutions for authoring free-form, interactive animated narratives.

Mubbasir Kapadia
The Walt Disney Company, Rutgers University

Steven Poulakos
Disney Research

Markus Gross
ETH Zürich, Disney Research

Robert W. Sumner
Disney Research

AR/VR

Material Capture and Representation With Applications in Virtual Reality

Sunday, 30 July, 2-3:30 pm

INTRODUCTORY

This course introduces the problem of material capture and representation for computer graphics, including volumetric models (fabric). It discusses characteristics of current BRDF and more complex functions limiting their use in VR. A case study highlights the importance of being able to render materials in high quality in a VR pipeline.

Giuseppe Claudio Guarnera
Norwegian University of Science and Technology

Abhijeet Ghosh
Imperial College London

Ian Hall
Mashhuda Glencross
Yulio Technologies Inc.

Dar'ya Guarnera
Norwegian University of Science and Technology, Loughborough University

RESEARCH

Computing and Processing Correspondences with Functional Maps

Sunday, 30 July, 2-5:15 pm

INTERMEDIATE

This course introduces techniques for computing and processing correspondences between geometric objects, such as 3D shapes, images, or point clouds based on the functional-map framework. It summarizes the mathematical background, computational methods and various applications of functional maps.

Maks Ovsjanikov
Ecole Polytechnique

Michael Bronstein
Emanuele Rodolà
University of Lugano

Leonidas Guibas
Stanford University

Mirela Ben-Chen
Technion - Israel Institute of Technology

Etienne Corman
Ecole Polytechnique

Frederic Chazal
Inria

Alex Bronstein
Technion - Israel Institute of Technology

GAMES PRODUCTION RESEARCH

Physically Based Shading in Theory and Practice

Sunday, 30 July, 2-5:15 pm

INTERMEDIATE

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

Stephen McAuley
Ubisoft Entertainment SA

Stephen Hill
Lucasfilm Ltd.

Alejandro Conty
Sony Pictures Imageworks

Michal Drobot
Infinity Ward, Inc.

Eric Heitz
Unity Technologies

Christophe Hery
Pixar Animation Studios

Christopher Kulla
Sony Pictures Imageworks

Junyi Lang
Pixar Animation Studios

Jon Lanz
DreamWorks Animation

Adam Micciulla
Independent

Ryusuke Villemin
Pixar Animation Studios

Nathan Walster
Framestore Limited

Feng Xie
DreamWorks Animation, Stanford University

MONDAY, 31 JULY

ANIMATION & VFX EDUCATORS PRODUCTION

Communicating Science Through Visualization in the Age of Alternative Facts

Monday, 31 July, 2-3:30 pm

INTRODUCTORY

Cinematic scientific visualization demystifies complex scientific concepts for general audiences, which helps them defend themselves against misinformation in popular media. Researchers from the University of Illinois present techniques for representing data accurately while making it not only approachable, but also beautiful and compelling, to experts and non-experts alike.

Kalina Borkiewicz
AJ Christensen
National Center for Supercomputing Applications, University of Illinois at Urbana Champaign

John Stone
Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana Champaign

Multithreading for Visual Effects

Monday, 31 July, 2-5:15 pm

ADVANCED

A summary of multithreading solutions employed by diverse experts in solving scalability problems in the games and visual effects industries. Topics include threading, vectorization, tools, debugging techniques, and optimization and performance-profiling approaches.

James Reinders
Independent

Andy Lin
Joe Longson
Walt Disney Animation Studios

Jeff Lait
Side Effects Software Inc.

Florian Zitzelsberger
Pixar Animation Studios

Martin De Lasa
Autodesk, Inc.

George ElKoura
Pixar Animation Studios

TUESDAY, 1 AUGUST

RESEARCH

Rethinking Texture Mapping

Tuesday, 1 August, 9-10:30 am

ADVANCED

The intrinsic problems of standard texture mapping in UV-maps and seams are well known, but often considered unavoidable. This course reviews various radically different ways to rethink texture mapping that have been proposed over decades, each offering different advantages and trade-offs.

Marco Tarini
Università dell'Insubria, Varese, ISTI - CNR

Cem Yuksel
University of Utah

Syvlain Lefebvre
Inria Sophia Antipolis

EDUCATORS

Applying Color Theory to Digital Media and Visualization

Tuesday, 1 August, 9 am-12:15 pm

INTRODUCTORY

This course examines the foundations of color theory and how they apply to building effective digital media. It defines color harmony and presents case studies that feature infographics and time-series animations, and it demonstrates online and mobile apps for color analyses.

Theresa-Marie Rhyne
Independent Consultant

Directional-Field Synthesis, Design, and Processing
Tuesday, 1 August, 2-5:15 pm
INTERMEDIATE

This introduction to the key aspects of design and analysis of directional fields (fields with varying sets of vectors per point) discusses their limitations and provides an extensive guide to their use in practical situations in computer graphics and geometric design.

Amir Vaxman
Universiteit Utrecht

Marcel Campen
New York University

Olga Diamanti
Stanford University

David Bommes
Rheinisch-Westfälische Technische Hochschule Aachen

Klaus Hildebrandt
Technische Universiteit Delft

Mirela Ben-Chen
Technion - Israel Institute of Technology

Daniele Panozzo
New York University

WEDNESDAY, 2 AUGUST

Path Tracing in Production - Part 1: Production Renderers
Wednesday, 2 August, 9 am-12:15 pm
ADVANCED

Increasing demands for realism in computer-generated images mean that more and more movies are created with physically based renderers. This course introduces technical directors, artists, and researchers to the architecture and novel possibilities of the next generation of production renderers.

Luca Fascione
Johannes Hanika
Weta Digital Ltd

Marcos Fajardo
Solid Angle S.L.

Per Christensen
Pixar Animation Studios

Brent Burley
Walt Disney Animation Studios

Brian Green
DreamWorks Animation

Path Tracing in Production - Part 2: Making Movies
Wednesday, 2 August, 2-5:15 pm
ADVANCED

Many different takes on practical deployment of path tracing have emerged in recent years. This course introduces technical directors, artists, and researchers to the novel workflows applied in several large production facilities.

Luca Fascione
Johannes Hanika
Weta Digital Ltd

Rob Pieke
Moving Picture Company

Christopher Kulla
Sony Pictures Imageworks

Christophe Hery
Ryusuke Villemin
Pixar Animation Studios

Daniel Heckenberg
Animal Logic

Andre Mazzone
Industrial Light & Magic

Thorsten Schmidt
Lightrig GmbH

EDUCATORS

Build Your Own VR Display: An Introduction to VR Display Systems for Hobbyists and Educators
Wednesday, 2 August, 2-5:15 pm
INTRODUCTORY

This comprehensive introduction to VR/AR technology teaches how to build a head-mounted display from scratch. Topics include the graphics pipeline, stereo rendering, lens distortion, head-orientation tracking with inertial measurement units, positional tracking, spatial sound, and cinematic VR content creation.

Gordon Wetzstein
Robert Konrad
Nitish Padmanaban
Hayato Ikoma
Stanford University

THURSDAY, 3 AUGUST

OpenVDB
Thursday, 3 August, 9-10:30 am
INTERMEDIATE

An overview of the compact-volume data structure and various tools available in the open-source library OpenVDB. Since its release in 2012 it has set an industry standard and has been used for visual effects in over 80 feature movies.

Ken Museth
Jeff Budsberg
DreamWorks Animation

Rick Hankins
Industrial Light & Magic

Todd Keeler
Dan Bailey
Double Negative

Rama Hoetzlein
NVIDIA Corporation

AR/VR

Video for Virtual Reality
Thursday, 3 August, 9 am-12:15 pm
INTERMEDIATE

This course looks at how the dynamic appearance of the real world can be captured with video and brought to life with unparalleled realism and immersion through virtual reality technology. It explores the technical foundations, current practices, and future of video in VR from technical, production, and artistic viewpoints.

Christian Richardt
University of Bath

James Tompkin
Brown University

Jordan Halsey
VR Playhouse

Aaron Hertzmann
Adobe Systems Incorporated

Jonathan Starck
Foundry

Oliver Wang
Adobe Systems Incorporated

AR/VR

VR Interactions
Thursday, 3 August, 2-5:15 pm
INTRODUCTORY

When VR is done well, experiences can be brilliant and pleasurable, but when it's done badly, frustration, fatigue, and sickness can result. This course discusses the most essential concepts of perception and action, comfort, input device classes, design tradeoffs, hand interaction, and development patterns that yield successful VR interaction design.

Jason Jerald
NextGen Interactions

Richard Marks
Sony Corporation

Joseph LaViola
University of Central Florida

EDUCATORS

An Interactive Introduction to WebGL and three.js
Thursday, 3 August 2-5:15 pm
INTRODUCTORY

WebGL and three.js are the two most popular APIs for developing three-dimensional applications that run in a browser. This course provides an introduction to application programming with these two related, but different methods.

Edward Angel
University of New Mexico

Eric Haines
Autodesk Inc.

curated content

Business 101 for CG and HCI Professionals
Thursday, 3 August, 2-5:15 pm
INTRODUCTORY

Whether you are a researcher or TD who wants to build a business, or better understand business decision making, this course provides an overview of the core elements needed for a viable business case from basic business acumen, through different models to fundable concept, and the traps to watch for.

Evan Hirsch,
Engine Co. 4 LLC

Bernard Mangold
Incubation Partners, Inc.

EDUCATOR'S FORUM

FP F S

Educators from computer science, art, design, and more discuss graphics curricula, academic-industrial partnerships, evolving pedagogical models, and strategies for successful collaborations across disciplines.

EDUCATORS

FP F

ADDITIONAL EDUCATOR-FOCUSED SESSIONS

Please note these two sessions are for Full Conference Platinum and Full Conference registrations only.

Panel: CGEMS: Computer Graphics Educational Materials
Monday, 31 July, 2-3:30 pm

Andrew Duchowski
Clemson University

Edward Angel
University of New Mexico

Bruce Gooch
Texas A&M University

David Luebke
NVIDIA Corporation

Talks: Interdisciplinary Circus
Tuesday, 1 August, 2-3:30 pm

INTERDISCIPLINARY STUDY OF REFLECTANCE TRANSFORMATION IMAGING PROCESSES FOR THE CREATION OF NORMAL MAP LIBRARIES FROM HIGH-RESOLUTION SCAN DATA

David Halbstein
Nitin Sampat
Martin Pietras
Rochester Institute of Technology

3D ACROSS MEDIA: CERAMICS, PRINT AND VR

Julieta Aguilera
Plymouth University

Jonathon Goebel
Monika Mann
University of Hawaii

IS THIS POSSIBLE? MASSIVE ONLINE INTERINSTITUTIONAL STUDENT PRODUCTION

Miho Aoki
University of Alaska Fairbanks

William Joel
Western Connecticut State University

Anna Ursyn
University of Northern Colorado

Jacob Pollak
Ferris State University

SUNDAY, 30 JULY

Education Committee Open Forum
Sunday, 30 July, 2-3:30 pm

The Education Committee hosts a presentation and informal discussion about its activities and mission, and how to become involved. Sessions from the SIGGRAPH 2017 Education Focus are highlighted.

SESSION LEAD
Ginger Alford
ACM SIGGRAPH Education Committee Chair

Educators Meet and Greet
Sunday, 30 July, 3:45-5:15 pm

Meet and mingle with other SIGGRAPH educators in an informal setting. Get to know your fellow educators over snacks.

SESSION LEAD
Erik Brunvand
ACM SIGGRAPH 2017 Education Liaison

MONDAY, 31 JULY

Educator's Forum Panel: Industry Perspectives: Preparing Students for Careers
Monday, 31 July, 9-10:30 am

Industry representatives from various sub-disciplines in the area of computer graphics and interactive techniques discuss the preparation, education, training, and attributes students need to enter the workforce, looking at both short-term and long-term needs to provide opportunities and flexibility.

SESSION LEAD
Glenn Goldman
New Jersey Institute of Technology

PANELISTS
Daryl Clewlow
Nordeus

Patricia Kung
Animal Logic

Roula Lainas
Zoic Studios

Douglas Lanman
Oculus Research – Oculus/Facebook

Educator's Forum Discussion - CGEMS Working Group
Monday, 31 July, 3:45-5:15 pm

Continuation of the discussion about the proposed CGEMS repository of computer graphics educational material. Topics include action items and plans for SIGGRAPH 2018.

SESSION LEAD
Andrew Duchowski
Clemson University

TUESDAY, 1 AUGUST

Educator's Forum Panel: Curriculum Matters: Melding Art + Computer Science
Tuesday, 1 August, 9-10:30 am

Many universities and colleges, particularly those represented at SIGGRAPH, include digital media classes in their computer science curricula, coding courses in the art curriculum, or programs that combine both art and computer science. Panelists discuss their universities' approaches to multi-disciplinary work.

SESSION LEAD
Susan Reiser
University of North Carolina at Asheville

PANELISTS
Erik Brunvand
University of Utah

Phill Conrad
University of California, Santa Barbara

Courtney Starrett
Seton Hall University

Casey Reas
University of California, Los Angeles

Educator's Forum Talks: SIGCSE Reprise
Tuesday, 1 August, 10:45 am-12:15 pm

Selected papers from SIGCSE 2017 reprised at SIGGRAPH 2017.

A MODERN WEARABLE-DEVICES COURSE FOR COMPUTER SCIENCE UNDERGRADUATES

Chris Gregg
Stanford University

Raewyn Duvall
Kate Wasynczuk
Tufts University

CREATIVITY IN AUTHENTIC STEAM EDUCATION WITH EARSKETCH

Shelly Engelman
The Findings Group

Brian Magerko
Georgia Institute of Technology

Tom McKlin
Morgan Miller
The Findings Group

Doug Edwards
Jason Freeman
Georgia Institute of Technology

MAKING NOISE: USING SOUND-ART TO EXPLORE TECHNOLOGICAL FLUENCY

(BEST PAPER, SIGCSE 2017)

Erik Brunvand
Nina McCurdy
University of Utah

COMPUTER SCIENCE OUTREACH WITH END-USER ROBOT-PROGRAMMING TOOLS

Vivek Paramasivam
Justin Huang
Sarah Elliott
Maya Cakmak
University of Washington

Educator's Forum Course: GPU Hardware Fundamentals
Tuesday, 1 August, 3:45-5:15 pm

This course walks attendees through the fundamentals of GPU hardware and compares system-on-chip vs. discrete GPUs in terms of performance and capabilities, including a detailed look at what happens in each functional block of the GPU and why.

SESSION LEAD
John Lawless
Tara Technical Training

EMERGING TECHNOLOGIES

FP F S EP E

See, learn, touch, and try the state of the art in human-computer interaction and robotics. Emerging Technologies presents work from many sub-disciplines of interactive techniques, with a special emphasis on projects that explore science, high-resolution digital-cinema technologies, and interactive art-science narratives.

Image Credit: 'Real Baby - Real Family' - Age controllable VR avatar from 2D face images; Yuya Mochizuki, Akihiko Shirai and Rex Hsieh, Kanagawa Institute of Technology

Emerging Technologies Hours

Sunday, 30 July . . . . . 1:30-5:30 pm
Monday, 31 July . . . . . 10 am-5:30 pm
Tuesday, 1 August . . . . . 10 am-5:30 pm
Wednesday, 2 August . . . . . 10 am-5:30 pm
Thursday, 3 August . . . . . 10 am-3:30 pm

Adaptive Dynamic Refocusing: Toward Solving Discomfort in Virtual Reality

This approach to reducing discomfort in virtual reality eliminates the vergence-accommodation conflict, a fundamental flaw that affects all commercial headsets available today.

Pierre-Yves Laffont
Ali Hasnain
Lemnis Technologies Pte. Ltd.

Altered Touch: Miniature Haptic Display With Force, Thermal, and Tactile Feedback for Augmented Haptics

Altered Touch can be used to alter the haptic properties of real objects by rendering projected visual and haptic feedback.

Takaki Murakami
Tanner Person
Charith Lasantha Fernando
Kouta Minamizawa
Keio University

AoEs: Enhancing Teleportation Experience in Immersive Environments With Mid-Air Haptics

With this new haptics technology that augments multiple tactile sensations in immersive environments, users receive visual, auditory, and tactile feedback via a steerable mid-air haptics device and a head-mounted display.

Ping-Hsuan Han
Chiao-En Hsieh
Yang-Sheng Chen
Jui-Chun Hsiao
National Taiwan University

Yi-Ping Hung
National Taiwan University

Kong-Chang Lee
Sheng-Fu Ko
Tamkang University

Kuan-Wen Chen
National Chiao Tung University

Chien-Hsing Chou
Tamkang University

atmoSphere: Designing Cross-Modal Music Experiences Using Spatial Audio With Haptic Feedback

This immersive music experience combines spatial audio and haptic feedback to simulate a large sound environment.

Haruna Fushimi
Daiya Kato
Youichi Kamiyama
Kazuya Yanagihara
Kouta Minamizawa
Kai Kunze
Keio University

Bottomless Joystick 2

With a motor-powered gimbal mechanism, a counterweight, and an inertial measurement unit, this interface makes a virtual anchoring point in midair, where it provides a haptic sensation similar to that of a conventional joystick.

Yuichiro Katsumoto
National University of Singapore

Cardiolens: Remote Physiological Monitoring in a Mixed=Reality Environment

Cardiolens is a novel system that allows users to view "hidden" physiological signals (blood flow and vital signs) in real time by simply looking at the people around them.

Daniel McDuff
Microsoft Research

Christophe Hurter
École nationale de l'aviation civile

Demo of FaceVR: Real-Time Facial Reenactment and Eye-Gaze Control in Virtual Reality

This novel method for gaze-aware facial reenactment applies a robust algorithm, and a new approach to eye tracking, to perform real-time facial motion capture of an actor wearing a head-mounted display.

Justus Thies
Friedrich-Alexander-Universität Erlangen-Nürnberg

Michael Zollhoefer
Max-Planck-Institut für Informatik

Marc Stamminger
Friedrich-Alexander-Universität Erlangen-Nürnberg

Christian Theobalt
Max-Planck-Institut für Informatik

Matthias Nießner
Technische Universität München, Stanford University

DIY Position Tracking Add-On for Mobile AR/VR

This DIY add-on integrates position tracking on mobile VR devices to distribute therapeutic content. Attendees can build their own controllers and participate in mindfulness exercises.

Fangwei Lee
Realiteer Corp.

GVS RIDE: A Novel Experience Using Head-Mounted Display and Four-Pole Galvanic Vestibular Stimulation

GVS RIDE delivers realistic experiences using a synchronized four-pole GVS and a head-mounted display.

Kazuma Aoayma
Daiki Higuchi
Kenta Sakurai
Taro Maeda
Hideyuki Ando
Osaka University

HangerON: A Belt-Type Human Walking Controller Using the Hanger Reflex Haptic Illusion

This walking maneuvering method uses the Hanger Reflex, an illusory phenomenon caused by haptic stimulus, to manipulate walking direction.

Yuki Kon
Takuto Nakamura
Hiroyuki Kajimoto
Rei Sakuragi
Hirotaka Shionoiri
Seitaro Kaneko
The University of Electro-Communications

HangerOVER: HMD-Embedded Haptics Display With Hanger Reflex

HangerOVER is an HMD-embedded haptics display that provides both tactile and force senses using the Hanger Reflex.

Yuki Kon
Takuto Nakamura
Hiroyuki Kajimoto
Yasuyuki Yamaji
Taha Moriyama
The University of Electro-Communications

Hapbeat: Single DOF Wide-Range Wearable Haptic Display

With this 1-DOF haptic display, users feel strong percussive smashes, powerful bass pressures, and high-fidelity vibrations of acoustic instruments.

Yusuke Yamazaki
Hironori Mitake
Ryuto Oda
Hsueh-Han Wu
Shoichi Hasegawa
Tokyo Institute of Technology

Minatsu Takehoshi
Yuji Tsukamoto
Testuaki Baba
Tokyo Metropolitan University

HaptoCloneAR: Mutual Haptic-Optic Interactive System With Superimposed 2D Image

With this system, two users interact through various applications such as videophones, fighting games, and other entertainment options with haptic feedback.

Kentaro Yoshida
Yuuki Horiuchi
Seki Inoue
Yasutoshi Makino
Hiroyuki Shinoda
The University of Tokyo

curated content

Headset Removal, Virtual Reality, and People Detection

Most VR experiences require users to wear headset, but they occlude the face and block eye-gaze. This project virtually "removes" the headset and reveals the face underneath it, creating a realistic see-through effect. Using a combination of 3D vision, machine learning, and graphics techniques, the system synthesizes a realistic, personalized 3D model of the user's face to reproduce the user's appearance, eye gaze, and blinks. With person-detection and pose-estimation technology, the system can simultaneously detect and track body and face keypoints of multiple people in the scene.

Vivek Kwatra
Christian Frueh
Avneesh Sud
George Papandreou
Google, Inc.

Infinite Stairs: Simulating Stairs in Virtual Reality Based on Visuo-Haptic Interaction

Infinite Stairs is a novel visuo-haptic technique that simulates the sensation of walking up and down stairs in a virtual environment, even though users walk on a flat surface in a real space.

Ryohei Nagao
Keigo Matsumoto
Takuji Narumi
Tomohiro Tanikawa
Michitaka Hirose
The University of Tokyo

Membrane AR: Varifocal, Wide-Field-of-View Augmented Reality Display From Deformable Membranes

This augmented-reality display employs novel deformable membrane mirrors to create virtual imagery at a desired depth level within a wide field of view with the promise of a more comfortable user experience.

David Dunn
Cary Tippets
Kent Torell
University of North Carolina at Chapel Hill

Petr Kellnhofer
Max-Planck-Institut für Informatik

Kaan Akşit
NVIDIA Research

Piotr Didyk
Universität des Saarlandes, Max-Planck-Institut für Informatik

Karol Myszkowski
Max-Planck-Institut für Informatik

David Luebke
NVIDIA Research

Henry Fuchs
University of North Carolina at Chapel Hill

curated content

Merge Cube

Meet the world's first holographic object you can hold in the palm of your hand. With the award-winning Merge Cube, you can play, learn, and explore in magical new ways. Download apps using your tablet or smartphone, and watch the cube come to life!

Jeremy Kenisky
Merge VR

MetaLimbs: Multiple Arms Interaction Metamorphism

MetaLimbs adds two artificial arms to the human body and maps them to legs motions with haptic feedback. Arm functions can be customized to achieve new kinds of interactions from an egocentric point of view.

Tomoya Sasaki
MHD Yamen Saraiji
Charith Lasantha Fernando
Kouta Minamizawa
Keio University

Masahiko Inami
The University of Tokyo

Mid-Air Interaction With a 3D Aerial Display

This volumetric display enables mid-air interaction with 3D renderings without requiring a head-mounted apparatus. It employs interaction techniques that provide haptic feedback and mitigate occlusion conflicts between the hand and the virtual volume during direct manipulation.

Seth Hunter
Intel Corporation

Dave MacLeod
Derek Disanjh
MistyWest

Jonathan Moisant-Thompson
Ron Azuma
Intel Corporation

Non-Line-of-Sight MoCap

The first non-line-of-sight sensing system that offers real-time tracking of objects hidden from the camera by an occluder. It uses an off-the-shelf intensity camera instead of expensive time-of-flight hardware.

Jonathan Klein
Matthias Hullin
Universität Bonn

Martin Laurenzis
Institut franco-allemand de recherches de Saint-Louis

Christoph Peters
Universität Bonn

curated content

OrbeVR: A Handheld Concave Spherical Virtual Reality Display

A handheld concave spherical perspective-corrected display. OrbeVR displays the combined images projected by multiple calibrated high-performance laser pico projectors, inside a translucent sphere.

Olavo Belloc
Mario Nagamura
Douglas Fonseca
Andre Rodrigues
Diego Souza
Universidade de São Paulo

Celso Kurashima
Universidade Federal do ABC

Marcio Almeida
Eduardo Zilles Borba
Roseli De Deus Lopes
Marcelo Zuffo
Universidade de São Paulo

Real Baby - Real Family: Age-Controllable VR Avatar From 2D Face Images

Real Baby - Real Family realizes age-inverse generation of baby portraits from any two 2D images for illustration, photos, or a combination of both.

Rex Hsieh
Yuya Mochizuki
Takaya Asano
Marika Higashida
Akihiko Shirai
Kanagawa Institute of Technology

curated content

Sky Magic

This next-generation entertainment system uses flying machines to create audio-visual performances in the sky. Controlled by a single terminal, a swarm of drones equipped with LED lights is programmed to fly in formation in a designated space.

Hitomi Takahashi
MicroAd, Inc.

curated content

Stretchable Transducers for Kinesthetic Interactions in Virtual Reality

Robert Shepherd
Bryan Peele
Benjamin Mac Murray
Jose Barreiros
Cornell University

Omer Shapira
Josef Spjut
David Luebke
NVIDIA Corporation

Submerged Haptics: A 3-DOF Fingertip Haptic Display Using Miniature 3D Printed Airbags

This novel method of creating a waterproof wearable fingertip haptic display is very light and small enough to fit on the fingertip.

Yuan-Ling Feng
Charith Lasantha Fernando
Jan Rod
Kouta Minamizawa
Keio University

Touch Hologram in Mid-Air

Touch Hologram in Mid-Air provides a touch feeling without any mechanical equipment in the visualization area. It is unique in giving physical presence to intangible objects.

Julien Castet
Cédric Kervegant
Felix Raymond
Delphine Graeff
Immersion SAS

TwinCam: Omni-Directional Stereoscopic Live-Viewing Camera-Reducing Motion Blur During Head Rotation

This omni-directional stereoscopic live viewing camera system was developed to reduce motion blur and latency during head rotation of remote users wearing a head-mounted display. Two omni-directional cameras are mounted on a movable rig to provide real-time parallax.

Kento Tashiro
Toi Fujie
Yasushi Ikei
Tokyo Metropolitan University

Tomohiro Amemiya
NTT Communication Science Laboratories

Koichi Hirota
University of Electro-Communications

Michiteru Kitazaki
Toyohashi University of Technology

Varifocal Virtuality: A Novel Optical Layout for Near-Eye Display

With its wide-field-of-view optical design, this system can adjust accommodation depth dynamically so that the presented virtual scene is at the correct accommodation distance with computational blur to match the vergence.

David Luebke
NVIDIA Research, NVIDIA Corporation

Kaan Akşit
Ward Lopes
Jonghyun Kim
Josef Spjut
Peter Shirley
NVIDIA Research

Marty Banks
Steven Cholewiak
University of California, Berkeley

Gordon D. Love
Durham University

Pratul Srinivasan
Ren Ng
University of California, Berkeley

Wired Muscle: Generating Faster Kinesthetic Reaction by Interpersonally Connecting Muscles

Wired Muscle connects muscle activities between two persons using electromyogram measurement and electrical muscle stimulation to generate responsive movements that are faster than those generated by the visual information-based process.

Jun Nishida
University of Tsukuba

Shunichi Kasahara
Sony Computer Science Laboratories, Inc.

Kenji Suzuki
University of Tsukuba

PIXEL POWER!

Watch for Pixel around the conference center. Take a photo, use the hashtag #WheresPixel, and you could win prizes!

To find out how you can get your hands on a collectible Pixel bobble head by following Pixel on Twitter: @ShayDPixel

EXPERIENCE PRESENTATIONS

FP F S EP E

Informal presentations on new ideas related to techniques, concepts, and strategies presented in the VR Theater and the Experience Hall programs: Art Gallery, Emerging Technologies, Studio, and VR Village.

AR/VR

VR/AR & OPTICS

Sunday, 30 July, 9-10:30 am

Varifocal Virtuality: A Novel Optical Layout for Near-Eye Display

This new optical design for see-through near-eye displays is simple, compact, varifocal, and it provides a wide field of view with clear peripheral vision and large eyebox. For objects not at the eye's current accommodation distance, the system computationally blurs the graphics using the most up-to-date blurring technology: ChromaBlur, which accounts for high-order and chromatic aberrations of human eyes.

David Luebke
NVIDIA Research, NVIDIA Corporation

Kaan Akşit
Ward Lopes
Jonghyun Kim
Josef Spjut
Peter Shirley
NVIDIA Research

Marty Banks
Steven Cholewiak
University of California, Berkeley

Gordon D. Love
Durham University

Pratul Srinivasan
Ren Ng
University of California, Berkeley

TwinCam

TwinCam is an omni-directional stereoscopic live-viewing camera that reduces motion blur and latency during head rotation in a head-mounted display. A user study demonstrated the effectiveness of the system's alleviation of virtual reality sickness symptoms.

Kento Tashiro
Toi Fujie
Yasushi Ikei
Tokyo Metropolitan University

Tomohiro Amemiya
NTT Communication Science Laboratories

Koichi Hirota
University of Electro-Communications

Michiteru Kitazaki
Toyohashi University of Technology

Adaptive Dynamic Refocusing: Toward Solving Discomfort in Virtual Reality

This approach to reducing discomfort in virtual reality eliminates the vergence-accommodation conflict, a fundamental flaw that affects all commercial headsets available today. It replaces traditional lenses in headsets with focus-adjustable optical systems to provide accommodation cues while taking into account the eyeglasses prescription of each individual user.

Pierre-Yves Laffont
Lemnis Technologies Pte. Ltd.

Membrane AR: Varifocal, Wide-Field-of-View Augmented Reality Display From Deformable Membranes

This augmented reality display employs novel, see-through, deformable membrane mirrors to create virtual imagery at a desired depth level within a wide field of view with the promise of a more comfortable user experience.

David Dunn
University of North Carolina at Chapel Hill, NVIDIA Research

Cary Tippets
Kent Torell
University of North Carolina at Chapel Hill

Petr Kellnhofer
Max-Planck-Institut für Informatik

Kaan Akşit
NVIDIA Research

Piotr Didyk
Universität des Saarlandes, Max-Planck-Institut für Informatik

Karol Myszkowski
Max-Planck-Institut für Informatik

David Luebke
NVIDIA Research

Henry Fuchs
University of North Carolina at Chapel Hill

AR/VR

EXPERIMENTAL REALITIES

Sunday, 30 July, 10:45 am-12:15 pm

Magic Bench: A Multi-User, Multi-Sensory AR Platform

In this solution for multi-user interactions, a group can share the same augmented environment and interact in the same animated story through a third-person POV. Instead of instrumenting a person, the approach instruments an environment, creating a seamless walk-up-and-play experience.

Kyna McIntosh
John Mars
James Krahe
Jim McCann
Alexander Rivera
Jake Marsico
Ali Israr
Shawn Lawson
Moshe Mahler
Disney Research

HOLO-DOODLE

Created on a paper napkin in 2016, HOLO-DOODLE combines cutting-edge technology, and some of the best creative minds in the VR world to create an intimate, social hangout for users who assume the body of a pink robot. Led by VR director Daffy London, the team brings the inside of a sleek Los Angeles club into an interactive scene where users meet up, chat, and play with other robots. The simple goal is to have fun in VR.

Daffy London
Laura Dohrmann
Superbright

Terrence Masson
School of Visual Arts

Ken Perlin
New York University

Digital Playgroundz

Initi.org is an artistic collective dedicated to developing interactive new-media installations and researching and creating complex audio/visual projects for both indoor and outdoor spaces. Based in Prague, the Czech Republic, the group brings to SIGGRAPH 2017 their new Digital Playgroundz augmented reality platform for large-scale applications.

Daniel Gregor
Ondřej Průcha
Jakub Roček
Josef Kortan
Initi.org

Flock

Flock is a location-based, multi-user, untethered VR experience made for large-group interaction in the same physical and virtual space. The experience is a lightly gamified music video designed to get people to move, shake, and flock together. As they hunt and peck, participants become performers, both for each other and for the surrounding audience.

David Lobser
Ken Perlin
New York University

Lily Fang
Object Normal

Christopher Romero
Manyplace

AR/VR

BODY & MIND IN VR

Sunday, 30 July, 2-3:30 pm

STRATA | A Biometric VR Experience

STRATA is a responsive VR experience driven by biometrics, created by The Mill. STRATA tunes into your heart rate, breathing, stress levels and

brain waves to remix a generative game engine world. The stunning immersive experience connects us to our own emotional state, teaching us to calm and focus our minds.

CONTRIBUTORS
Rama Allen
Jonathan Robinson
Mike Manh
Trent Atwood
Will Arnold
Anthony Dodero
Eric Renaud-Houde
Lauren Shields
Rachel Start
Ivan Joy

Blortasia and Zen Parade: Exploring Spatial Presence in Virtual Reality

Kevin Mack describes the creation of Blortasia and Zen Parade, his abstract virtual reality art experiences that explore the spatial presence of VR as an aesthetic medium in and of itself.

Kevin Mack
Shape Space VR

Neurable: Brain-Computer Interfaces for Virtual and Augmented Reality

Control software with your mind. Neurable's brain-computer interface (BCI) combines novel neurophysiological insights with proprietary machine-learning algorithms. The technology allows for real-time, intent-driven interactions that address many of the pain points associated with extended reality (XR) devices. This presentation discusses Neurable's BCI and its necessary role for XR.

Ramses Alcaide
Neurable Inc.

IRIDiuM+: Storytelling with Immersive Light Fields Beyond 6 Degrees of Freedom

IRIDiuM+ enables immersive storytelling in VR enhanced with non-linear sequenced sound, touch, and light. It extends IRIDiuM to allow branching streams of full-motion light-field video depending on user actions in real time. The deep-media aim is to allow users to physically enter rendered movies with novel non-linear storytelling capability. With the ability to change the outcome of the story through touch and physical movement, users make choices with consequences in immersive movies. The interactive narrative guides users through the immersive story with lighting and spatial audio design and integrates both walkable and air-haptic actuators.

Maggie Kosek
Disney Research, Edinburgh Napier University, The Walt Disney Company

Babis Koniaris
David Sinclair
Desislava Markova
Fraser Rothnie
The Walt Disney Company, Disney Research

Lanny Smoot
Disney Research

Kenny Mitchell
Edinburgh Napier University, The Walt Disney Company, Disney Research

RESEARCH

EXPLORATIONS IN E-TEXTILES AND CIRCUIT-CONSTRUCTING METHODS

Sunday, 30 July, 3:45-5:15 pm

Whoa Board: Interactive Lighting for Wearables and Beyond

Light-emitting coatings have both a storied past and a bright future. This circuit board turns electro-luminescent materials into capacitive touch sensors through a trick of control. The technology can be used to make environments responsive without a screen or a headset.

Josh Vekhter
University of Texas at Austin, Foolish Products, LLC

Josh Gordonson

Zanzie Addington-White

Yanina Vekhter
Foolish Products, LLC

Interactive Systems Based on Electrical Muscle Stimulation

This research in human-computer integration demonstrates devices that share the user's muscles for input and output by using medically safe electrical-muscle stimulation. The devices transform human arms in interactive plotters, teach new physical skills, and provide physical sensations in virtual reality.

Pedro Lopes
Patrick Baudisch
Hasso-Plattner-Institut für Softwaresystemtechnik GmbH

Textile++: Low-Cost Textile Interface Using Resistive Touch Sensing

In this extension of fabric composed of fiber materials, it is possible to detect the XY coordinate and the pressure of the substance touched by the cloth. The system is flexible and lightweight, and compared to existing methods, the structure is simple, so it can be manufactured at very low cost.

Keisuke Ono
Tetsuaki Baba
Shinichiro Iwamura
Akira Ogie
Tokyo Metropolitan University

Paul Haimes
National Institute of Advanced Industrial Science and Technology

ActMold: Rapid Prototyping of Electronic Circuits on 2.5D Objects with Interactive Vacuum Forming

With ActMold, users print circuits using conductive ink, create objects with vacuum forming, and apply heat to re-create molded objects such as an illuminating badge and a speaking mask.

Junichi Yamaoka
Yasuaki Kakehi
Keio University

Yoshihiro Kawahara
The University of Tokyo

AR/VR

AUGMENTED REALITY

Tuesday, 1 August, 9-10:30 am

AR Mail From Harbin

This playful mobile application enriches spatial experience and social interactions of visitors to a heritage site. The AR system adds a 3D-captured section of Harbin's cathedral on a fragment of plan printed on postcards, and a postcard set can be assembled to show the whole building.

Takehiko Nagkaura
Woongki Sun
Dan Li
Massachusetts Institute of Technology

Bridget

Bridget is a curious little robot whose core functionality is open source. This introduction to Bridget explains how OpenBE powers her brain, summarizes the Bridge Engine SDK, and demonstrates the Bridge headset and controller.

Jeff Powers
Jacob Ervin
Occipital, Inc.

Aaron Hilton
Steampunk Digital

Remote Collaboration in AR and VR Using Virtual Replicas

AR and VR interaction and visualization techniques that efficiently support remote assistance scenarios in which users wear tracked head-worn displays. The techniques allow a remote expert to create and use virtual replicas of physical objects to guide a local user in performing a task with those objects.

Carmine Elvezio
Mengu Sukan
Ohan Oda
Barbara Tversky
Steven Feiner
Columbia University

IL Gigante: Michelangelo's David in VR

See Michelangelo's "stone giant" in virtual reality. Walk around Michelangelo's 17-foot (5-meter) statue of David and use a virtual scaffold to see the work up close as few have seen it before.

Christopher Evans
Epic Games, Inc.

AR/VR

IMMERSIVE VR PRODUCTION

Tuesday, 1 August, 10:45 am-12:15 pm

Breakthrough VR: Hallelujah & Lytro Immerge

Hallelujah is the world's first VR music experience to provide an uncompromised sense of presence with six degrees of freedom. Created using Lytro Immerge, an end-to-end production pipeline, Hallelujah combines visionary creative and bleeding edge Light Field tech to deliver a breakthrough experience. Learn more from the Lytro team.

Tim Milliron
Nikhil Karnad
Chrissy Szczupak
Orin Green
Lytro, Inc.

Rainbow Crow

The team behind the award-winning animated VR narratives "Invasion!" and "Asteroids!" share learnings and insights from the studio's latest project. Rainbow Crow, inspired by a Native American myth, has been showcased at Tribeca, Cannes, and Annecy film festivals.

Larry Cutler
Michael Hutchinson
Nathaniel Dirksen
Scott Peterson
Baobab Studios

ART

COUNTER-ARTIFACTS

ARTIST TALKS: COUNTER-ARTIFACTS
Tuesday, 1 August, 12:15-1:45 pm

MODERATOR
Nao Bustamante
University of Southern California

ARTISTS
Astrovandalistas
Marcela Armas
Arcangelo Constantini
Gisela Motta

AR/VR

IT'S ALL (VR) FUN & GAMES

Wednesday, 2 August, 9-10:30 am

Unleashing VR through Casual Content

How Casual Games Will Bring Virtual Reality Mainstream

From Pong to FarmVille, casual content has been instrumental in driving mainstream adoption of new technologies. This presentation explains how the casual past helps predict the VR future and explores how casual content will help bring virtual reality to the masses.

Nick Robinson
Azin Mehrnoosh
RLTY CHK

Mission: ISS

Explore the International Space Station 250 miles above earth in this simulation experience developed in collaboration with NASA. Move in zero gravity using Oculus Touch controllers. Explore ISS experiments and missions. Take a spacewalk to check out the exterior of the station.

Adrian Sciutto
Magnopus

Emotional Choices in VR Narrative

When faced with difficult emotional choices, what will you do? This talk explores how interactivity in VR storytelling engages the viewer with emotional choices instead of branching story choices. Topics include interactive narrative design in the VR Village experience Reaping Rewards and how in-VR animation prototyping VR is essential for the creative process.

Jonathen Collins
Limitless Ltd

AR/VR RESEARCH

TOUCHING HOLOGRAMS, SEVERAL APPROACHES

Wednesday, 2 August, 10:45 am-12:35 pm

Altered Touch: Miniature Haptic Display With Force, Thermal, and Tactile Feedback for Augmented Haptics

Altered Touch can be used to alter the haptic properties of real objects by rendering projected visual and haptic feedback. The wearable tactile actuator can be used in several augmented reality applications to change softness, hardness, and thermal sensation.

Takaki Murakami
Tanner Person
Charith Lasantha Fernando
Kouta Minamizawa
Keio University

ORBEVR - A Handheld Concave Spherical Virtual Reality Display

OrbeVR is a handheld spherical display based on multi-projection technology. It displays images projected by multiple pico-projectors installed inside the sphere. The infrastructure tracks the positions of the user and the display, and renders head-coupled perspectives with stereoscopic depth cues.

Olavo Belloc
Mario Nagamura
Douglas Fonseca
Andre Rodrigues
Diego Souza
Universidade de São Paulo

Celso Kurashima
Universidade Federal do ABC

Marcio Almeida
Eduardo Zilles Borba
Roseli De Deus Lopes
Marcelo Zuffo
Universidade de São Paulo

Submerged Haptics: Haptic Display Using Miniature 3D Printed Airbags

This novel method uses 3D printing technology to create waterproof wearable haptic displays. The displays are very lightweight and use no electro-mechanical actuation. A small full-range speaker transfers air back and forth through a tiny nozzle in the airbag.

Yuan-Ling Feng
Charith Lasantha Fernando
Jan Rod
Kouta Minamizawa
Keio University

Mid-Air Interaction With a 3D Aerial Display

Presenting the design-and-build process of a re-imaged volumetric display that enables mid-air interaction with 3D floating objects. The talk discusses interaction techniques that provide haptic feedback at exterior contours and mitigate occlusion conflicts during direct manipulation based on hand position relative to interior content.

Seth Hunter
Ron Azuma
Intel Corporation

Jonathan Moisant-Thompson
Intel Corporation

Dave MacLeod
Derek Disanjh
MistyWest

Merge Cube

This presentation showcases the world's first holographic object you can hold in the palm of your hand. The award-winning Merge Cube gives you the power to play, learn, and explore in magical new ways. You can download apps using your tablet or smartphone, and watch the cube come to life!

Jeremy Kenisky
Merge VR

ART

BIOCYBERNETIC SPECULATIONS

ARTIST TALKS: BIOCYBERNETIC SPECULATIONS
Wednesday, 2 August, 2-3:30 pm

MODERATOR
Maria Fernandez
Cornell University

ARTISTS
Gilberto Esparza
Paul Rosero Contreras
Hamilton Mestizo

ART

UNSETTLED MACHINERY

ARTIST TALKS: UNSETTLED MACHINERY
Wednesday, 2 August, 3:45-5:15 pm

MODERATOR
Andres Burbano
Universidad de los Andes

ARTISTS
Leo Nuñez
Mariela Yeregui
Christian Oyarzún
Rodolfo Peraza

AR/VR

THE ART & SCIENCE OF VR

Wednesday, 2 August, 3:45-5:15 pm

Facing Mike
The workflow and technology behind the Meet Mike Epic VR experience: spanning the integration of complex scanning and modeling, facial AI deep learning, and advanced real-time UE4 graphics.

Mike Seymour
fxguide.com, The University of Sydney

Christopher Evans
Epic Games, Inc.

Christopter Nichols
Chaos Group Labs

Jay Busch
Google, Inc.

Heroes: The Making of an Interactive, Mixed-Reality Duet
Heroes is multidimensional experience that guides the audience and participants through the emotionality of dance set to an iconic David Bowie song. This panel discussion illuminates the process of creating this extraordinary experience and the intricacies of creating a live-action performance with world-class visual effects incorporated into a Unity-driven experience for Gear VR and HoloLens.

Csilla Kozma-Andersen
Nokia Technologies

Melissa Painter
MAP Design Lab

Tim Dillon
Moving Picture Company

Thomas Wester
Thomas Wester Consulting

Jason Schugardt
MPCVR

RESEARCH

MATERIALIZATION OF MOTION, LEVITATION, AND MAGNETICS

Thursday, 3 August, 10:45 am-12:15 pm

Materialization of Motions: Tangible Representation of Dance Movements for Learning and Archiving
With this system for learning and archiving dance choreography, users can touch and confirm the position of the body parts, review a 3D view of the dance postures, and change the position of 3D objects.

Mose Sakashita
Kenta Suzuki
Keisuke Kawahara
Kazuki Takazawa
Yoichi Ochiai
University of Tsukuba

LeviFab: Stabilization and Manipulation of Digitally Fabricated Objects for Superconductive Levitation
Aerial manipulation of material objects is fascinating and is used in many performance situations. Many scientific demonstrations and magic shows employ acoustic, magnetic, electric, and superconductive levitation. This study focuses on superconductive levitation because it has not been well explored for entertainment applications.

Yoichi Ochiai
University of Tsukuba

Magnetic Plotter: A Macrotexture-Design Method Using Magnetic Rubber Sheets
Magnetic Plotter is a desktop digital-plotting machine combined with a tiny neodymium magnet that writes fine magnetic patterns on the surface of a magnetic rubber sheet. This method enables users to freely design magnetic fields with inexpensive commercially available materials as if they are drawing pictures, and when the magnetic sheets are rubbed together, unique haptic stimuli are displayed on the fingers. The haptic stimuli can be designed by the magnetic patterns plotted on the rubber sheets.

Kentaro Yasu
Nippon Telegraph and Telephone Corporation

AR/VR RESEARCH

AUGMENTED SELF, NEW INTERACTION

Thursday, 3 August, 2-3:30 pm

MetaLimbs: Multiple Arms Interaction Metamorphism
MetaLimbs proposes a novel approach to body-schema alternation and artificial-limb interaction. It adds two robotic arms to the user's body and maps the global motion of legs and feet relative to the torso. Then it maps these data to arm and hand motion, and to fingers gripping the artificial limbs, adds force feedback to the feet, and maps the feedback to the manipulator's touch sensors.

Tomoya Sasaki
MHD Yamen Saraiji
Charith Lasantha Fernando
Kouta Minamizawa
Keio University

Masahiko Inami
The University of Tokyo

Wired Muscle: Generating Faster Kinesthetic Reaction by Inter-Personally Connecting Muscles
Wired Muscle connects muscle activities between two persons using electromyogram (EMG) measurement and electrical muscle stimulation (EMS) to generate responsive movements that are faster than those generated by the visual information-based process. The system detects the muscle activity of a person by the EMG and triggers the EMS to drive the muscle of the other person to induce corresponding counter movements. In a pilot study, reaction time to the motion of another person was shortened to approximately 60 ms.

Jun Nishida
University of Tsukuba

Shunichi Kasahara
Sony Computer Science Laboratories, Inc.

Kenji Suzuki
University of Tsukuba

Stretchable Transducers for Kinesthetic Interactions in Virtual Reality
The tools of soft robotics enable immersive kinesthetic experiences in virtual reality. Using fluidic elastomer actuators, this project demonstrates a soft skin that can provide force feedback and a soft controller to simulate different objects. These novel input devices integrate with a virtual reality funhouse experience.

Bryan Peele
Benjamin Mac Murray
Jose Barreiros
Robert Shepherd
Cornell University

Josef Spjut
Omer Shapira
David Luebke
NVIDIA Corporation

Bottomless Joystick 2
Bottomless Joystick 2 provides the same kinetic sensation in midair as a normal joystick. It can be used by one person, or more than one, simultaneously. For first-person shooter games, one user can deploy two joysticks to simulate two handguns. Two joysticks can also represent feedback from ski poles, or boat oars, or a bow shooting an arrow.

Yuichiro Katsumoto
National University of Singapore

PANELS

FP F

Panelists discuss, confer with, and debate each other in a free-flowing format that generates consensus, controversy, confusion, and clarity, sometimes simultaneously. Panels are a mixture of sessions organized by special invitation and or selected from juried proposals submitted through the online submission process.

Full Conference Platinum and Full Conference Access registration allows attendees access to all SIGGRAPH 2017 Panels.

Seating is on a first-come, first-served basis. Please arrive early for the Panel you wish to attend.

SUNDAY, 30 JULY

MOBILE *curated content*

Mobile GPU's – What's Next?
Sunday, 30 July, 9-10:30 am

Panel discussion on trends in mobile graphics, use-cases driving high-end GPU capabilities in mobile and path forward.

MODERATOR
Ryan Shrout
Shrout Research

PANELISTS
Micah Knapp
Qualcomm

Adam Gousetis
Google

Nizar Romdhane
Virtual Arts

Scott Flynn
Unity Technologies

PRODUCTION

State and Future of Hair in Feature Film and Visual Effects
Sunday, 30 July, 9-10:30 am

This panel brings together engineers and artists representing various areas of expertise to provide a summary of their day to day relationship with hair. They describe some of the big challenges and their solutions, as well as issues still outstanding, then explore some of the commonalities and outliers to better understand how we have arrived at our current state and ultimately what the future is for CG hair.

Rob Vogt
DreamWorks Animation

Steve Marschner
Cornell University

Hayley Iben
Pixar Animation Studios

Sean Palmer
Walt Disney Animation Studios

Colin Doncaster
Peregrine Labs

Oba Ameziane-Hassani
Digital Domain

Damon Crowe
DreamWorks Animation

Gaelle Morand
Industrial Light & Magic

AR/VR *curated content*

Emotion & Affect in VR
Sunday, 30 July, 3:45-5:15 pm

With its multisensory features and immersive capabilities, virtual reality has affected some participants so profoundly that it alters emotional states. The potential, and implications, are massive. These panelists discuss recognizing and recording emotion, and innovative methods for creating emotive experiences.

Mark Billinghurst
University of South Australia

Amanda Coolong

Jacquelyn Ford Morie

Tabitha Peck

ANIMATION & VFX *curated content*

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES

The Academy's Science and Technology Council Presents "Hidden Figures" in Collaboration with NASA
Sunday, 30 July, 3:45-5:15 pm

Join us for a rare SIGGRAPH session featuring NASA "Modern Figures" scientists and "Hidden Figures" crew for an examination of the past, present and future in space math, diversity, and the movies.

MODERATOR
Beverly J. Wood
BJWOOD Consultant, LLC

PANELISTS (Panelists subject to change)
Tracy D. Drain
(Flight Systems Engineer, Deputy Chief Engineer Juno Mission)
NASA JPL

Amy Mainzer
(Senior Research Scientist, NEOWISE Principal Investigator, NASA JPL)
NASA JPL

Powtawche Valerino
(Navigation Engineer)
NASA JPL

Allison Schroeder
Oscar®-nominated writer, "Hidden Figures"

Mandy Walker ASC, ACS
Cinematographer, "Hidden Figures"

Chris LeDoux
Visual Effects Supervisor, "Hidden Figures"
Crafty Apes

MONDAY, 31 JULY

AR/VR *curated content*

AR and VR Futures
Monday, 31 July, 2-3:30 pm

After 50 years, augmented and virtual reality are entering the mainstream, but there are still many important aspects that need to be worked on before they achieve widespread acceptance. This special session combines presentations from academic and industrial leaders to provide a tantalizing glimpse into the future of the technology.

Nonny de la Peña
Emblematic Group

Evan Suma Rosenberg
Steven Feiner
Columbia University

Karan Singh
University of Toronto, JanusVR

CGEMS: Computer Graphics Education Material
Monday, 31 July, 2-3:30 pm

This panel proposes and discusses a template for submission of nifty assignments to the Computer Graphics Educational Materials Source (CGEMS) at the Eurographics Digital Library (accessible through the ACM Digital Library). CGEMS is looking for computer-graphics assignments (curricular material) that are high quality, straightforward to use and incorporate in class, and fit easily into the computer-graphics curricular framework. Topics include the expected CGEMS paper-submission format and accompanying practical material (code).

Andrew Duchowski
Clemson University

Edward Angel
University of New Mexico

Bruce Gooch
Texas A&M University

David Luebke
NVIDIA Corporation

CGIStudio: Thirty Years, One Renderer
Monday, 31 July, 3:45-5:15 pm

In February 2017, the Academy of Motion Picture Arts and Sciences honored Carl Ludwig, Eugene Troubetzkoy, and Maurice van Swaaij with a Sci-Tech Award "for the pioneering development of the CGIStudio renderer at Blue Sky Studios". This year is also the 30th anniversary of CGIStudio, which demonstrated the feasibility of ray tracing and global illumination in visual effects and animation. The first ray-traced animated feature film was Blue Sky's "Ice Age" (2002).

This panel presents a few of the CGIStudio pioneers for a moderated discussion of how Blue Sky managed to challenge the industry's conventional approach to CG production, including Carl Ludwig, (Blue Sky's CTO and the visionary behind CGIStudio), Academy Award®-winning directors Chris Wedge and John Kahrs, and Academy Sci-Tech Award recipient Hilmar Koch.

Maurice van Swaaij
Carl Ludwig
Chris Wedge
Blue Sky Studios

John Kahrs
Broad Reach Pictures

Hilmar Koch
Autodesk

TUESDAY, 1 AUGUST

EDUCATORS

History of the JPL Computer Graphics Lab
Tuesday, 1 August, 9-10:30 am

This panel celebrating the lab's 40th anniversary includes the lab's principal scientist, two of the principal engineers, and the artist-in-residence. They present an overview of the operations at the lab, summarize the tasks required for NASA mission support, show excerpts from the lab's productions, and discuss how they were produced. They also describe how the lab's history is being prepared as a graph database to enable dynamic, context-sensitive navigation, including browsing it in VR.

Julian Gómez
Polished Pixels

James Blinn
Retired

David Em
Retired

Sylvie Rueff
Retired

ANIMATION & VFX *curated content*

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES

The Academy's Scientific and Technical Awards: The Technology, the Awardees, and the Process
Tuesday, 1 August, 2-3:30 pm

This session will cover some of this year's award-winning technologies, the history of the work leading to the awards, as well as the details of the Scientific and Technical Award process. For the last three decades SIGGRAPH has been an incubator for many Academy Award winning technologies, this will be a celebration of that relationship.

MODERATOR
Barbara Ford Grant
VP Digital Production Services
Home Box Office, Inc.

PANELISTS
Doug Roble
Creative Director of Software
Digital Domain, Inc.; Academy's Science and Technology Council

Meander (Disney):
Brian Whited
Walt Disney Animation Studios

Expression-Based Facial Performance-Capture (Sony):
Parag Havaldar
Blizzard

Rig-Based Facial Performance-Capture Systems (IMD, DD):
Geoff Wedig
Magic Leap

FACETS Facial Performance Capture and Solving System (Weta):
Luca Fascione
Weta Digital

Open Shading Language:
Larry Gritz
Sony Pictures Imageworks

CGI Studio Renderer (BlueSky):
Maurice van Swaaij
BlueSky Studios

Arnold Renderer:
Marcos Fajardo
Solid Angle

ILM Facial Performance-Capture Solving Systems:
Paige Warner
Industrial Light & Magic

V-Ray Renderer:
Vladimir (Vlado) Koylazov
Chaos Group

PRODUCTION SESSIONS

FP F S

SIGGRAPH 2017 hosts Production Sessions, where the world's most elite and talented computer graphic experts and creative geniuses explain their processes and techniques for creating compelling content. Following each presentation, attendees ask questions about the challenges and issues associated with complex productions.

Visit s2017.siggraph.org for updates.

Seating is on a first-come, first-served basis.

FP F S EP E

PRODUCTION GALLERY

Sunday, 30 July, 9 am-6 pm
Monday, 31 July, 9 am-6 pm
Tuesday, 1 August, 9 am-6 pm
Wednesday, 2 August, 9 am-6 pm

This all-new, one-of-a-kind exhibit will recognize the art, processes, and physical materials involved in the creation of major studio projects — not just the final piece on screen. Attendees will explore artwork, props, costumes, and more from recent film, VR, or game productions. Join us in L.A. for the chance to check out this exclusive behind-the-scenes look at some of Hollywood's biggest blockbusters.

FP F S EP E EO

PRODUCTION SESSIONS MOVIE SCREENING

Cars 3
Sunday, 30 July, 9-11 pm

The Making of Disney's "Beauty and the Beast"
Monday, 31 July, 2-3:30 pm

Join the visual-effects team behind Disney's live-action remake of the 1991 animated classic as we discuss the creative and technical challenges behind bringing this wonderful and exciting film to life. As we take you on a highlight tour of our two-year journey, you will get a chance to see how the film's many characters and environments evolved from initial concepts and studies to finished designs. We explore the technology behind achieving Dan Steven's remarkable Beast performance, the process of building complex scenes such as "Be Our Guest" and throughout all this, will catch an inside glimpse of how unique and continued collaboration with key production departments (art, costume, music, choreography) was critical to the overall success of the project.

Kelly Port (Visual Effects Supervisor)
Darren Hendler (Digital Effects Supervisor)
Digital Domain

Adrien Saint Girons (CG Supervisor)
Framestore

Stories the Ocean Tells Us: The Making of "Moana"
Tuesday, 1 August, 10:45 am-12:15 pm

Telling the story of "Moana" became one of the most ambitious things we've ever done at the Walt Disney Animation Studios. We felt a huge responsibility to properly celebrate the culture and mythology of the Pacific Islands, in an epic tale involving demigods, monsters, vast ocean voyages, beautiful lush islands, and a sweeping musical visit to the village and people of Motunui. Join us as we discuss our partnership with our Pacific Islands consultants, known as our "Oceanic Story Trust," the research and development we pursued, and the tremendous efforts of our team of engineers, artists and storytellers who brought the world of "Moana" to life.

Osnat Shurer (Producer)
Kyle Odermatt (VFX Supervisor)
Hank Driskill (SDL-Technical Supervisor)
Dale Mayeda (Effects Animator)
Adolph Lusinsky (SDL- Lighter)
Walt Disney Animation Studios

Crazy Eight: The Making of a Race Sequence in Disney/Pixar's "Cars 3"
Tuesday, 1 August, 2-3:30 pm

In this deep dive into "Cars 3", learn how Pixar filmmakers pulled off one of their most complex sequences ever: a figure-8 demolition derby filled with car crashes, mud, and explosions! The production team discusses the artistic and technical challenges involved in bringing this race to life. Park at your own risk. Pixar is not responsible for any damage to your vehicle.

Sudeep Rangaswamy (Global Technology Supervisor)
Bert Berry (Shading Art Director)
George Nguyen (Character Shading Lead)
David Bianchi (Layout Lead)
Stephen Marshall (Effects Lead)
Paul Oakley (Master Lighting Artist)
Frank Tai (Set Dressing Artist)
Pixar Animation Studios

Industrial Light & Magic Presents: Behind the Magic, The Visual Effects of Rogue One: A Star Wars Story
Tuesday, 1 August, 3:45-5:15 pm

Join the visual effects team from Industrial Light & Magic as they discuss the Academy Award nominated effects work that went into Rogue One. Space battles, planetary destruction, "CG Miniatures", a reprogramed Imperial Droid, a Death Star and, yes, some digital human work for good measure, the crew will provide insight into the film's biggest challenges and discuss the solutions that brought this new chapter in the Star Wars universe to life.

John Knoll (Chief Creative Officer/Senior Visual Effects Supervisor)
Vick Schutz (Lighting Technical Director Supervisor)
Stephen Ellis (CG Supervisor)
Russell Paul (Digital Supervisor)
John Levin (Layout Supervisor)
Industrial Light & Magic

Behind the Headset: The Making of Google Spotlight Stories' "Son of Jaguar," "Sonaria," and Oculus Story Studios' "Dear Angelica"
Wednesday, 2 August, 10:45 am-12:15 pm

Three unique VR production teams come together in this high-energy session to discuss their innovative approaches to immersive visuals,

audio, and user experience, many of which are being presented publicly for the first time. For "Son of Jaguar", "Sonaria", and "Dear Angelica", brand-new tools and production pipelines were created to bring these intricate and immersive stories to life. Google Spotlight Stories, Oculus, and Reel FX present the techniques and storytelling strategies that have earned them reputations as world leaders in the realm of virtual reality and interactive mediums.

SON OF JAGUAR:
Jorge Gutierrez (Director)
Reel FX

Cassidy Curtis (Technical Art Lead)
Google Spotlight Stories

SONARIA:
Scot Stafford (Director, Composer and Sound Supervisor)
Pollen Music Group / Google Spotlight Stories

Kevin Dart (Director and Production Designer)
Theresa Latzko (Technical Art Lead)
Chromosphere

DEAR ANGELICA:
Maxwell Planck (Producer and Technical Founder)
Chris Horne (CG Supervisor)
Inigo Quilez (VFX Supervisor)
Robert Chen (FX Lead)
Oculus Story Studio

Valerian and the City of a Thousand Planets
Wednesday, 2 August, 2-3:30 pm

"Valerian and the City of a Thousand Planets" is the visually spectacular new adventure film from Luc Besson, the legendary director of "The Fifth Element", and is based on the ground-breaking comic book series Valérian et Laureline.

This session zooms in on the technologies deployed to create this fabulous universe.

Sophie Leclerc (VFX Producer)

Martin Hill (VFX Supervisor)
Weta Digital

Jose Burgos (CG Supervisor)
Christian Alzmann (Visual Effects Art Director)
Industrial Light & Magic

Peter Nofz (Associate VFX Supervisor)
Olivier Martin (Concept Artist)
RodeoFX

Game of Thrones: Building and Destroying Meereen
Wednesday, 2 August, 3:45-5:15 pm

The Rodeo FX team will take you through the process behind the creation of the award-winning environment of Meereen in seasons 4 and 5 of Game of Thrones, then its destruction in season 6. Created in season 4, the impressive city features a giant gilded pyramid crowned by a golden statue. What started out as a 2.5D matte painting evolved into a fully CG city in season 6, threatened to be destroyed when it's under attack by a huge fleet of ships.

Patrick David (VFX Supervisor and Compositor)
Thomas Hullin (Lead FX Artist)
RodeoFX

Sony Pictures Imageworks Celebrating 25 Years of Innovation, Imagination, and Creativity
Wednesday, 2 August, 5:45-7:15 pm

Sony Pictures Imageworks, the Academy Award–winning visual effects and animation studio, has created extraordinary and visually stunning images for more than 100 live-action and animated productions over its 25-year history. The studio is a leader in technology, developing software and tools that have helped solve industry-wide challenges and deliver spectacular visuals to the big screen. Join the Imageworks team as they celebrate their rich history and reflect on the innovation, imagination, and creativity that has inspired audiences worldwide.

Jerome Chen (Senior VFX Supervisor)
Ken Ralston (Senior VFX Supervisor)
Mark Breakspear (VFX Supervisor)
Michael Ford (VFX Supervisor)
Sue Rowe (VFX Supervisor)
Sony Pictures Imageworks

Blizzard Entertainment Presents: The Making of the "Overwatch Animated Shorts"
Thursday, 3 August, 10:45 am-12:15 pm

In March 2016, Blizzard Entertainment released the first in a series of animated shorts set in the world of their highly anticipated franchise, *Overwatch*. Over the course of the year, six stand-alone episodes – comprising over 40 minutes of original content – were released, giving millions of viewers their first look into the background of *Overwatch*'s most iconic heroes. Combined with the simultaneous release of short-form comics, teasers, and even the release of tracks from a character's debut album, the *Overwatch* shorts are part of a robust cross-media approach to original storytelling and world building.

To tell this much story, Blizzard Animation had to radically alter some of its production workflows and much of the technology used to produce the final episodes. Using the groundbreaking GPU-based ray-tracing renderer Redshift, the *Overwatch* shorts represent an entirely new, cost-effective animation pipeline that allows rich, high-quality content to be created in a fraction of the time traditionally associated with pre-rendered workflows. From story and animatic though 3D animation and delivery of the final content, Blizzard's team shares some of the strategies, tools, and techniques employed to create a world worth fighting for in the *Overwatch* animated shorts.

Jeff Chamberlain (VP of Story and Franchise Development)
Ben Dai (Cinematic Director)
Kevin VanderJagt (Cinematic Producer)
Ben Deda (Cinematic Pipeline TD)
Hunter Grant (Cinematic Animation Supervisor)
Bill La Barge (Cinematic Senior Effects Artist)
Mike Hardison (Cinematic Lighting Lead)
Blizzard Entertainment

The Making of Marvel Studio's "Spider-Man: Homecoming"
Thursday, 3 August, 2-3:30 pm

A young Peter Parker (Spider-Man), who made his sensational debut in "Captain America: Civil War", begins to navigate his newfound identity as the web-slinging superhero in "Spider-Man: Homecoming". Thrilled by his experience with the Avengers, Peter returns home, where he lives with his Aunt May. Under the watchful eye of his new mentor, Tony Stark, Peter tries to fall back into his normal daily routine, distracted by thoughts of proving himself to be more than just your friendly neighborhood Spider-Man. But when the Vulture emerges as a new villain, everything that Peter holds most important is threatened. Marvel Studios, Method Studios, Digital Domain, and Sony Pictures Imageworks take SIGGRAPH audiences through their VFX journey as they created some of the movie's most heart-stopping moments.

Victoria Alonso (Executive Vice President, Physical Production)
Edwin Rivera (Additional VFX Supervisor)
Marvel Studios

Matt Dessero (2nd Unit Supervisor, VFX Supervisor)
Method Studios

Lou Pecora (VFX Supervisor)
Digital Domain

Theo Bialek (VFX Supervisor)
Sony Pictures Imageworks

The Making of Marvel Studio's "Guardians of the Galaxy Vol. 2"
Thursday, 3 August, 3:45-5:15 pm

Set to the backdrop of Awesome Mixtape #2, Marvel's "Guardians of the Galaxy Vol. 2" continues the team's adventures as they traverse the outer reaches of the cosmos. The Guardians must fight to keep their newfound family together as they unravel the mysteries of Peter Quill's true parentage. Old foes become new allies, and fan-favorite characters from the classic comics come to our heroes' aid as the Marvel cinematic universe continues to expand. Marvel Studios, Weta, Framestore, and Method Studios take SIGGRAPH audiences through their VFX journey as they created some of the movie's most heart-stopping moments.

Victoria Alonso (Executive Vice President, Physical Production)
Damien Carr (VFX Producer)
Christopher Townsend (VFX Supervisor)
Marvel Studios

Guy Williams (VFX Supervisor)
Weta Digital

Jonathan Fawkner (VFX Supervisor)
Framestore

Nordin Rahhali (VFX Supervisor)
Method Studios

REAL-TIME LIVE!

FP F S

Tuesday, 1 August, 6-7:45 pm

An interactive extravaganza that celebrates real-time achievements at the intersection of ingenious technical skills and creative beauty, Real-Time Live! showcases the latest trends and techniques for pushing the boundaries of interactive visuals.

BEST REAL-TIME GRAPHICS AND INTERACTIVITY AWARD

Developers create and showcase the best real-time graphics and interactivity applications possible using today's technologies. The winning team is announced from the Real-Time Live! stage.

2016 Award Winner

From Previs to Final in Five Minutes: A Breakthrough in Live Performance Capture

Epic Games, Ninja Theory, Cubic Motion, and 3Lateral Studio

Direct 3D Stylization Pipelines

Creating stylized computer graphics requires art direction, which is significantly enhanced by interactive workflows. This direct watercolor-stylization system lets artists locally control the desired effects in animated 3D scenes and see the stylized results in real time.

Santiago Montesdeoca
Hock Soon Seah
Davide Benvenuti
Hans-Martin Rall
Nanyang Technological University

Pierre Bénard
Inria, Université de Bordeaux, CNRS

Joëlle Thollot
Romain Vergne
Université Grenoble Alpes, Inria, CNRS

Large-Scale Interactive Water Simulation With Directional Waves

The first-ever real-time simulation of a realistic, large-scale ocean scene of 4 by 4 kilometers at a resolution of less than 1 cm. The waves interact with 1,000 boats and floating rigid bodies, and they accurately disperse, diffract, and reflect off island boundaries.

Stefan Jeschke
IST Austria

Nuttapong Chentanez
Miles Macklin
Matthias Müller-Fischer
NVIDIA Corporation

Chris Wojtan
IST Austria

Limitless VR Creative Environment

The Limitless VR Creative Environment allows users to build character-driven content directly in VR: animation blocking, scene layout, basic set dressing, basic lighting, etc. The toolset is accessible to a broad range of users, and content is stored on the cloud for easy sharing.

Tom Sanocki
Natalie Burke
Jonathan Lucka
Jonathen Collins
Trevor Berninger
Milton Cadogan
Limitless Ltd

Penrose Maestro

Penrose Maestro is a suite of tools that enables artists to review and work on a VR story in a collaborative, multi-user native VR environment. It takes the artists into the production together, allowing for perfect spatial context when taking notes from a director.

Devon Penney
Bruna Berford
Terry Kaleas
Penrose Studios, Inc.

PhysicsForests: Real-Time Fluid Simulation Using Machine Learning

This data-driven fluid simulation with surface generation, foam, coupling with rigid bodies, and rendering is capable of simulating several million particles in real time. It uses the regression forest to estimate the behavior of particles and rendered surfaces. The method can handle a wide range of fluid parameters.

Lubor Ladicky
SoHyeon Jeong
Nemanja Bartolovic
ETH Zürich

Marc Pollefeys
Microsoft Research, ETH Zürich

Markus Gross
ETH Zürich, Disney Research

Pinscreen: Creating Performance-Driven Avatars in Seconds

With this fully automatic framework for creating a complete 3D avatar from a single unconstrained image, users can upload any photograph to build a high-quality head model within seconds. The model can be immediately animated via performance capture using a webcam.

Hao Li
University of Southern California

Shunsuke Saito
Lingyu Wei
Iman Sadeghi
Liwen Hu
Jaewoo Seo
Koki Nagano
Jens Fursund
Yen-Chun Chen
Stephen Chen
Pinscreen, Inc.

Star Wars Battlefront VR: Piloting an XWing for the First Time

Star Wars Battlefront VR was released to critical acclaim last December. This is the first VR game ever created using Frostbite, the same engine that powers games like Battlefield. The production team faced the challenge of creating a VR game on PS4 with visuals that match modern AAA games.

Ángel Muñoz Berbel
Christian Bense
Matthew Patterson
Criterion Games

Superposition Benchmark: Innovative SSRTGI Lighting in Real Time

Superposition Benchmark continues the line of UNIGINE products famous for innovative 3D graphics. This new SSRTGI (Screen-Space Ray Tracing Global Illumination) technique uses a rendered ray tracing algorithm that is close to real physics and produces an interactive real-time rendered environment that looks photorealistic.

Denis Shergin
Davyd Vidiger
Anna Fofanova
UNIGINE Corp.

The Human Race

The Mill and Epic present "The Human Race", an interactive film made possible by real-time VFX, blurring the line between production and post. Powered by UE4, The Mill Cyclops, and The Mill BLACKBIRD, the film revolutionizes the conventions of digital filmmaking to create a film you can play.

Joji Tsuruga
Eric Renaud-Houde
The Mill

Unity: EditorVR

EditorVR is an open-source feature that allows anyone to edit Unity scenes directly in VR.

Amir Ebrahimi
Timoni West
Matt Schoen
Dylan Urquidi
Unity Technologies

STUDIO

CYBORG SELF: EXTENSIONS, ADAPTATIONS, AND INTEGRATIONS OF TECHNOLOGY WITHIN THE BODY

FP F S EP E

The Studio presents a broad range of concepts related to the convergence of the physical body and evolving technologies with an emphasis on wearables, e-textiles, bio-tech, and sensory extension across physical and virtual platforms.

Studio Hours

Sunday, 30 July . . . . . 1:30-5:30 pm
Monday, 31 July . . . . . 10 am-5:30 pm
Tuesday, 1 August . . . . . 10 am-5:30 pm
Wednesday, 2 August . . . . . 10 am-5:30 pm
Thursday, 3 August . . . . . 10 am-3:30 pm

Seating is on a first-come, first-served basis. Please arrive early for the Studio Workshops you wish to attend.

Visit s2017.siggraph.org for updates.

STUDIO WORKSHOPS

Hands-on: Rapid Interactive Application Prototyping for Media Arts and Stage Performance

Sunday, 30 July, 2-5:15 pm

Introducing a mashup of interaction technologies and OpenGL via Max/Jitter with multiple devices to allow for quick prototyping of advanced OpenGL applications for real-time stage performance.

Serguei Mokhov
Miao Song
Sudhir Mudur
Peter Grogono
Concordia University

curated content

A Processing Primer for Artists

Monday, 31 July, 2-3:30 pm

This workshop is a hand-on programming primer for artists and designers who are interested in using programming and computational thinking as creative tools.

Susan Reiser
University of North Carolina at Asheville

Phil Conrad
University of California Santa Barbara

Troubleshooting and Cleanup Techniques for 3D Printing

Monday, 31 July, 3:45-5:15 pm

Learn hands-on techniques for identifying and cleaning up geometry for 3D printing. Explore the most commonly encountered problems, discover how they are created and how they can be fixed, and develop a fluent understanding of the best practices to avoid them.

Lance Winkel
University of Southern California

curated content

Animal Drawing with Gary Geraths and "Tiny"

Tuesday, 1 August, 9 am-Noon

This workshop is designed to improve dynamic sketching by teaching the gestural, anatomical, and structural nature of animals. The "model" is Tiny, a three-year old, 12-foot giraffe.

Gary Geraths
Otis College of Art and Design

curated content

WebAR: Creating Augmented Reality Experiences on Smart Glasses and Mobile Device Browsers

Tuesday, 1 August, 10:45 am-12:15 pm

This workshop teaches participants how to view and create AR experiences using WebAR. Unlike AR SKDs, WebAR runs in web browsers requiring no native app download. Participants will build AR experiences in HTML5 and share their creations online. Join us as we augment the web!

Pablo Mendigochea
HoloLeo Studios

curated content

Comparing Screen Printing and Direct-to-Garment Technologies using Digital Workflows

Tuesday, 1 August, 2-3:30 pm

This workshop reviews the complete process involved with screen printing from start to finish, and compares it with the process of direct-to-garment printing. Also, learn best practices for designing t-shirts with DTG technology, and submit an entry in the Studio T-Shirt Design Contest following the "Cyborg Self" theme.

Eddie Murphy
Matt Kochanowski
Epson America, Inc.

curated content

Pursuing Perfect Color

Tuesday, 1 August, 3:45-5:15 pm

The purpose of this workshop is to illustrate the proper technique and equipment needed for optimal color selection and color management throughout an image maker's workflow. This workshop offer hands-on review of methods and practice using the most popular imaging and output software and hardware.

Bruce Wright
Xrite.com

curated content

Animal Drawing with Gary Geraths and "Tiny"

Wednesday, 2 August, 9-Noon

This workshop is designed to improve dynamic sketching by teaching the gestural, anatomical, and structural nature of animals. The "model" is Tiny, a three-year old, 12-foot giraffe.

Gary Geraths
Otis College of Art and Design

curated content

Real-Time Cinematics & Storytelling

Wednesday, 2 August, 10:45 am-12:15 pm

This workshop allows users to evaluate this technology for a variety of applications, including interactive experiences, XR, games and gameplay cutscenes, film VFX, storyboarding, virtual set design, eSports broadcast, and more.

Adam Myhill
Unity3d

curated content

Knitted Finger Sensors

Wednesday, 2 August, 2-5:15 pm

With this workshop, you'll assemble a pre-knitted finger sensor to fit your digit. No sewing skill needed.

Jesse Seay
Columbia College Chicago

curated content

Getting Your Monitor and Inkjet Print to Match – Color Management and Printing

Thursday, 3 August, 2-3:30 pm

This workshop shows an inkjet print that matches the monitor, and how to achieve it, as well as how practical it is to execute. You'll also learn, in plain terms, color management you can use, and alternative workflows for pleasing prints.

Eddie Murphy
Epson America, Inc.

STUDIO PROJECTS

EDUCATORS

ActMold: Rapid Prototyping of Electronic Circuits on 2.5D Objects With Interactive Vacuum Forming

In this method for prototyping 2.5D objects with electronic circuits, users print circuits with conductive ink, then use vacuum forming and heated molds to create objects such as an illuminating badge and a speaking mask.

Junichi Yamaoka
Yasuaki Kakehi
Keio University

Yoshihiro Kawahara
The University of Tokyo

AR/VR

Interactive Systems Based on Electrical Muscle Stimulation

In this hands-on demonstration of several interactive systems based on electrical muscle stimulation, wearable devices allow attendees to, for example, transform their arms in interactive plotters, physically learn how to manipulate objects they have never seen before, feel walls and forces in virtual reality, etc.

Pedro Lopes
Patrick Baudisch
Hasso-Plattner-Institut für Softwaresystemtechnik GmbH

LeviFab: Stabilization and Manipulation of Digitally Fabricated Objects for Superconductive Levitation

Superconductive levitation has not been well explored for entertainment applications. This demonstration shows levitation itself as content generated by computational fabrication and manipulation of 3D printed objects.

Yoichi Ochiai
Tatsuya Minagawa
Takayuki Hoshi
The University of Tokyo

Daitetsu Sato
Kazuki Takazawa
Amy Koike
Satoshi Hashizume
Ippei Suzuki
Atsushi Shinoda
Kazuyoshi Kubokawa
University of Tsukuba

Magnetic Plotter: A Macrotexture-Design Method Using Magnetic Rubber Sheets

Magnetic Plotter is a desktop digital-plotting machine that writes fine magnetic patterns a magnetic rubber sheet. It enables users to freely design magnetic fields with inexpensive commercially available materials as if they are drawing pictures, and when the magnetic sheets are rubbed together, unique haptic stimuli are displayed on the fingers.

Kentaro Yasu
Nippon Telegraph and Telephone Corporation

Materialization of Motions: Tangible Representation of Dance Movements for Learning and Archiving

This system fabricates tangible 3D human forms to learn and archive dance movements. It analyzes patterns of musical tempo and rhythm, combines them with dynamic dancing shapes captured by a depth camera, and outputs data to a 3D printer for tangible modeling of the dance movements.

Mose Sakashita
Kenta Suzuki
Keisuke Kalahari
Kazuki Takazawa
Yoichi Ochiai
University of Tsukuba

EDUCATORS

Textile++: Low Cost Textile Interface Using Principle of Resistive Touch Sensing

Based on the principle of resistive touch-sensing, Textile++ is a fiber-based system that can be applied to various fields, including wearable computing. It can be manufactured at very low cost compared with conventional fiber touch-sensing technology.

Keisuke Ono
Tetsuaki Baba
Shinichiro Iwamura
Akira Ogie
Tokyo Metropolitan University

Paul Haimes
National Institute of Advanced Industrial Science and Technology (AIST)

EDUCATORS

Whoa Board: Interactive Lighting for Wearables and Beyond

The Whoa Board turns electroluminescient materials into interface elements with no modification. It contains a novel touch-sensing circuit that can sense at a distance (and works through materials like fabric). It is is open-source, Arduino-IDE-compatible, and conforms to the three most wildly used hardware serial protocols.

Josh Vekhter
University of Texas at Austin, Foolish Products, LLC

Josh Gordonson
Freelance Artist

Zanzie Addington-White
Freelance Artist

Akivo Vekhter
Netscape

TALKS

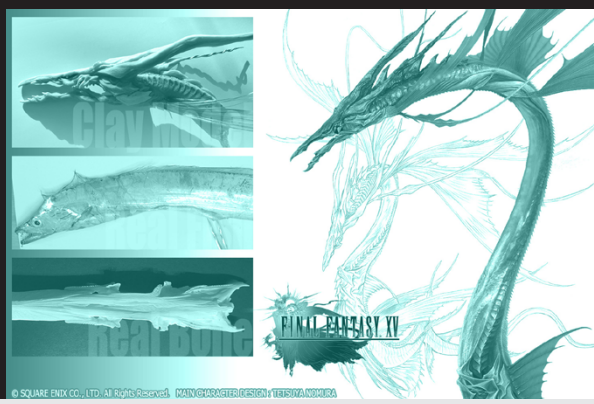
FP F

Talks 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.

curated content

ACM SIGGRAPH Organization Talks:

- UIST Reprise at SIGGRAPH 2017
- IEEE TVCG Session on Advances in Virtual and Augmented Reality
- IEEE TVCG Sesson on Advances in Data Visualization



Full Conference Platinum and Full Conference registration allows attendees access to all SIGGRAPH 2017 Talks.

Seating is on a first-come, first-served basis. Please arrive early for the Talk session you wish to attend.

Image Credit: A Fantasy Based on Reality: The Art of Final Fantasy XV (c) 2017 Tomohiro Hasegawa, Yuusaku Nakaaki, SQUARE ENIX CO.,LTD

SUNDAY, 30 JULY

PRODUCTION

THE ART OF PRODUCTION

Sunday, 30 July, 9-10:30 am

Bringing Lou to Life

Peter Tieryas
Evan Bonifacio
Henry Garcia
Stacey Truman
Victor Navone
Pixar Animation Studios

Revving Up a Storm: A Talk on Creating Jackson Storm

George Nguyen
Peter Tieryas
Jae Hyung Kim
Josh Holtsclaw
Pixar Animation Studios

The Role of Hand-Drawn Animation in Disney's "Moana"

Kimberly Keech
Rachel Bibb
Walt Disney Animation Studios

Brian Whited
Georgia Institute of Technology, The Walt Disney Company, Walt Disney Animation Studios

Brett Achorn
Walt Disney Animation Studios

A Fantasy Based on Reality: The Art of Final Fantasy XV

Tomohiro Hasegawa
Yuusaku Nakaaki
SQUARE ENIX CO., LTD

ANIMATION & VFX

IT'S COMPLICATED

Sunday, 30 July, 10:45 am-12:15 pm

Evolving Complexity Management on "The LEGO Batman Movie"

Aidan Sarsfield
Jens Jebens
Damien Gray
Simon Bull
Animal Logic

Cloudy With a Chance of Rendering

Hannes Ricklefs
Daniel Bergel
Craig Dibble
Moving Picture Company

Pauline Koh
Technicolor

James Pearson
Moving Picture Company

Animation Collaboration With Depth Compositing

Dhruv Govil
Sony Pictures Imageworks

Rendering the Darkness: Glimpse on "The LEGO Batman Movie"

Daniel Heckenberg
Luke Emrose
Matthew Reid
Michael Balzer
Antoine Roille
Animal Logic

ANIMATION & VFX

INDUSTRIAL LIGHT & MAGIC'S VISUAL DEVELOPMENT AND EFFECTS SIMULATION FOR MARVEL STUDIOS DOCTOR STRANGE

Sunday, 30 July, 10:45 am-12:15 pm

Florian Witzel
Georg Kaltenbrunner
Industrial Light & Magic

PRODUCTION

EFFECTS OMELETTE

Sunday, 30 July, 2-3:30 pm

"Rogue One: A Star Wars Story" Jedha Destruction

Ciaran Moloney
Jamie Haydock
Matthew Puchala
Miguel Perez Senent
Industrial Light & Magic

"Moana": Foundation of a Lava Monster

Marc Bryant
Jonathan Garcia
Ian Coony
Walt Disney Animation Studios

"Moana": Geometry-Based Disco Ball Lighting for Tamatoa's Lair

Dong Joo Byun
Shant Ergenian
Gregory Culp
Walt Disney Animation Studios

Building Detailed Fractal Sets for "Guardians of the Galaxy Vol. 2"

Miles Green
Matt Ebb
Daniel Heckenberg
Richard Sutherland
Aidan Sarsfield
Animal Logic

ANIMATION & VFX | GAMES

GAME ON

Sunday, 30 July, 2-3:30 pm

Gears of War 4: Custom High-End Graphics Features and Performance Techniques

Jim Malmros
The Coalition (Microsoft Studios)

HDR TV Output and Lighting Gears of War 4

Colin Matisz
Andy Yi Shen
The Coalition (Microsoft Studios)

Procedural Photograph Generation from Actual Gameplay: Snapshot AI in Final Fantasy XV

Prasert Prasertvithyakarn
Tatsuhiro Joudan
Hidekazu Kato
Seiji Nanase
Masayoshi Miyamoto
SQUARE ENIX CO.,LTD

Circular Separable Convolution Depth of Field

Kleber Garcia
Electronic Arts

CATCHING LIGHT

Sunday, 30 July, 3:45-5:15 pm

Automated Light Probes From Capture to Render for "Peter Rabbit"

Daniel Heckenberg
Steve Agland
Jean-Pascal Leblanc
Animal Logic

Raphael Barth
Indiecam GmbH

Masquerade: Fine-Scale Details for Head-Mounted Camera Motion-Capture Data

Lucio Moser
Darren Hendler
Doug Roble
Digital Domain

Just-In-Time, Viable 3D Avatars From Scans

Andrew Feng
Evan Suma Rosenberg
Ari Shapiro
USC Institute for Creative Technologies

Proxy Clouds for RGB-D Stream Processing: An Insight

Adrien Kaiser
Ayotle SAS, Télécom ParisTech, Université Paris-Saclay

José Alonso Ybanez Zepeda
Ayotle SAS

Tamy Boubekeur
Télécom ParisTech, Université Paris-Saclay

ANIMATION & VFX

I LIKE TO MOVE IT, MOVE IT

Sunday, 30 July, 3:45-5:15 pm

Muscle Simulation for Facial Animation in "Kong: Skull Island"

Matthew Cong
Lana Lan
Industrial Light & Magic

Ronald Fedkiw
Stanford University, Industrial Light & Magic

High-Performance Animation in Gears of War 4

David Bollo
The Coalition (Microsoft Studios)

Handling Scene Constraints for Pose-Based Caching

Gene Lee
Christian Eisenacher
Andy Lin
Noel Villegas
Walt Disney Animation Studios

The Eyes Have It: Comprehensive Eye Control for Animated Characters

Pilar Molina Lopez
Jake Richards
Blue Sky Studios

MONDAY, 31 JULY

curated content

THE ART OF VISUAL JOURNEY

Monday, 31 July, 9-10:30 am

Behind the Scenes of VFX in the Middle East & Syria

Eli Saliba
Mustafa Sumer Al-Barkaoui
Hind Wiakil (Via Skype from Damascus, Syria)
Lighthouse VFX

HAIR IT IS!

Monday, 31 July, 9-10:30 am

The Art and Technology of Hair Simulation in Disney's "Moana"

Marc Thyng
Christopher Evart
Toby Jones
Aleka McAdams
Walt Disney Animation Studios

Hairy Effects in "Trolls"

Brian Missey
Amaury Aubel
Arunachalam Somasundaram
Megha Davalath
DreamWorks Animation

Modeling Vellus Facial Hair From Asperity Scattering Silhouettes

Chloe Legendre
Loc Hyunh
Shanhe Wang
Paul Debevec
USC Institute for Creative Technologies

WET AND WILD

Monday, 31 July, 2-3:30 pm

The Ocean and Water Pipeline of Disney's "Moana": The Line Where the Sky Meets the Sea

Sean Palmer
Jonathan Garcia
Patrick Kelly
Ralf Habel
Walt Disney Animation Studios

"Moana": Performing Water

Ben Frost
Alexey Stomakhin
Hiroaki Narita
Walt Disney Animation Studios

The Water Effects of "Pirates of the Caribbean: Dead Men Tell No Tales"

Rob Hopper
Kai Wolter
Moving Picture Company

Racing to the Finish Line: Effects Challenges on "Cars 3"

Stephen Marshall
Tim Speltz
Greg Gladstone
Krzysztof Rost
Jon Reisch
Pixar Animation Studios

LITE BRITE

Monday, 31 July, 3:45-5:15 pm

Importance Sampling of Many Lights With Adaptive Tree Splitting

Alejandro Conty Estevez
Christopher Kulla
Sony Pictures Imageworks

The Iray Light-Transport Simulation and Rendering System

Alexander Keller
Carsten Wächter
Matthias Raab
Daniel Seibert
Dietger van Antwerpen
Johann Korndörfer
Lutz Kettner
NVIDIA Corporation

Precomputed Multiple Scattering for Light Simulation in Participating Medium

Beibei Wang
Inria, Université Grenoble Alpes, Nanjing University of Science and Technology

Nicolas Holzschuch
Inria, Université Grenoble Alpes

Double Hierarchies for Efficient Sampling in Monte Carlo Rendering

Norbert Bus
Centre National de la Recherche Scientifique, Télécom ParisTech, Université Paris-Saclay

Tamy Boubekeur
Télécom ParisTech, Université Paris-Saclay

TUESDAY, 1 AUGUST

IT'S A MATERIAL WORLD

Tuesday, 1 August, 9-10:30 am

Gears of War 4: Creating a Layered Material System for 60fps

Colin Penty
Ian Wong
The Coalition (Microsoft Studios)

DreamWorks Fabric Shading Model: From Artist Friendly to Physically Plausible

Priyamvad Deshmukh
DreamWorks Animation

Feng Xie
Stanford University, DreamWorks Animation

Fast Automatic Level of Detail for Physically Based Materials

Lutz Kettner
NVIDIA Corporation

Designing Look And Feel Using Generalized Crosshatching

Yuxiao Du
Ergun Akleman
Texas A&M University

MAKING WAVES

Tuesday, 1 August, 10:45 am-12:15 pm

"Moana": Crashing Waves

Dong Joo Byun
Alexey Stomakhin
Walt Disney Animation Studios

Production-Ready MPM Simulations

Gergely Klar
University of California, Los Angeles, DreamWorks Animation

Jeff Budsberg
DreamWorks Animation

Stephen Jones
NVIDIA Corporation, DreamWorks Animation

Ken Museth
DreamWorks Animation

Compact Iso-Surface Representation and Compression for Fluid Phenomena

Todd Keeler
Robert Bridson
The University of British Columbia

Localized Guided Liquid Simulations in Bifrost

Michael Nielsen
Konstantinos Stamatelos
Autodesk, Inc.

Adrian Graham
Google, Inc.

Marcus Nordenstam
Robert Bridson
Autodesk, Inc.

EDUCATORS *curated content*

UIST REPRISE AT SIGGRAPH 2017

Tuesday, 1 August, 10:45 am-12:15 pm

ViBand: High-Fidelity Bio-Acoustic Sensing Using Commodity Smartwatch Accelerometers
(UIST 2016 Best Paper and Best Talk awards)

Gierad Laput
Robert Xiao
Chris Harrison
Carnegie Mellon University

proCover: Sensory Augmentation of Prosthetic Limbs Using Smart Textile Covers
(UIST 2016 Best Paper award)

Joanne Leong
Patrick Parzer
Florian Perteneder
Teo Babic
Christian Rendl
Anita Vogl
Hubert Egger
Fachhochschule Oberösterreich

Alex Olwal
Google, Inc.

Michael Haller
Fachhochschule Oberösterreich

NormalTouch and TextureTouch: High-Fidelity 3D Haptic Shape Rendering on Handheld Virtual Reality Controllers
(UIST 2016 Honorable Mention)

Hrvoje Benko
Christian Holz
Mike Sinclair
Eyal Ofek
Microsoft Research

AggreGaze: Collective Estimation of Audience Attention on Public Displays
(UIST 2016 Honorable Mention)

Yusuke Sugano
Xucong Zhang
Andreas Bulling
Max-Planck-Institut für Informatik

Metamaterial Mechanisms
(UIST 2016 Honorable Mention)

Alexandra Ion
Johannes Frohnhofen
Ludwig Wilhelm Wall
Robert Kovacs
Mirela Alistar
Jack I. C. Lindsay
Pedro Lopes
Hsiang-Ting Chen
Patrick Baudisch
Hasso-Plattner-Institut für Softwaresystemtechnik GmbH

CircuitStack: Supporting Rapid Prototyping and Evolution of Electronic Circuits
(UIST 2016 Best Talk award)

Chiuan Wang
Hsuan-Ming Yeh
Bryan Wang
Te-Yen Wu
Hsin-Ruey Tsai
Rong-Hao Liang
Yi-Ping Hung
Mike Y. Chen
National Taiwan University

AR/VR *curated content*

IEEE TVCG SESSION ON ADVANCES IN VIRTUAL AND AUGMENTED REALITY

Tuesday, 1 August, 2-3:30 pm
Session Chair: Dieter Schmalstieg, Technische Universität Graz

Optimal Camera Placement for Motion Capture Systems

Pooya Rahimian
Joseph K. Kearney
University of Iowa

The Problem of Persistence With Rotating Displays

Matthew Regan
Monash University

Gavin S. P. Miller
Adobe Systems Inc.

Wide Field of View Varifocal Near-Eye Display Using See-Through Deformable Membrane Mirrors

David Dunn
Cary Tippets
Kent Torell
University of North Carolina at Chapel Hill

Petr Kellnhofer
Max-Planck-Institut für Informatik

Kaan Aksit
NVIDIA Research

Piotr Didyk
Karol Myszkowski
Petr Kellnhofer
Max-Planck-Institut für Informatik

David Luebke
NVIDIA Research

Henry Fuchs
University of North Carolina at Chapel Hill

MR360: Mixed Reality Rendering for 360° Panoramic Videos

Taehyun Rhee
Lohit Petikam
Benjamin Allen
Andrew Chalmers
Victoria University of Wellington

EDUCATORS

INTERDISCIPLINARY CIRCUS

Tuesday, 1 August, 2-3:30 pm

Interdisciplinary Study of Reflectance Transformation Imaging Processes for the Creation of Normal Map Libraries from High-Resolution Scan Data

David Halbstein
Nitin Sampat
Martin Pietras
Rochester Institute of Technology

3D Across Media: Ceramics, Print and VR

Julieta Aguilera
Plymouth University

Jonathon Goebel
Monika Mann
University of Hawaii

Is This Possible? Massive Online Inter-institutional Student Production

Miho Aoki
University of Alaska Fairbanks

William Joel
Western Connecticut State University

Anna Ursyn
University of Northern Colorado

Jacob Pollak
Ferris State University

AR/VR *curated content*

VR/AR TO GO

Tuesday, 1 August, 3:45-5:15 pm

A New (Virtual) Reality at The New York Times

Graham Roberts
The New York Times

Evolution of AR in Pokémon GO

Edward Wu
Phil Keslin
Dennis Hwang
Tatsuo Nomura
Niantic Labs

How VR Changes the Sense of Ourselves & Reality

Kent Bye
Voices of VR Podcast

curated content

IEEE TVCG SESSION ON ADVANCES IN DATA VISUALIZATION

Tuesday, 1 August, 3:45-5:15 pm
Session Chair: Leila De Floriani, University of Maryland at College Park

Direct Multifield Volume Ray Casting of Fiber Surfaces

Kui Wu
University of Utah

Aaron Knoll
University of Utah and Argonne National Laboratory

Benjamin J. Isaac
University of Utah

Hamish Carr
University of Leeds

Valerio Pascucci
University of Utah

Jacobi Fiber Surfaces for Bivariate Reeb Space Computation

Julien Tierny
Sorbonne Universités and CNRS

Hamish Carr
University of Leeds

Correlated Photon Mapping for Interactive Global Illumination of Time-Varying Volumetric Data

Daniel Jonsson
Anders Ynnerman
Linköpings universitet

Urban Pulse: Capturing the Rhythm of Cities

Fabio Miranda
Harish Doraiswamy
New York University

Marcos Lage
Universidade Federal Fluminense

Kai Zhao
Bruno Gonçalves
New York University

Luc Wilson
Mondrian Hsieh
Kohn Pedersen Fox Associates PC

Cláudio T. Silva
New York University

WEDNESDAY, 2 AUGUST

ALT. WORKFLOWS

Wednesday, 2 August, 9-10:30 am

Director-Centric Virtual-Camera Production Tools for Rogue One

Mike Jutan
Steve Ellis
Lucasfilm, Industrial Light & Magic

Smash And Grab: Off-The-Rails Filmmaking at Pixar

Vincent Serritella
Jason Kim
David Lally
Farhez Rayani
Matthew Silas
Brian Larsen
Pixar Animation Studios

LAIKA's Digital Big Boards

Jeff Stringer
Owen Nelson
Tony Aiello
LAIKA

"VarCity - the Video": the Struggles and Triumphs of Leveraging Fundamental Research Results in a Graphics Video

Kenneth Vanhoey
Carlos Eduardo Porto de Oliveira
Hayko Riemenschneider
Andrrás Bódis-Szomorú
Santiago Manén-Freixa
Danda Pani Paudel
Michael Gygli
Nikolay Kobyshev
Till Kroeger
Dengxin Dai
Luc Van Gool
ETH Zürich

ART EDUCATORS

MAKE ME A DESIGN

Wednesday, 2 August, 10:45 am-12:15 pm

Programmable Buildings

Andrzej Zarzycki
Martina Decker
New Jersey Institute of Technology

Concept Through Creation: Establishing a 3D Design Process in the Footwear Industry

Jochen Suessmuth
Sky Asay
Conor Fitzgerald
Mario Poerner
Davoud Ohadi
Detlef Müller
Adidas Group

Resynthesizing Reality: Driving Vivid Virtual Environments From Sensor Networks

Don Derek Haddad
Gershon Dublon
Brian Mayton
Massachusetts Institute of Technology

Xiao Xiao
Spencer Russell
MIT Media Lab

Ken Perlin
New York University

Joseph Paradiso
MIT Media Lab

PRODUCTION

PROCEDURAL WITH CAUTION

Wednesday, 2 August, 10:45 am-12:15 pm

Interactive Environment Creation With Sprout

Daniela Hasenbring
Jeremy Hoey
Sony Pictures Imageworks

A Hybrid Approach to Procedural Tree Skeletonization

James Bartolozzi
Matt Kuruc
Pixar Animation Studios

Build Your Own Procedural Grooming Pipeline

Wanho Choi
Dexter Studios

FurCollide: Fast, Robust, and Controllable Fur Collisions With Meshes

Arunachalam Somasundaram
DreamWorks Animation

AR/VR EDUCATORS

IT'S ALIVE! ALTERNATIVE IMMERSIONS

Wednesday, 2 August, 2-3:30 pm

Field Trip to Mars

Andy Rowan-Robinson
Framestore

Dear Angelica: Breathing Life into VR Illustrations

Robert Chen
Oculus Story Studio

Two Novel Approaches to Visualizing Internal and External Anatomy of The Cardiac Cycle with A Windowed Virtual Heart Model

Dave Mauriello
Drexel University

THURSDAY, 3 AUGUST

PRODUCTION

PIPE DREAMS

Thursday, 3 August, 9-10:30 am

Large-Scale VFX Pipelines

Justin Israel
Weta Digital

Matthew Chambers
Zorroa

Andrew Wright
Weta Digital

From VFX Project Management to Predictive Forecasting

Hannes Ricklefs
Stefan Puschendorf
Moving Picture Company

Brian Eriksson
Sandilya Bhamidipati
Akshay Pushparaja
Technicolor SA

Flexible Pipeline for Crowd Production

Mungo Pay
Martin Prazak
Damien Maupu
Double Negative

Beyond "Cosmos Laundromat": Blender's Open-Source Studio Pipeline

Ton Roosendaal
Francesco Siddi
Blender Institute

PRODUCTION AR/VR

REALITIES OF VR PRODUCTION

Thursday, 3 August, 9-10:30 am

The Making of Google Earth VR

Dominik Kaeser
Google, Inc.

Building an Animation Pipeline for VR Stories

Carlos Diaz-Padron
Bruna Berford
Devon Penney
Terry Kaleas
Irem Oz
Penrose Studios, Inc.

Visual Effects for VR

Chris Healer
Audra Coulombe
The Molecule

PARTLY CROWDY

Thursday, 3 August, 10:45 am-12:15 pm

Building Moana's Kakamora Barge: You're Gonna Need a Bigger Boat

Sean Palmer
Brett Achorn
Larry Wu
Walt Disney Animation Studios

PackIT. Animating Complicated Character Groups Easily

Melt van der Spuy
Sony Pictures Imageworks

Populating the Crowds in "Ferdinand"

Mark Adams
Greg Mourino
Mason Evans
Kevin Edzenga
Svetla Cavaleri
Justin Bisceglio
Blue Sky Studios

Artist-Driven Crowd Authoring Tools

Damien Maupu
Emanuele Goffredo
Nile Hylton
Mungo Pay
Martin Prazak
Double Negative

TOOLS OF THE TRADE

Thursday, 3 August, 10:45 am-12:15 pm

Optical Flow-Based Face Tracking in "The Mummy"

Curtis Andrus
Moving Picture Company

A New Contour Method for Highly Detailed Geometry

Andreas Bauer
Polygon Pictures, Inc.

Lighting Up The Smurfs' Enchanted Forest

Xinling Chen
Christopher Kulla
Lucas Miller
Alan Chen
Sony Pictures Imageworks

DON'T BE SCARED – IT'S ONLY MATH

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

Learning Light Transport the Reinforced Way

Ken Dahm
Alexander Keller
NVIDIA Corporation

Novel Algorithm for Sparse and Parallel Fast Sweeping

Ken Museth
DreamWorks Animation

Dance Motion Analysis and Editing Using Hilbert-Huang Transform

Ran Dong
Dongsheng Cai
University of Tsukuba

Nobuyoshi Asai
University of Aizu

Nature-Based Hybrid Computational Geometry System for Optimizing Aerospace-Component Structures

Danil Nagy
Autodesk, Inc.

PHYSICAL EXE STUFF

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

Optimizing VR for All Users Through Adaptive Focus Displays

Nitish Padmanaban
Robert Konrad
Stanford University

Emily Cooper
Dartmouth College

Gordon Wetzstein
Stanford University

A Case Study on Raytracing-in-the-Loop Optimization: Focal Surface Displays

Nathan Matsuda
Alexander Fix
Douglas Lanman
Oculus Research

Beyond Foveal Rendering: Smart Eye-Tracking-Enabled Networking (SEEN)

Konrad Tollmar
Pietro Lungaro Lungaro
Ashutosh Mittal
Alfredo Fanghella
KTH Royal Institute of Technology

Headset Removal for Virtual and Mixed Reality

Christian Frueh
Avneesh Sud
Vivek Kwatra
Google, Inc., Google Research

SEE THE SPACE SHUTTLE ENDEAVOUR UP CLOSE

SIGGRAPH 2017

@ RECEPTION

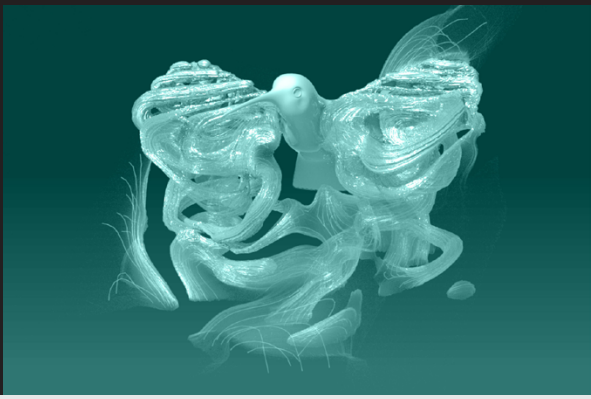
at the California Science Center
Monday, 31 July, 8-10 pm

TECHNICAL PAPERS

FP F

The SIGGRAPH Technical Papers program 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 Technical Papers Fast Forward session, and expanded descriptions in the Technical Papers sessions throughout the conference.

Technical papers are published as a special issue of *ACM Transactions on Graphics*. In addition to papers selected by the SIGGRAPH 2017 Technical Papers Jury, the conference presents papers that have been published in *ACM Transactions on Graphics* during the past year.



Full Conference Platinum and Full Conference Access registration allows attendees access to all SIGGRAPH 2017 Technical Papers.

Seating is on a first-come, first-served basis. Please arrive early for the Technical Papers you wish to attend.

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FP F

TECHNICAL PAPERS FAST FORWARD

Sunday, 30 July, 6-8 pm

An entertaining, illuminating summary of SIGGRAPH 2017 Technical Papers.

Sponsored by Adobe Systems, Inc.

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MONDAY, 31 JULY

IMAGINATIVE IMAGING

Monday, 31 July, 9-10:30 am
Session Chair: Sylvain Paris, Adobe

CoLux: Multi-Object 3D Mirco-Motion Analysis Using Speckle Imaging

Brandon Smith
Pratham Desai
Vishal Agarwal
Mohit Gupta
University of Wisconsin-Madison

4D Imaging Through Spray-On Optics

Julian Iseringhausen
Rheinische Friedrich-Wilhelms-Universität Bonn

Bastian Goldlücke
Universität Konstanz

Nina Pesheva
Stanimir Iliev
Bulgarian Academy of Sciences

Alexander Wender
Universität Stuttgart

Martin Fuchs
Hochschule der Medien Stuttgart

Matthias Hullin
Rheinische Friedrich-Wilhelms-Universität Bonn

Rainbow Particle Imaging Velocimetry for Dense 3D Fluid Velocity Imaging

Jinhui Xiong
Ramzi Idoughi
Andres Aguirre-Pablo
Abdulrahman Aljedaani
Xiong Dun
Qiang Fu
Sigurdur Thoroddsen
King Abdullah University of Science and Technology

Wolfgang Heidrich
King Abdullah University of Science and Technology, The University of British Columbia

Epipolar Time of Flight Imaging

Supreeth Achar
Joseph R. Bartels
William L. (Red), Whittaker
Carnegie Mellon University

Kiriakos N. Kutulakos
University of Toronto

Srinivasa G. Narasimhan
Carnegie Mellon University

MAPPINGS AND DEFORMATIONS

Monday, 31 July, 9-10:30 am
Session Chair: Ofir Weber, Bar Ilan University

Scalable Locally Injective Mappings

Michael Rabinovich
Roi Poranne
ETH Zürich

Daniele Panozzo
New York University

Olga Sorkine-Hornung
ETH Zürich

Geometric Optimization via Composite Majorization

Anna Shtengel
Weizmann Institute of Science

Roi Poranne
Olga Sorkine-Hornung
ETH Zürich

Shahar Kovalsky
Duke University

Yaron Lipman
Weizmann Institute of Science

Variance-Minimizing Transport Plans for Inter-Surface Mappings

Manish Mandad
Rheinisch-Westfälische Technische Hochschule Aachen

David Cohen-Steiner
Inria

Leif Kobbelt
Rheinisch-Westfälische Technische Hochschule Aachen

Pierre Alliez
Inria

Mathieu Desbrun
California Institute of Technology

Regularized Kelvinlets: Sculpting Brushes Based on Fundamental Solutions of Elasticity

Fernando de Goes
Pixar Animation Studios

Doug L. James
Stanford University

LEARNING TO MOVE

Monday, 31 July, 9-10:30 am
Session Chair: Karan Singh, University of Toronto

GAMES

DeepLoco: Dynamic Locomotion Skills Using Hierarchical Deep Reinforcement Learning

Xue Bin Peng
Glen Berseth
The University of British Columbia

KangKang Yin
National University of Singapore

Michiel van de Panne
The University of British Columbia

GAMES

Phase-Functioned Neural Networks for Character Control

Daniel Holden
Taku Komura
University of Edinburgh

Jun Saito
Method Studios

Learning to Schedule Control Fragments for Physics-Based Characters Using Deep Q-Learning

Libin Liu
Disney Research Pittsburgh

Jessica Hodgins
Carnegie Mellon University

Discovering and Synthesizing Humanoid Climbing Movements

Kourosh Naderi
Joose Rajamäki
Perttu Hämäläinen
Aalto University

GET MORE OUT OF YOUR PHOTO

Monday, 31 July, 3:45-5:35 pm
Session Chair: George Drettakis, Inria, Université Côte d'Azur

VNect: Real-Time 3D Human-Pose Estimation With a Single RGB Camera

Dushyant Mehta
Max Planck Institut für Informatik, Universität des Saarlandes

Srinath Sridhar
Oleksandr Sotnychenko
Helge Rhodin
Max Planck Institut für Informatik

Mohammad Shafiei
Universität des Saarlandes, Max Planck Institut für Informatik

Hans-Peter Seidel
Weipeng Xu
Max Planck Institut für Informatik

Dan Casas
Universidad Rey Juan Carlos

Christian Theobalt
Max Planck Institut für Informatik, Max Planck Center for Visual Computing and Communication

Real-Time Geometry, Albedo and Motion Reconstruction Using a Single RGBD Camera

Kaiwen Guo
Feng Xu
Tsinghua University

Tao Yu
Beihang University

Xiaoyang Liu
Qionghai Dai
Yebin Liu
Tsinghua University

Modeling Surface Appearance from a Single Photograph Using Self-Augmented Convolutional Neural Networks

Xiao Li
Microsoft Research Asia, University of Science and Technology of China

Yue Dong
Microsoft Research Asia

Pieter Peers
College of William & Mary

Xin Tong
Microsoft Research

Virtual Rephotography: Novel View Prediction Error for 3D Reconstruction

Michael Waechter
Mate Beljian
Simon Fuhrmann
Nils Moehrle
Technische Universität Darmstadt

Johannes Kopf
Facebook, Inc.

Michael Goesele
Technische Universität Darmstadt

Computational Zoom: A Framework for Post-Capture Image Composition

Abhishek Badki
University of California, Santa Barbara

Orazio Gallo
Jan Kautz
NVIDIA Research

Pradeep Sen
University of California, Santa Barbara

PEOPLE POWER

Monday, 31 July, 3:45-5:35 pm
Session Chair: Eakta Jain, University of Florida

Movie Editing and Cognitive Event Segmentation in Virtual Reality Video

Ana Serrano
Universidad de Zaragoza

Vincent Sitzmann
Stanford University

Jaime Ruiz-Borau
Universidad de Zaragoza

Gordon Wetzstein
Stanford University

Diego Gutierrez
Belen Masia
Universidad de Zaragoza

Sequential Line Search for Efficient Visual Design Optimization by Crowds

Yuki Koyama
Issei Sato
Daisuke Sakamoto
Takeo Igarashi
The University of Tokyo

PERFORM: Perceptual Approach for Adding OCEAN Personality to Human Motion Using Laban Movement Analysis

Norman Badler
University of Pennsylvania

Funda Durupinar
Oregon Health & Science University

Mubbasir Kapadia
Rutgers University

Susan Deutsch
Drexel University

Michael Neff
University of California Davis

Understanding the Impact of Animated Gesture Performance on Personality Perceptions

Harrison Jesse Smith
Michael Neff
University of California, Davis

Saccade Landing Position Prediction for Gaze-Contingent Rendering

Elena Arabadzhiyska
Universität des Saarlandes, Max Planck Institut für Informatik

Okan Tursun
Karol Myszkowski
Hans-Peter Seidel
Max Planck Institut für Informatik

Piotr Didyk
Universität des Saarlandes

COMPARING 3D SHAPES AND PARTS

Monday, 31 July, 3:45-5:35 pm
Session Chair: Niloy Mitra, University College London

Co-Locating Style-Defining Elements on 3D Shapes

Ruizhen Hu
Shenzhen University

Wenchao Li
Shenzhen Institute of Advanced Technology

Oliver Van Kaick
Carleton University

Hui Huang
Shenzhen Institute of Advanced Technology

Melinos Averkiou
University of Cyprus

Daniel Cohen-Or
Tel Aviv University

Hao Zhang
Simon Fraser University

Deformation-Driven Shape Correspondence via Shape Recognition

Chenyang Zhu
Renjiao Yi
Simon Fraser University
National University of Defense Technology

Wallace Lira
Ibraheem Alhashim
Simon Fraser University

Kai Xu
National University of Defense Technology

Hao (Richard) Zhang
Simon Fraser University

GRASS: Generative Recursive Autoencoders for Shape Structures

Jun Li
Kai Xu
National University of Defense Technology

Siddhartha Chaudhuri
Indian Institute of Technology Bombay

Ersin Yumer
Adobe Research

Hao (Richard) Zhang
Simon Fraser University

Leonidas Guibas
Stanford University

Retrieval on Parametric Shape Collections

Adriana Schulz
Massachusetts Institute of Technology, Instituto Nacional de Matemática Pura e Aplicada

Ariel Shamir
Interdisciplinary Center Herzliya

Ilya Baran
Onshape Inc.

David I.W. Levin
University of Toronto

Pitchaya Sitthi-Amorn
Chulalongkorn University

Wojciech Matusik
Massachusetts Institute of Technology

Understanding and Exploiting Object Interaction Landscapes

Sören Pirk
Stanford University

Vojtech Krs
Kaimo Hu
Suren Deepak Rajasekaran
Hao Kang
Bedrich Benes
Purdue University

Yusuke Yoshiyasu
Centre national de la recherche scientifique

Leonidas Guibas
Stanford University

TUESDAY, 1 AUGUST

CLEVER SOLIDS

Tuesday, 1 August, 9-10:30 am
Session Chair: Adam Bargteil, University of Maryland, Baltimore County

Example-Based Damping Design

Hongyi Xu
Jernej Barbič
University of Southern California

Data-Driven Physics for Human Soft Tissue Animation

Meekyoung Kim
Korea Advanced Institute of Science and Technology

Gerard Pons-Moll
Sergi Pujades
Max-Planck-Institut für Intelligente Systeme

Seungbae Bang
Korea Advanced Institute of Science and Technology

Jinwook Kim
Korea Institue of Science and Technology

Michael Black
Max-Planck-Institut für Intelligente Systeme

Sung-Hee Lee
Korea Advanced Institute of Science and Technology

Robust eXtended Finite Elements for Complex Cutting of Deformables

Dan Koschier
Jan Bender
RWTH Aachen University

Nils Thuerey
Technical University of Munich

A Multi-Scale Model for Simulating Hair-Water Interactions

Yun Fei
Henrique Maia
Columbia University

Christopher Batty
University of Waterloo

Changxi Zheng
Eitan Grinspun
Columbia University

BEING DISCRETE ABOUT GEOMETRY PROCESSING

Tuesday, 1 August, 9-10:30 am
Session Chair: Alec Jacobson, University of Toronto

Bounding Proxies for Shape Approximation

Stéphane Calderon
Tamy Boubekeur
Télécom ParisTech, Université Paris-Saclay

Spatiotemporal Atlas Parameterization for Evolving Meshes

Fabian Prada
Michael Kazhdan
The Johns Hopkins University

Ming Chuang
Alvaro Collet
Hugues Hoppe
Microsoft Corporation

FlowRep: Descriptive Curve Networks for Free-Form Design Shapes

Giorgio Gori
Alla Sheffer
The University of British Columbia

Nathan Carr
Adobe Systems Incorporated

Tao Ju
Washington University in St. Louis

Nicholas Vining
Enrique Rosales
The University of British Columbia

Functional Characterization of Intrinsic and Extrinsic Geometry

Etienne Corman
École Polytechnique

Justin Solomon
Massachusetts Institute of Technology

Mirela Ben-Chen
Technion – Israel Institute of Technology

Leonidas Guibas
Stanford University

Maks Ovsjanikov
École Polytechnique

COLOR & COMPOSITING

Tuesday, 1 August, 10:45 am-12:35 pm
Session Chair: Ariel Shamir, The Interdisciplinary Center, Herzliya

Constrained Palette-Space Exploration

Nicolas Mellado
Institut de Recherche en Informatique de Toulouse, Université Paul Sabatier, Centre national de la recherche scientifique

David Vanderhaeghe
Institut de Recherche en Informatique de Toulouse, Université Paul Sabatier

Charlotte Hoarau
Sidonie Christophe
Mathieu Bredif
Institut national de l'information géographique et forestière

Loïc Barthe
Institut de Recherche en Informatique de Toulouse, Université Paul Sabatier

Playful Palette: An Interactive Parametric Color Mixer for Artists

Maria Shugrina
Adobe Research, University of Toronto

Jingwan Lu
Stephen DiVerdi
Adobe Research

Decomposing Images into Layers via RGB-Space Geometry

Jyh-Ming Lien
Jianchao Tan
Yotam Gingold
George Mason University

Interactive High-Quality Green-Screen Keying via Color Unmixing

Tunc Aydin
Disney Research

Yagiz Aksoy
Marc Pollefeys
ETH Zürich

Aljoscha Smolic
Trinity College Dublin

Unmixing-Based Soft Color Segmentation for Image Manipulation

Tunc Aydin
Disney Research

Yagiz Aksoy
ETH Zürich

Aljoscha Smolic
Trinity College Dublin

Marc Pollefeys
ETH Zürich

FABRICATING CURVES, SURFACES & VOLUMES

Tuesday, 1 August, 10:45 am-12:35 pm
Session Chair: Dave Levin, The University of Toronto

Computational Design and Automated Fabrication of Kirchhoff-Plateau Surfaces

Jesús Pérez Rodríguez
Miguel A. Otaduy
Universidad Rey Juan Carlos

Bernhard Thomaszewski
Disney Research Zürich

Image-Based Reconstruction of Wire Art

Lingjie Liu
The University of Hong Kong, University College London

Duygu Ceylan
Adobe Research

Cheng Lin
Wenping Wang
The University of Hong Kong

Niloy Mitra
University College London

CurveUps: Shaping Objects from Flat Plates With Tension-Actuated Curvature

Ruslan Guseinov
Eder Miguel
Bernd Bickel
Institute of Science and Technology Austria

String Actuated Curved Folded Surfaces

Martin Kilian
Aron Monszpart
Niloy J.Mitra
University College London

Optimal Discrete Slicing

Marc Alexa
Technische Universität Berlin

Kristian Hildebrand
Beuth Hochschule für Technik Berlin

Sylvain Lefebvre
Inria

REFLECTANCE & SCATTERING

Tuesday, 1 August, 10:45 am-12:15 pm
Session Chair: Matthias Hullin, University of Bonn

Practical Acquisition and Rendering of Diffraction Effects in Surface Reflectance

Antoine Toisoul
Abhijeet Ghosh
Imperial College London

A Practical Extension to Microfacet Theory for the Modeling of Varying Iridescence

Laurent Belcour
Unity Technologies

Pascal Barla
Inria

A Two-Scale Microfacet Reflectance Model Combining Reflection and Diffraction

Nicolas Holzschuch
Inria Grenoble, Université Grenoble Alpes

Romain Pacanowski
Inria, Institut d'Optique Graduate School

An Efficient and Practical Near and Far Field Fur Reflectance Model

Ling-Qi Yan
University of California, Berkeley

Henrik Wann Jensen
Ravi Ramamoorthi
University of California, San Diego

FLUID CONTROL & SYNTHESIS

Tuesday, 1 August, 2-3:30 pm
Session Chair: Chris Wojtan, IST Austria

Fluxed Animation Boundary Method

Alexey Stomakhin
Andrew Selle
Walt Disney Animation Studios

Efficient Solver for Spacetime Control of Smoke

Dinesh Manocha
Zherong Pan
University of North Carolina at Chapel Hill

Interpolations of Smoke and Liquid Simulations

Nils Thuerey
Technische Universität München

Data-Driven Synthesis of Smoke Flowers with CNN-Based Feature Descriptions

Mengyu Chu
Nils Thuerey
Technische Universität München

LEARNING & ANALYSIS FOR GEOMETRY

Tuesday, 1 August, 2-3:30 pm
Session Chair: Justin Solomon, Massachusetts Institute of Technology

Learning Hierarchical Shape Segmentation and Labeling from Online Repositories

Li Yi
Leonidas Guibas
Stanford University

Aaron Hertzmann
Vladimir Kim
Adobe Research

Hao Su
Stanford University

Ersin Yumer
Adobe Research

Convolutional Neural Networks on Surfaces via Seamless Toric Covers

Haggai Maron
Meirav Galun
Noam Aigerman
Miri Trope
Nadav Dym
Weizmann Institute of Science

Ersin Yumer
Vladimir Kim
Adobe Research

Yaron Lipman
Weizmann Institute of Science

O-CNN: Octree-Based Convolutional Neural Network for Understanding 3D Shapes

Peng-Shuai Wang
Microsoft Research Asia, Tsinghua University

Yang Liu
Microsoft Research Asia

Yu-Xiao Guo
University of Electronic Science and Technology of China, Microsoft Research Asia

Chun-Yu Sun
Microsoft Research Asia, Tsinghua University

Xin Tong
Microsoft Research Asia

ClothCap: Seamless 4D Clothing Capture and Retargeting

Gerard Pons-Moll
Sergi Pujades
Max Planck Institute for Intelligent Systems, Max-Planck-Institut für Informatik

Sonny Hu
Body Labs

Michael Black
Max Planck Institute for Intelligent Systems, Max-Planck-Institut für Informatik

RENDERING IN PATH SPACE

Tuesday, 1 August, 2-3:30 pm
Session Chair: Jaakko Lehtinen, Aalto University, NVIDIA

Fusing State Spaces for Markov Chain Monte Carlo Rendering

Hisanari Otsu
The University of Tokyo

Anton Kaplanyan
NVIDIA Research

Johannes Hanika
Carsten Dachsbacher
Karlsruher Institut für Technologie

Toshiya Hachisuka
The University of Tokyo

Charted Metropolis Light Transport

Jacopo Pantaleoni
NVIDIA Corporation

A Spatial Target Function for Metropolis Photon Tracing

Adrien Gruson
University of Rennes 1

Mickaël Ribardière
Université de Poitiers

Martin Šik
Jiří Vorba
Charles University in Prague

Rémi Cozot
Kadi Bouatouch
Jaroslav Křivánek
University of Rennes 1

Antialiasing Complex Global Illumination Effects in Path-Space

Laurent Belcour
Unity Technologies

Ling-Qi Yan
University of California, Berkeley

Ravi Ramamoorthi
University of California, San Diego

Derek Nowrouzezarhai
McGill University

RECONSTRUCTING 3D SURFACES FROM POINTS, LINES, IMAGES & WATER

Tuesday, 1 August, 3:45-5:35 pm
Session Chair: Alla Sheffer, University of British Columbia

Field-Aligned Online Surface Reconstruction

Nico Schertler
New York University, Technische Universität Dresden

Marco Tarini
Università dell'Insubria, Varese

Wenzel Jakob
École Polytechnique Fédérale de Lausanne

Misha Kazhdan
The Johns Hopkins University

Stefan Gumhold
Technische Universität Dresden

Daniele Panozzo
New York University

Topology-Controlled Reconstruction of Multi-Labelled Domains from Cross-Sections

Zhiyang Huang
Ming Zou
Washington University in St. Louis

Nathan Carr
Adobe Research

Tao Ju
Washington University in St. Louis

BundleFusion: Real-Time Globally Consistent 3D Reconstruction Using On-the-Fly Surface Re-Integration

Angela Dai
Matthias Nießner
Stanford University

Michael Zollhöfer
Max-Planck-Institut für Informatik

Shahram Izadi
perceptiveIO, Inc.

Christian Theobalt
Max-Planck-Institut für Informatik

Tanks and Temples: Benchmarking Large-Scale Scene Reconstruction

Arno Knapitsch
Jaesik Park
Qian-Yi Zhou
Vladlen Koltun
Intel Labs

Dip Transform for 3D Shape Reconstruction

Kfir Aberman
Oren Katzir
Tel Aviv University, Advanced Innovation Center for Future Visual Entertainment

Qiang Zhou
Zegang Luo
Shandong University

Andrei Sharf
Advanced Innovation Center for Future Visual Entertainment

Chen Greif
The University of British Columbia

Baoquan Chen
Shandong University

Daniel Cohen-Or
Tel-Aviv University

DYNAMIC FABRICATION

Tuesday, 1 August, 3:45-5:35 pm
Session Chair: Takeo Igarashi, The University of Tokyo

Interactive Design of Animated Plushies

James Bern
Kai-Hung Chang
Stelian Coros
Carnegie Mellon University

Functionality-Aware Retargeting of Mechanisms of 3D Shapes

Ran Zhang
Thomas Auzinger
Institute of Science and Technology Austria

Duygu Ceylan
Wilmot Li
Adobe Research

Bernd Bickel
Institute of Science and Technology Austria

A Computational Design Tool for Compliant Mechanisms

Vittorio Megaro
ETH Zürich, Disney Research

Jonas Zehnder
Moritz Bächer
Disney Research

Stelian Coros
Carnegie Mellon University

Markus Gross
Disney Research

Bernhard Thomaszewski
Disney Research

Computational Design of Telescoping Structures

Christopher Yu
Keenan Crane
Stelian Coros
Carnegie Mellon University

Dynamics-Aware Numerical Coarsening for Fabrication Design

Desai Chen
Massachusetts Institute of Technology

David Levin
University of Toronto

Wojciech Matusik
Massachusetts Institute of Technology

Danny Kaufman
Adobe Research

WEDNESDAY, 2 AUGUST

AR/VR

TIME TO FOCUS

Wednesday, 2 August, 9-10:30 am
Session Chair: Elmar Eisemann, Delft University of Technology

Holographic Near-Eye Displays for Virtual and Augmented Reality

Andrew Maimone
Andreas Georgiou
Joel Kollin
Microsoft Research

Focal Surface Displays

Nathan Matsuda
Alexander Fix
Douglas Lanman
Oculus Research

Accommodation and Comfort in Head-Mounted Displays

George-Alex Koulieris
Inria, Université Côte d'Azur

Bee Bui
Martin S. Banks
University of California, Berkeley

George Drettakis
Inria, Université Côte d'Azur

Accommodation-Invariant Computational Near-Eye Displays

Robert Konrad
Nitish Padmanaban
Keenan Molner
Stanford University

Emily A. Cooper
Dartmouth College

Gordon Wetzstein
Stanford University

GLOBAL PARAMETERIZATION

Wednesday, 2 August, 9-10:30 am
Session Chair: Fernando de Goes, Pixar Animation Studios

Harmonic Global Parametrization With Rational Holonomy

Alon Bright
Edward Chien
Ofir Weber
Bar Ilan University

Spherical Orbifold Tutte Embeddings

Noam Aigerman
The Weizmann Institute of Science

Shahar Kovalsky
Duke University

Yaron Lipman
The Weizmann Institute of Science

Similarity Maps and Field-Guided T-Splines: A Perfect Couple

Marcel Campen
Denis Zorin
New York University

Consistent Functional Cross Field Design for Mesh Quadrangulation

Omri Azencot
Technion – Israel Institute of Technology

Etienne Corman
École Polytechnique

Mirela Ben-Chen
Technion – Israel Institute of Technology

Maks Ovsjanikov
École Polytechnique

SPEECH AND FACIAL ANIMATION

Wednesday, 2 August, 9-10:30 am
Session Chair: Nikunj Raghuvanshi, Microsoft Research

GAMES

A Deep Learning Approach for Generalized Speech Animation

Sarah Taylor
University of East Anglia

Taehwan Kim
California Institute of Technology

Moshe Mahler
James Krahe
Anastasio Garcia Rodriguez
Disney Research

Jessica Hodgins
Carnegie Mellon University

Yisong Yue
California Institute of Technology

Iain Matthews
Disney Research

GAMES

Audio-Driven Facial Animation by Joint End-to-End Learning of Pose and Emotion

Tero Karras
Timo Aila
Samuli Laine
NVIDIA Corporation

Antti Herva
Remedy Entertainment Ltd.

Jaakko Lehtinen
Aalto University, NVIDIA Corporation

Synthesizing Obama: Learning Lip Sync From Audio

Supasorn Suwajanakorn
Steven Seitz
Ira Kemelmacher
University of Washington

VoCo: Text-Based Insertion and Replacement in Audio Narration

Zeyu Jin
Princeton University

Gautham Mysore
Stephen DiVerdi
Jingwan Lu
Adobe Research

Adam Finkelstein
Princeton University

RENDERING SYSTEMS

Wednesday, 2 August, 10:45 am-12:35 pm
Session Chair: Toshiya Hachisuka, The University of Tokyo

Kernel-Predicting Convolutional Networks for Denoising Monte Carlo Renderings

Steve Bako
University of California, Santa Barbara

Thijs Vogels
Brian McWilliams
Disney Research Zürich

Mark Meyer
Pixar Animation Studios

Jan Novak
Disney Research Zürich

Alex Harvill
Pixar Animation Studios

Pradeep Sen
University of California, Santa Barbara

Tony DeRose
Pixar Animation Studios

Fabrice Rousselle
Disney Research Zürich

Interactive Reconstruction of Monte Carlo Image Sequences Using a Recurrent Denoising Autoencoder

Chakravarty Reddy Alla Chaitanya
McGill University, NVIDIA Research, Université de Montréal

Anton Kaplanyan
NVIDIA Research, Karlsruher Institut für Technologie

Christoph Schied
Karlsruher Institut für Technologie, NVIDIA Research

Marco Salvi
NVIDIA Research, Intel Corporation

Aaron Lefohn
NVIDIA Research

Derek Nowrouzezahrai
Université de Montréal, McGill University

Timo Aila
NVIDIA Research

A Domain Specific Language for Monte Carlo Sampling

Luke Anderson
Tzu-Mao Li
Massachusetts Institute of Technology

Jaakko Lehtinen
Aalto University

Frédo Durand
Massachusetts Institute of Technology

Shader Components: Modular and High Performance Shader Development

Yong He
Carnegie Mellon University

Tim Foley
NVIDIA Corporation

Teguh Hofstee
Carnegie Mellon University

Haomin Long
Tsinghua University

Kayvon Fatahalian
Carnegie Mellon University

A Compressed Representation for Ray Tracing Parametric Surfaces

Michael Guthe
Universität Bayreuth

Kai Selgrad
Alexander Lier
Magdalena Martinek
Friedrich-Alexander-Universität Erlangen-Nürnberg

Christoph Buchenau
Universität Bayreuth

Franziska Kranz
Henry Schafer
Marc Stamminger
Friedrich-Alexander-Universität Erlangen-Nürnberg

FLUIDS II

Wednesday, 2 August, 10:45 am-12:35 pm
Session Chair: Tamar Shinar, The University of California Riverside

Variational Stokes: A Unified Pressure-Viscosity Solver for Accurate Viscous Liquids

Egor Larionov
Side Effects Software Inc., University of Waterloo

Christopher Batty
University of Waterloo

Robert Bridson
Autodesk Inc.

Infinite Continuous Adaptive for Incompressible SPH

Rene Winchenbach
Hendrik Hochstetter
Andreas Kolb
Siegen Universität

Water Wave Packets

Chris Wojtan
Institute of Science and Technology Austria

Stefan Jeschke
Institute of Science and Technology Austria, NVIDIA Research

Multi-Scale Vorticle Fluids

Alexis Angelidis
Pixar Animation Studios

Multi-Species Simulation of Porous Sand and Water Mixtures

Andre Pradhana Tampubolon
Theodore Gast
University of California, Los Angeles

Gergely Klár
DreamWorks Animation

Chuyuan Fu
University of California, Los Angeles

Joseph Teran
Walt Disney Animation Studios, Disney Research, University of California, Los Angeles

Chenfanfu Jiang
University of California, Los Angeles

Ken Museth
DreamWorks Animation

IMAGE TEXTURE & COMPLETION

Wednesday, 2 August, 10:45 am-12:35 pm
Session Chair: Maneesh Agrawala, Stanford University

Programmable 2D Arrangements for Element Texture Design

Hugo Loi
Inria

Thomas Hurtut
École Polytechnique de Montréal

Romain Vergne
Joelle Thollot
Centre national de la recherche scientifique, Inria, Université Grenoble Alpes

Deep Correlations for Texture Synthesis

Daniel Cohen-Or
Omry Sendik
Tel Aviv University

Patch-Based Optimization for Image-Based Texture Mapping

Sai Bi
Nima Khademi Kalantari
Ravi Ramamoorthi
University of California, San Diego

Globally and Locally Consistent Image Completion

Satoshi Iizuka
Edgar Simo-Serra
Waseda University

Hiroshi Ishikawa
Waseda University Fundamental Science and Engineering

Nautilus: Recovering Regional Symmetry Transformations for Image Editing

Michal Lukáč
Adobe Research

Daniel Sýkora
Czech Technical University in Prague

Kalyan Sunkavalli
Eli Shechtman
Adobe Research

Ondřej Jamriška
Czech Technical University in Prague

Nathan Carr
Adobe Research

Tomáš Pajdla
Czech Technical University in Prague

RENDERING VOLUMES

Wednesday, 2 August, 2-3:30 pm
Session Chair: Holly Rushmeier, Yale University

A Forward Scattering Dipole Model from a Functional Integral Approximation

Roald Frederickx
Philip Dutré
Katholieke Universiteit Leuven

Lighting Grid Hierarchy for Self-Illuminating Explosions

Can Yuksel
Industrial Light and Magic

Cem Yuksel
University of Utah

Spectral Decomposition Tracking for Rendering Heterogeneous Volumes

Peter Kutz
Ralf Habel
Yining Karl Li
Walt Disney Animation Studios

Jan Novak
Disney Research Zürich

Beyond Points and Beams: Higher-Dimensional Photon Samples for Volumetric Light Transport

Benedikt Bitterli
Wojciech Jarosz
Dartmouth College

MESHING

Wednesday, 2 August, 2-3:30 pm
Session Chair: Mirela Ben-Chen, Technion – Israel Institute of Technology

Regular Meshes from Polygonal Patterns

Amir Vaxman
Universiteit Utrecht

Christian Müller
Technische Universität Wien

Ofir Weber
Bar Ilan University

Robust Hex-Dominant Mesh Generation Using Field-Guided Polyhedral Agglomeration

Xifeng Gao
University of Houston, New York University

Wenzel Jakob
École Polytechnique Fédérale de Lausanne

Marco Tarini
Università degli Studi dell'Insubria, Consiglio Nazionale delle Ricerche

Daniele Panozzo
New York University

Hexahedral-Dominant Meshing

Dmitry Sokolov
Université de Lorraine

Nicolas Ray
Lionel Untereiner
Bruno Levy
Inria Nancy - Grand-Est

Boundary Element Octahedral Fields in Volumes

Justin Solomon
Massachusetts Institute of Technology

Amir Vaxman
Universiteit Utrecht

David Bommes
Rheinisch-Westfälische Technische Hochschule Aachen

SOUND & ELASTICS

Wednesday, 2 August, 2-3:30 pm
Session Chair: Ming Lin, The University of North Carolina at Chapel Hill

Interactive Sound Propagation and Rendering for Large Multi-Source Scenes

Carl Schissler
Dinesh Manocha
University of North Carolina at Chapel Hill

Animating Elastic Rods With Sound

Eston Schweickart
Cornell University

Doug James
Stanford University

Steve Marschner
Cornell University

A Stiffly Accurate Integrator for Elastodynamic Problems

Dominik Michels
King Abdullah University of Science and Technology, Stanford University

Luan Vu Thai
Mayya Tokman
University of California, Merced

Quasi-Newton Methods for Real-Time Simulation of Hyperelastic Materials

Tiantian Liu
University of Pennsylvania

Sofiren Bouaziz
École Polytechnique Fédérale de Lausanne

Ladislav Kavan
University of Utah

DEEP IMAGE PROCESSING

Wednesday, 2 August, 3:45-5:35 pm
Session Chair: Aaron Hertzmann, Adobe

Deep Extraction of Manga Structural Lines

Chengze Li
Xueting Liu
Tien-Tsin Wong
The Chinese University of Hong Kong

Deep Bilateral Learning for Real-Time Image Enhancement

Michael Gharbi
Massachusetts Institute of Technology

Jiawen Chen
Jonathan Barron
Samuel Hasinoff
Google Research

Frédo Durand
Massachusetts Institute of Technology

Real-Time User-Guided Image Colorization with Learned Deep Priors

Richard Zhang
Jun-Yan Zhu
Phillip Isola
Xinyang Geng
Angela S. Lin
Yu Tianhe
Alexei A. Efros
University of California, Berkeley

Visual Attribute Transfer Through Deep Image Analogy

Jing Liao
Microsoft Research Asia

Yuan Yao
Shanghai Jiao Tong University

Lu Yuan
Gang Hua
Microsoft Research Asia

Sing Bing Kang
Microsoft Corporation, Microsoft Research

Deep Compositing Using Lie Algebras

Tom Duff
Pixar Animation Studios

FABRICATING LOOK & FEEL

Wednesday, 2 August, 3:45-5:35 pm
Session Chair: Bernhard Thomaszewski, The University of Montreal

Two-Scale Topology Optimization With Microstructures

Bo Zhu
Melina Skouras
Desai Chen
Wojciech Matusik
Massachusetts Institute of Technology

Orthotropic k-Nearest Foams for Additive Manufacturing

Jonàs Martínez
Haichuan Song
Inria

Jérémie Dumas
Inria, Université de Lorraine

Sylvain Lefebvre
Inria

Worst-Case Stress Relief for Microstructure

Julian Panetta
Abtin Rahimian
Denis Zorin
New York University

Printing Anisotropic Appearance With Magnetic Flakes

Thiago Pereira
Princeton University

Carolina L. A. Paes Leme
Universidade Federal do Rio de Janeiro

Steve Marschner
Cornell University

Szymon Rusinkiewicz
Princeton University

Color Contoning for 3D Printing

Vahid Babaei
Kiril Vidimče
Michael Foshey
Alexandre Kaspar
Massachusetts Institute of Technology

Piotr Didyk
Max-Planck-Institut für Informatik, Universität des Saarlandes

Wojciech Matusik
Massachusetts Institute of Technology

SKETCHING & CURVES

Wednesday, 2 August, 3:45-5:35 pm
Session Chair: Yotman Gingold, George Mason University

BendSketch: Modeling Freeform Surfaces Through 2D Sketching

Changjian Li
Microsoft Research Asia, The University of Hong Kong

Hao Pan
Yang Liu
Xin Tong
Microsoft Research Asia

Alla Sheffer
The University of British Columbia

Wenping Wang
The University of Hong Kong

DeepSketch2Face: A Deep Learning Based Sketching System for 3D Face and Caricature Modeling

Xiaoguang Han
Chang Gao
Yizhou Yu
The University of Hong Kong

Example-Based Expressive Animation of 2D Rigid Bodies

Marek Dvorožňák
Czech Technical University in Prague

Pierre Bénard
Université de Bordeaux

Pascal Barla
Inria

Oliver Wang
Adobe Research

Daniel Sýkora
Czech Technical University in Prague

Skippy: Single View 3D Space Curve Interactive Modeling

Vojtech Krs
Purdue University

Ersin Yumer
Nathan Carr
Adobe Research

Bedrich Benes
Purdue University

Radomir Mech
Adobe Research

K-Curves: Interpolation at Local Maximum Curvature

Zhipei Yan
Texas A&M University

Stephen Schiller
Adobe Research

Gregg Wilensky
Adobe Systems, Incorporated

Nathan Carr
Adobe Research

Scott Schaefer
Texas A&M University

THURSDAY, 3 AUGUST

VIDEO

Thursday, 3 August, 9-10:30 am
Session Chair: Kayvon Fatahalian, Carnegie Mellon University

Time Slice Video Synthesis by Robust Video Alignment

Zhaopeng Cui
Simon Fraser University

Oliver Wang
Adobe Research

Ping Tan
Simon Fraser University

Jue Wang
Adobe Research

Computational Video Editing for Dialogue-Driven Scenes

Mackenzie Leake
Abe Davis
Stanford University

Anh Truong
Adobe Research

Maneesh Agrawala
Stanford University

Real-Time Planning for Automated Multi-View Drone Cinematography

Tobias Naegeli
Lukas Meier
ETH Zürich

Alexander Domahidi
embotech GmbH

Javier Alonso Mora
Technische Universiteit Delft

Otmar Hilliges
ETH Zürich

Light Field Video Capture Using a Learning-Based Hybrid Imaging System

Ting-Chun Wang
Jun-Yan Zhu
University of California, Berkeley

Nima Khademi Kalantari
University of California, San Diego

Alexei Efros
University of California, Berkeley

Ravi Ramamoorthi
University of California, San Diego

SIMULATION FOR VIRTUAL WORLDS

Thursday, 3 August, 9-10:30 am
Session Chair: Ken Anjyo, OLM Digital, Inc.

Fast Weather Simulation for Inverse Procedural Design of 3D Urban Models

Daniel Aliaga
Purdue University

Ignacio Garcia-Dorado
Google Research

Prashanth Bhalachandran
Paul Schmid
Dev Niyogi
Purdue University

Authoring Landscapes by Combining Ecosystem and Terrain-Erosion Simulation

Guillaume Cordonnier
Université Grenoble Alpes & CNRS (LJK), Inria

Eric Galin
Université de Lyon, Université Lyon 2, CNRS, Laboratoire d'Informatique en Images et Systèmes d'Information

James Gain
University of Cape Town

Bedrich Benes
Purdue University

Eric Guerin
Université de Lyon, Institut national des sciences appliquées de Lyon, CNRS, Laboratoire d'Informatique en Images et Systèmes d'Information

Adrien Peytavie
Université de Lyon, Université Lyon 1, CNRS, Laboratoire d'Informatique en Images et Systèmes d'Information

Marie-Paule Cani
Université Grenoble Alpes & CNRS (LJK), Inria

Botanical Materials Based on Biomechanics

Bohan Wang
Yili Zhao
Jernej Barbič
University of Southern California

Implicit Integration for Robust Collision-Free Crowd Simulation

Ioannis Karamouzas
Clemson University

Nick Sohre
Rahul Narain
Stephen J. Guy
University of Minnesota

RANDOM SAMPLING

Thursday, 3 August, 9-10:30 am
Session Chair: Li-Yi Wei, University of Hong Kong

Convergence Analysis for Anisotropic Monte Carlo Sampling Spectra

Gurprit Singh
Wojciech Jarosz
Dartmouth College

Wasserstein Blue Noise Sampling

Hongxing Qin
Yi Chen
Jinlong He
Chongqing University of Posts and Communications

Baoquan Chen
Shandong University

An Adaptive Point Sampler on a Regular Lattice

Abdalla Ahmed
Till Niese
Universität Konstanz

Hui Huang
Shenzhen University

Oliver Deussen
Shenzhen Institute of Advanced Technology, University of Konstanz

A Spherical-Cap-Preserving Parameterization for Spherical Distributions

Jonathan Dupuy
Eric Heitz
Laurent Belcour
Unity Technologies

FLUIDS III

Thursday, 3 August, 10:45 am-12:35 pm
Session Chair: Rahul Narain, University of Minnesota

A Schur Complement Preconditioner for Scalable Parallel Fluid Simulation

Jieyu Chu
Shanghai Jiao Tong University

Nafees Bin Zafar
Independent

Xubo Yang
Shanghai Jiao Tong University

Power Diagrams and Sparse Paged Grids for High Resolution Adaptive Liquids

Mridul Aanjaneya
Ming Gao
Haixiang Liu
University of Wisconsin-Madison

Christopher Batty
University of Waterloo

Eftychios Sifakis
University of Wisconsin-Madison

Generic Objective Vortices for Flow Visualization

Tobias Günther
Markus Gross
ETH Zürich

Holger Theisel
Otto-von-Guericke-Universität Magdeburg

Inside Fluids: Clebsch Maps for Visualization and Processing

Albert Chern
California Institute of Technology

Felix Knöppel
Ulrich Pinkall
Technische Universität Berlin

Peter Schröder
California Institute of Technology

Perceptual Evaluation of Liquid Simulation Methods

Kiwon Um
Xiangyu Hu
Nils Thuerey
Technische Universität München

IMAGE AND LIGHT FIELD MANIPULATION

Thursday, 3 August, 10:45 am-12:35 pm
Session Chair: Diego Gutierrez, Universidad de Zaragoza

Interactive Relighting in Single Low-Dynamic Range Images

Jung-Hsuan Wu
Suguru Saito
Tokyo Institute of Technology

Non-Uniform Spatial Deformation of Light Fields by Locally Linear Transformations

Clemens Birklbauer
Johannes Kepler Universität Linz, DAQRI

David Schedl
Oliver Bimber
Johannes Kepler Universität Linz

Deep High Dynamic Range Imaging of Dynamic Scenes

Nima Khademi Kalantari
Ravi Ramamoorthi
University of California, San Diego

Spectral Remapping for Image Downscaling

Eduardo Gastal
Manuel Oliveira
Universidade Federal do Rio Grande do Sul

Portrait Lighting Transfer Using a Mass Transport Approach

Zhixin Shu
Stony Brook University

Sunil Hadap
Eli Shechtman
Kalyan Sunkavalli
Sylvain Paris
Adobe Research

Dimitris Samaras
Stony Brook University

HUMAN MOTION

Thursday, 3 August, 10:45-11:55 am
Session Chair: Jehee Lee, Seoul National University

Multi-Contact Locomotion Using a Contact Graph With Feasibility Predictors

Changgu Kang
Sung-Hee Lee
Korea Advanced Institute of Science and Technology

Domain of Attraction Expansion for Physics-Based Character Control

Michiel van de Panne
The University of British Columbia

Mazen Al Borno
Stanford University

Eugene Fiume
Simon Fraser University

Momentum-Mapped Inverted Pendulum Models for Controlling Dynamic Human Motions

Jessica Hodgins
Carnegie Mellon University

Taesoo Kwon
Hanyang University

COMPUTATIONAL CAMERAS & DISPLAYS

Thursday, 3 August, 2-3:30 pm
Session Chair: Gordon Wetzstein, Stanford University

3DTV at Home: Eulerian-Lagrangian Stereo-to-Multi-View Conversion

Petr Kellnhofer
Max-Planck-Institut für Informatik, Massachusetts Institute of Technology

Piotr Didyk
Universität des Saarlandes, Max-Planck-Institut für Informatik

Szu-Po Wang
Massachusetts Institute of Technology

Pitchaya Sitthi-Amorn
Chulalongkorn University

William Freeman
Frédo Durand
Wojciech Matusik
Massachusetts Institute of Technology

Hiding of Phase-Based Stereo Disparity for Ghost-Free Viewing Without Glasses

Taiki Fukiage
Takahiro Kawabe
Shin'ya Nishida
NTT Communication Science Laboratories

Low-Cost 360 Stereo Photography and Video Capture

Kevin Matzen
Michael Cohen
Bryce Evans
Johannes Kopf
Richard Szeliski
Facebook, Inc.

Mixed-Primary Factorization for Dual-Frame Computational Displays

Fu-Chung Huang
NVIDIA Corporation

Dawid Pająk
Light

Jonghyun Kim
Jan Kautz
David Luebke
NVIDIA Corporation

LET'S GET IN CONTACT

Thursday, 3 August, 2-3:30 pm
Session Chair: Paul Kry, McGill University

Bounce Maps: An Improved Restitution Model for Real-Time Rigid-Body Impact

Jui-Hsien Wang
Raj Setaluri
Stanford University

Doug James
Pixar Animation Studios, Stanford University

Dinesh Pai
The University of British Columbia

All's Well That Ends Well: Guaranteed Resolution of Simultaneous Rigid Body Impact

Paul Vouga
University of Texas

Breannan Smith
Pixar Animation Studios

Danny Kaufman
Adobe Research

Rasmus Tamstorf
Walt Disney Animation Studios

Eitan Grinspun
Columbia University

Improving the GJK Algorithm for Faster and More Reliable Distance Queries Between Convex Objects

Mattia Montanari
Nik Petrinic
University of Oxford

Ettore Barbieri
Queen Mary University of London

Anisotropic Elastoplasticity for Cloth, Knit and Hair Frictional Contact

Chenfanfu Jiang
University of Pennsylvania

Theodore Gast
University of California, Los Angeles

Joseph Teran
Walt Disney Animation Studios, University of California, Los Angeles

FACES & HAIR

Thursday, 3 August, 2-3:30 pm
Session Chair: Ira Kemelmacher-Shlizerman, University of Washington and Facebook

Phace: Physics-Based Face Modeling and Animation

Alexandru Eugen Ichim
École polytechnique fédérale de Lausanne

Petr Kadlecek
Charles University in Prague, University of Utah

Ladislav Kavan
University of Utah

Mark Pauly
École polytechnique fédérale de Lausanne

Facial Retargeting with Automatic Range of Motion Alignment

Roger Blanco Ribera
Korea Advanced Institute of Science and Technology

Eduard Zell
Universität Bielefeld

J.P. Lewis
Victoria University, SEED

Junyong Noh
Korea Advanced Institute of Science and Technology

Mario Botsch
Universität Bielefeld

Example-Based Synthesis of Stylized Facial Animations

Jakub Fišer
Ondřej Jamriška
Czech Technical University in Prague

David Simons
Eli Shechtman
Jingwan Lu
Paul Asente
Michal Lukáč
Adobe Research

Daniel Sýkora
Czech Technical University in Prague

A Data-Driven Approach to Four-View Image-Based Hair Modeling

Meng Zhang
Menglei Chai
Hongzhi Wu
Hao Yang
Kun Zhou
Zhejiang University

WORK IT, MAKE IT BETTER, STRONGER

Thursday, 3 August, 3:45-5:15 pm
Session Chair: Stelian Coros, Carnegie Mellon University

Interactive Design Space Exploration and Optimization for CAD Models

Adriana Schulz
Instituto Nacional de Matemática Pura e Aplicada, Massachusetts Institute of Technology

Jie Xu
Bo Zhu
Massachusetts Institute of Technology

Changxi Zheng
Eitan Grinspun
Columbia University

Wojciech Matusik
Massachusetts Institute of Technology

Interactive Design and Stability Analysis of Decorative Joinery for Furniture

JiaXian Yao
University of California, Berkeley

Danny Kaufman
Adobe Research

Yotam Gingold
George Mason University

Maneesh Agrawala
Stanford University

Lightweight Structure Design Under Force Location Uncertainty

Erva Ulu
Carnegie Mellon University

James McCann
Disney Research Pittsburgh

Levent Burak Kara
Carnegie Mellon University

Design and Volume Optimization of Space Structures

Caigui Jiang
Max Planck Institut für Informatik, King Abdullah University of Science and Technology

Chengcheng Tang
King Abdullah University of Science and Technology, Stanford University

Hans-Peter Seidel
Max Planck Institut für Informatik

Peter Wonka
King Abdullah University of Science and Technology

"Think of everything that has ever made you geek out and feel so passionate about something in your whole life and put it into one feeling... That, my friend, is the feeling you get when being at SIGGRAPH."

VR FILM JAM

FP F S EP E

New for SIGGRAPH 2017: VR Film Jam, where teams compete to convert their animated shorts to interactive VR experiences in 32 hours. The goal is to demonstrate how great linear content can be turned into great interactive VR content.

The final projects are experienced by all attendees in VR Village on Wednesday, 2 August, and Thursday, 3 August, where the teams will have an opportunity to answer questions about their short animation.

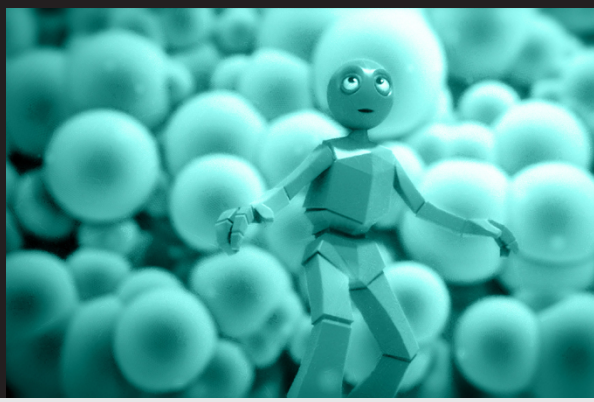

Image Credit: Light Sight, (c) 2017 Seyed M. Tabatabaei, Simin Farrokh Ahmadi, Art University of Tehran

VR Film Jam Hours

Sunday, 30 July . . . . . 9 am-9 pm
Monday, 31 July . . . . . 9 am-9 pm
Tuesday, 1 August . . . . . 9 am-5 pm

Light Sight

This would be a VR version of the animation "Light Sight". The whole story event is happening in one single location and time, hence, it suggests a theatrical immersion. Abstraction of the meaning and simplicity of the form this animation, makes it potentially a suitable case for VR experimentation.

Seyed M. Tabatabaei
Simin Farrokh Ahmadi
Art University of Tehran

The Moon is Essentially Gray

"The Moon Is Essentially Gray" is a CG animated short about a young child, her makeshift rocket, and her fantastic flight to the moon.

Charlotte Allen
School of Visual Arts

Trouble Brewing

An adventurous young goat enters an old, run-down house and encounters its owner, an angry troll. The goat is captured and must use all his wits and physical ability to survive!

Peter Mo
Cogswell College

VR VILLAGE

FP F S EP E

Explore the fascinating potential of real-time immersion in tomorrow's virtual and augmented realities for exploring new modes of communication, interaction, and powering real-world applications in health, education, design, and gaming.

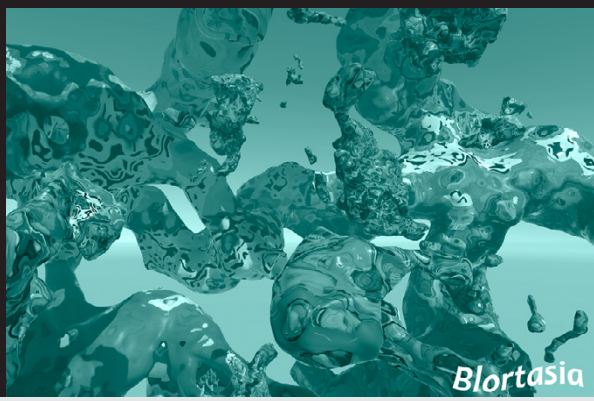

Image Credit: Blortasia (c) 2017 Snow Mack, Kevin Mack, Ray Mack, Jonathan Mack, Shape Space VR

VR Village Hours

Sunday, 30 July . . . . . 1:30-5:30 pm
Monday, 31 July . . . . . 10 am-5:30 pm
Tuesday, 1 August . . . . . 10 am-5:30 pm
Wednesday, 2 August . . . . . 10 am-5:30 pm
Thursday, 3 August . . . . . 10 am-3:30 pm

AR Mail from Harbin

By combining photogrammetric capture of the Harbin St Sophia Church, augmented reality technology, and traditional paper media, AR Mail from Harbin enhances the experience of visiting the heritage location, helps viewers understand its spatial design, and promotes social interaction in a playful manner.

Woongki Sung
Takehiko Nagakura
Dan Li
Racheal Villalon
Massachusetts Institute of Technology

Blortasia

Blortasia combines art and flying in virtual reality to engage the imagination and inspire wonder through shape, color, motion, sound, and spatial presence.

Snow Mack
Kevin Mack
Ray Mack
Jonathan Mack
Shape Space VR

Bridget

Bridget is a little mixed reality robot that uses a dense model of the world to navigate around and interact with the real environment. She can zap objects, play fetch, and even open a portal to another world so you can step into VR.

Jeff Powers
Jacob Ervin
Occipital, Inc.

Aaron Hilton
Steampunk Digital

curated content

Digital Playgroundz: Demonz I.

Digital Playgroundz is an interactive and augmented-reality system that displays large-scale applications on flat surfaces (walls) in various spatial configurations, with no limits on the number of users or size of the interactive area.

Jakub Roček
Daniel Gregor
Ondřej Prucha
Josef Kortan
INITI.org

GAMES

Dream Makers

A creative cooperation game for two players combining a dreamy immersive VR laboratory and a tablet interface that supplies all the necessary ingredients to create, what else? Dreams!

Dimosthenis Gkantzos
Jan Fiess
Aleksandra Todorovic
Lukas Gotkowski
Filmakademie Baden-Wuerttemberg, Animationsinstitut

Flock

Become a bird and flock with your feathered friends in untethered VR while dining on colorful, procedurally generated insects.

David Lobser
Ken Perlin
New York University

Lily Fang
Object Normal

Christopher Romero
Manyplace

Hallelujah: Creating a Breakthrough VR Experience With Lytro Immerge

Hallelujah, a revolutionary virtual reality music performance, is the world's first VR music experience to provide an uncompromised sense of presence with six degrees of freedom using Lytro Immerge.

Orin Green
Tim Milliron
Nikhil Karnad
Chrissy Szczupak
Lytro, Inc.

Heroes: The Making of an Interactive, Mixed-Reality Duet

This multidimensional experience guides you, as both audience and participant through the emotionality of dance set to this iconic David Bowie song. The accompanying panel illuminates the process of creating this work: the live-action performance and visual effects, incorporated into a Unity-driven experience for Gear VR and HoloLens.

Csilla Kozma
Nokia Technologies

Melissa Painter
MAP Design Lab

Tim Dillon
MPC

Thomas Wester
Thomas Wester Consulting

Jason Schugardt
MPC

curated content

HOLO-DOODLE

HOLO-DOODLE is a VR hangout that brings the VR experience of being a naughty robot killing time to life: World premiere at SIGGRAPH 2017.

Daffy London - Director/Host
Laura Dohrmann - Producer
Ken Perlin - Head of Technology
Connor DeFanti - Developer
Wenbo Lan - Developer
New York University

Terrence Masson - Host/SIGGRAPH Liaison
School of Visual Arts

Meghan Nelson, Caco Daubentonia, Igal Nassima, James Cao - Co-Production
Superbright

curated content

IL Gigante: Michelangelo's David in VR

See Michelangelo's "stone giant" in virtual reality. Walk around Michelangelo's 17-foot (5-meter)

statue of David and use a virtual scaffold to see the work up close as few have seen it before.

Christopher Evans
Epic Games, Inc.

IRIDiuM+: Deep-Media Storytelling With Non-linear Light-Field Video

The techniques and creation process of a deep-media immersive experience with synchronized tactile, audio, and light-field visual techniques to realize a non-linear story in virtual reality.

Maggie Kosek
Disney Research, Edinburgh Napier University, The Walt Disney Company

Babis Koniaris
David Sinclair
Desislava Markova
Fraser Rothnie
The Walt Disney Company, Disney Research

Lanny Smoot
Disney Research

Kenny Mitchell
Edinburgh Napier University, The Walt Disney Company, Disney Research

GAMES

Kiss or Kill

Kiss or Kill is the very first room-scale VR game show. Players compete in a one-versus-one trivia showdown filled with big choices and crazy shenanigans. Answer fast-paced trivia but watch out for your opponent who can do whatever it takes to win.

Nicholas Robinson
Azin Mehrnoosh
Andy Thai
RLTY CHK

Magic Bench: A Multi-User, Multi-Sensory AR Platform

Introducing Magic Bench, a third-person POV mixed-reality platform where participants see themselves and their environment composited with CG assets. It allows a user to simply walk up to an installation and interact with animated CG characters.

Kyna McIntosh
John Mars
James Krahe
Jim McCann
Alexander Rivera
Jake Marsico
Ali Israr
Shawn Lawson
Moshe Mahler
Disney Research

curated content

Meet Mike in VR

Using the latest techniques in advanced facial motion capture to drive complex facial rigs with new real-time rendering, participants can meet in VR to experience complex and highly interactive photorealistic avatars.

Mike Seymour
The University of Sydney

Chris Evans
Epic Games, Inc.

curated content

Mission: ISS

Explore the International Space Station 250 miles above earth with the Oculus Rift and Touch. Learn how to move around the modules in zero gravity. Explore the experiments and missions on the station. Dock an incoming resupply capsule. Go on an EVA to check out the exterior.

Adrian Sciutto
Chris Chavira
Magnopus

curated content

MIYUBI

MIYUBI is a 40-minute virtual reality scripted comedy about a Japanese toy robot, inhabited by the viewer, gifted to a young boy on his birthday in 1982 suburban America. As the boy's family begins to fracture, you experience love and your inevitable obsolescence through a hilarious and endearing interactive story.

Félix Lajeunesse
Paul Raphaël
Ryan Horrigan
Stéphane Rituit
Sebastian Sylwan
Félix & Paul Studios

Owen Burke
Chris Bruss
Christian Heuer
Sean Dacanay
Funny or Die

Mathieu Dumont
Sailor Productions

Jean-Pascal Beaudoin
Headspace Studio

curated content

Neurable: Brain-Computer Interfaces for Virtual and Augmented Reality

The product of neuroscientific insights and advanced machine learning, Neurable interprets user intent, bringing new degrees of freedom to virtual and augmented reality.

Ramses Alcaide
Adam Molnar
Michael Thompson
Neurable

Out of Exile

Out of Exile is the true story of Daniel Ashley Pierce, who was violently attacked by his family when confronted about his sexual orientation. The room-scale VR experience is a powerful parable of the hostility faced by many in the LGBTQ community.

Eren Aksu
Emblematic Group

curated content

Reaping Rewards

In this interactive experience, participants use VR to connect emotionally to the decisions they make in the story. Directed by Matthew Ward (Bungie, Lucasfilm, ImageMovers, Rainmaker), music by Glen Phillips (Toad the Wet Sprocket).

Tom Sanocki
Limitless Ltd

Remote Collaboration in AR and VR Using Virtual Replicas

Development and evaluation of AR and VR interaction and visualization techniques using head-mounted displays that allow a remote expert to guide a novice in performing assembly and repair tasks by pointing in 3D and demonstrating appropriate actions.

Carmine Elvezio
Mengu Sukan
Ohan Oda
Columbia University

Barbara Tversky
Stanford University, Columbia University

Steven Feiner
Columbia University

STRATA: A Biometric VR Experience

STRATA tunes into your heart rate, breathing, stress levels, and brain waves to remix an immersive experience that connects us to our own emotional state and teaches us to calm and focus our minds.

Michael Manh
Isabelle Du Plessis
The Mill

Summer Camp: Interactive Character-Driven Storytelling in VR

This character-driven VR adventure with a wide range of immersion and interactivity takes the room-scale experience to the next level.

Joaquín Ruipérez
Estudiofuture Producciones Digitales S.L.

GAMES

Wakeboarding: An Exertion Game in Virtual Reality

In this wakeboarding exertion game, a user skis on a meandering river in virtual reality while standing on a balance board.

Yu-Jun Hong
Chen-Yuan Hsieh
Keng-Ta Yang
Liwei Chan
National Chiao Tung University

BIRDS OF A FEATHER

FP F S EP E

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

For additional information, days, and times of these presentations, visit s2017.siggraph.org/birds-feather.

A PRELIMINARY LIST OF BIRDS OF A FEATHER SESSIONS

3D Formats from Khronos

3D Graphics with Khronos Vulkan, OpenGL, and OpenGL ES

3D Web Graphics with Khronos WebGL

Accelerating Vision Processing with Khronos Open VX and OpenCL

*ACM SIGGRAPH Cartographic Visualization

Animation Educators Forum

Berthouzoz Women in Research Lunch

Best Practices in Making 3D-Printed Math and Science Models

Blender Foundation – Community Meeting

Blender Spotlight

Bridging the Gap Between Production and Technology

Cesium: 3D Globes on the Web

Computer Graphics Educators – Teaching and Internet Video

Computer Graphics for Simulation

Data Processing in the Cloud

Depth Camera Usage and Development

Discussion on HTML-Like WebVR Language

Going Cloud Native

*DCAJ Presentation "Industrial Application of Content Technology in Japan"

Dynamic Simulation in Production

Global VFX Pipelines

glTF Format for Runtime 3D Asset Delivery from Khronos

Going Cloud Native

*Immersive Visualization for Science, Research and Art – International

Interesting and Novel Uses of Alembic in Our Pipelines

International Collegiate Virtual Reality Contest (IVRC)

*ISEA International – Open Forum

Khronos After Party Post-BOF Social

Leonardo Meeting

Let's Talk VR III

Maps, Urban Data, and Geocoding in Graphics

*Massive Collaborative Animation Project

MaterialX: An Open Standard for Network-Based CG Object Looks

Meet the Candidates

Mission: ISS by Magnopus

Mobile VR

Open Shading Language (OSL)

Openscenegraph

OSU/ACCAD Alumni Gathering

Portable VR With Khronos OpenXR

Remote Studio Productions – Online Collaboration

Renderfarming

Sake Party

Shadertoy: Community Meeting

*Shenzhen & Los Angeles Chapters Meetup

State of Animation Tools in the Industry

Studio Trainer Meet Up

Taipei ACM SIGGRAPH Chapter Reunion

*The International Collegiate Virtual Reality Contest (IVRC)

The VFX Union And You

*Undergraduate Research Alliance

University of Pennsylvania and UCLA Reunion

VFX Cloud Wars: Google/Amazon/Microsoft

VFX Reference Platform - A Common Target for Building VFX Software

Virginia Commonwealth University Students, Alumni and Friends Reunion

Visual Effects Society Reception and Historical Art Display

VR and AR -- Getting the Skills You Need to Work in the Field

Web-Wide Interactive 3D

Women in Tech: Finding Your Voice in the Visual Effects Workplace

*Presented in the ACM SIGGRAPH Theater.

ACM SIGGRAPH THEATER EVENTS

FP F S EP E

Informative international sessions on the current state of computer graphics around the world, organized by representatives of ACM SIGGRAPH and affiliated societies.

For additional information, days, and times for these international sessions visit: s2017.siggraph.org.

A PRELIMINARY LIST OF ACM SIGGRAPH THEATER EVENTS

CG in Africa + Middle East

CG in Asia – Inside the Asian CG Industry

CG in Australasia – Developing Links Between Industry and Higher Education in CG

CG in Canada

CG in Latin America: "Encontro dos brasileiros" - Brazilian Meeting

CG in Latin America

Fantastic Student Portfolio Showcase

Join the IRC in 2017!

Open Forum of the ACM SIGGRAPH Digital Arts Community

Professional and Student Chapters Startup Meeting

Recapturing our Past: Archiving SIGGRAPH's History

SIGGRAPH for Beginners – General View

SIGGRAPH in Japanese + Japan CG Showcase

Silicon Valley Kids: Get-Together for Young Entrepreneurs

Special Session of the ACM SIGGRAPH Digital Arts Community — "Immersive Expressions: Virtual Reality on the Web"

VR in Europe + Russia

Women in CG

"Besides the fact that you get to learn, test, and discover the newest technologies and software, SIGGRAPH gives you a huge inspiration boost. It makes you want to go and do something amazing."

EXHIBITION (as of 26 May)

FP F S EP E EO

Exhibition Hours

Tuesday, 1 August . . . . . 9:30 am-6 pm
Wednesday, 2 August . . . . . 9:30 am-6 pm
Thursday, 3 August . . . . . 9:30 am-3:30 pm

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

3dMD
Academy of Art University
Advanced Micro Devices (AMD)
Allegorithmic
Allied Powers LLC
Amazon Lumberyard
American Cinematographer
Animation Magazine
Autodesk
Avere Systems
BenQ America
Blackmagic Design
Blender Institute
Body Labs
Boris FX
BOXX Technologies, Inc.
C2Monster
Cap Digital - France
Carnegie Mellon Entertainment Technology Center
CGAL - The Computational Geometry Algorithms Library
Cogswell College
Computer Graphics World
CRC Press, Taylor & Francis Group
D3CRYPT3D
Dell
DigiPen Institute of Technology
Dimensional Imaging (DI4D)
Drexel University
Eizo Inc.
EnvisionTEC
Esri
Facebook
Faceware Technologies
FLIR Systems, Inc.
Formlabs, Inc.
Foundry
FoxRenderfarm
ftrack
Google
Guangdong Virtual Reality Technology Co., Ltd.
Haverford Systems
HoloDigilog Human Media Research Center
IATSE
Infinite Trading Inc.
InstaLOD
Intel Corporation
INTERVOKE
Intraware/Eddy
Isotropix
Lancerlink Co., Ltd.
LightSpace Technologies
LulzBot 3d Printers
Luxion, Inc.
MakerBot
Marvelous Designer
MAXON
Mellanox Technologies
Mercury Learning and Information
MetaPipe
Microsoft
moBack
ModelingCafe Vancouver Inc.
Motion Analysis Corporation
Mura Vision
Newsight Japan, Ltd.
Nimble Collective
NIPA
Nippon Carbide Industries, Co. Inc.
NorPix Inc.
Nurulize
NVIDIA Corporation
Oculus VR, LLC
OPTIS
OptiTrack
OTOY, Inc.
Panasas
Paneo
PhaseSpace
Pixel Plow
Planetside Software
Pluralsight
PNY Technologies
Puget Systems
Purdue University
The Qt Company
Qualcomm Incorporated
Quantum Corporation
Qumulo
Raise 3D, Inc.
REALIS
Reallusion Inc.
RebusFarm GmbH
Redshift Rendering Technologies, Inc.
Renderstorm Inc.
Ringling College of Art and Design
Rokoko
Samy's Camera
SCAD
Sensel
SensoMotoric Instruments, Inc.
Sharecg.com
SHINING 3D
Shotgun
SideFX Software
Silver Spoon
Sketchfab Inc.
Smith Micro Software
SpeedTree
SUMMUS RENDER
Synertial
TechViz
Thinkbox Inc.
Torus Media Labs
Umbra
United Scenic Artists, Local USA 829 IATSE
Unity Technologies
The Studio - B&H
The University of the Arts
Tokyo Electron Device Limited
uSens Inc.
Vancouver Film School
Velocity Micro
Vicon
Visual Computing Research Center at KAUST
vr-on GmbH
VSOCLOUD
Wacom Technology
Web3D Consortium
Wolfram Research, Inc.
WorldViz
X-Rite Pantone
Xsens Technologies B.V.
Zoox

EXHIBITOR SESSIONS (as of 30 June)

FP F S EP E EO

Comprehensive summaries of the latest technologies in computer graphics and interactive techniques. SIGGRAPH 2017 exhibitors demonstrate software, hardware, and systems: answer questions; and host one-on-one conversations about how their applications improve professional and technical performance.

EXHIBITOR MEETING ROOMS

1-2 August, 9:30 am-5 pm
Autodesk (ROOM 409B)

Autodesk Vision Series

The Autodesk Vision Series is a two-day track at SIGGRAPH that covers forward-looking technology, workflows and techniques in the world of entertainment.

Tuesday, 1 August

9:30 am	Beyond Media and Entertainment: How AR & VR are changing design
10 am	The Future of Storytelling, Presented by Hilmar Koch (Autodesk)
11 am	Rogue One's Virtual Sets: The Future of Production with ILM
1 pm	Virtual Production to VR with CBS Digital
2 pm	Character Creation for Beauty and The Beast with Framestore
3 pm	Scaling Beyond Four Walls with Jellyfish Pictures

Wednesday, 2 August

10 am	Smart Content: Empowering Creators to Work Smarter, Not Harder, Presented by Micheal Spaw (Autodesk)
11 am	Evolving the Planet of the Apes with Weta Digital
1 pm	How MPC Brought the Sea to Life in "Pirates of the Caribbean: Dead Men Tell No Tales"
2 pm	Panel: The Promise and Challenges of Embracing the Cloud
3 pm	Open@ADSK - Integrating Effective Open Source Practices in Media & Entertainment, and Beyond, Presented by Guy Martin (Autodesk)
4 pm	Arnold: Where do we go from here?

1-2 August, 10 am-5 pm
Chaos Group 9 (ROOM 404A)

V-Ray Days Presented by Chaos Group

1-3 August
Intel (ROOM 406B)

Tuesday, 1 August

2-3 pm	Session 1: StudioCloud: VFX Render with Intel® performance tuning
3:15-4:15 pm	Session 2: Steal our Secrets: Pixar's journey to take Renderman to new levels of performance
4:30-5:30 pm	Session 3: Slashing Open Shading Language Render Times with a SIMD Scalable Architecture

Wednesday, 2 August

9-10 am	Session 4: Slashing Open Shading Language Render Times with a SIMD Scalable Architecture
10:45-11:45 am	Session 5: Steal our Secrets: Pixar's journey to take Renderman to new levels of performance
12:30-1:30 pm	Session 6: Intel® RealSense™ technology in Virtual Reality
2-3 pm	Session 7: StudioCloud: VFX Render with Intel® performance tuning
3:15-4:15 pm	Session 8: Embree Ray Tracing Kernels - Recent Improvements and New Features
4:30-5:30 pm	Session 9: OSPRay - A Ray Tracing Based Rendering Engine for High Fidelity Rendering and Visualization

Thursday, 3 August

9-10 am	Session 10: Introduction to Artificial Intelligence – the next evolution for usage opportunities in Graphics and VR
10:45-11:45 am	Session 11: OSPRay - A Ray Tracing Based Rendering Engine for High Fidelity Rendering and Visualization
1-2 pm	Session 12: Intel® RealSense™ technology in Virtual Reality
2:30-3:30 pm	Session 13: Embree Ray Tracing Kernels - Recent Improvements and New Features
4-5 pm	Session 14: Introduction to Artificial Intelligence – the next evolution for usage opportunities in Graphics and VR

30-31 July
NVIDIA (ROOM 404AB)

NVIDIA Spotlights: Best of GTC and NVIDIA Research

NVIDIA brings cutting-edge research in AI & graphics and advances in GPU rendering, ray tracing, AR, VR, and more to SIGGRAPH. Join technical deep dives and get a glimpse into groundbreaking advancements that will change the way you work.

Highlights from the announcements and innovations you won't want to miss:

Sunday, 30 July, 9 am-6 pm

- See the latest NVIDIA Falcor 2.0 – a framework for prototyping and sharing rendering techniques
- Experience a one of a kind VR demo – using NVIDIA Holodeck and Isaac
- Get updates on NVIDIA support for Vulkan in 2017

Monday, 31 July, 9 am-6 pm

- Explore the virtual frontier with NVIDIA researchers: computer graphics challenges in virtual reality
- Hear from Pixar on its latest movie techniques and advances in real-time graphics
- Explore NVIDIA GVDB Voxels, a new open source SDK framework for 3D printing

1-2 August
Pixar (ROOM 501C)

Tuesday, 1 August

10-11:30 am	Women of Pixar Panel
1-2 pm	How to Create a Compelling Demo Reel
3-3:45 pm	Open Source at Pixar: OpenTimelineIO
4-6 pm	Open Source at Pixar: USD and OpenSubdiv

Wednesday, 2 August

9:30-10:30 am	A Collaboration Between Pixar's Creative and Technical Worlds
10:45-11:45 am	Reel Reviews

1-3 August
Google (ROOM 512)

1-3 August
SideFX (ROOM 501AB)

Houdini Hive

Three days packed with sessions from Industry Professionals ranging from VR, VFX, animation and technology. Schedule to be posted prior to the event on SideFX.com.

1-2 August
Unity Technology (ROOM 503)

EXHIBITOR MEETING ROOMS

(continued)

1-2 August
Walt Disney Animation Studios
(ROOM 407)

Walt Disney Animation Studios Suite

Tuesday, 1 August

12-1 pm	Conversation with Walt Disney Animation Studios
1-2 pm	Open Suite for Meet and Greets
2:30-3:30 pm	Conversation with Walt Disney Animation Studios
3:30-4:30 pm	Open Suite for Meet and Greets
5-6 pm	Disney Panel

Wednesday, 2 August

10-11 am	Workshop
11-11:30 am	Open Suite (Chat With Artists and Engineers From Various Disciplines)
1-2 pm	Workshop
2-2:30 pm	Open Suite (Chat With Artists and Engineers From Various Disciplines)
3-4 pm	Developing Tools for Artists

EXHIBITOR SESSIONS (ROOM 409A)

TUESDAY, 1 AUGUST

MICROSOFT

Tuesday, 1 August, 9-10 am
Driving Machine Learning and Computer Vision Algorithm Through Synthetic Data

MICROSOFT

Tuesday, 1 August, 10:30-11:30 am
Future of Studios & VFX in the Cloud

QUALCOMM

Tuesday, 1 August, 12:30-1:30 pm
Profiling VR Games and Applications for Optimum Performance

Maximizing the gaming experience on a VR headset requires more than innovative technology and gameplay. The gaming experience is equally affected by a game's ability to manage power consumption and avoid device heat ups. These factors can impact a game's success by limiting game performance and creating an unplayable mobile experience. In this session, you'll learn how to improve power and thermal efficiency while achieving maximum performance for your VR game or app.

Analyze and optimize your VR games and applications by exposing detailed CPU, GPU, and system data to reveal your game's power and performance characteristics. In addition, you can understand how other apps or background processes may be impacting performance, giving you a complete picture of system performance.

PANASAS, INC.

Tuesday, 1 August, 2-3 pm
Parallel Storage Scaling for Emerging Render Challenges

Advancing parallel storage enhancements for rendering and bursting, given the emergence of greater CPU core density for scheduled jobs across distributed compute grids.

QUMULO

Tuesday, 1 August, 3:30-4:30 pm
Resolving Storage Pain

The M&E industry today is experiencing pain in storage. There's a lot of pain in your storage environment whether you're an artist, an end user, administrator, or architect. Your workloads are growing as post production businesses try to squeeze more from less. Client demands are increasing, whether they're about project resolution, framerate, or turnaround time. Technology marches forward the whole time and you have to keep your environment as pain-free as possible. In this exhibitor session, we will discuss how to handle these workloads in a fast, efficient, and scalable way.

MICROSOFT

Tuesday, 1 August, 5-6 pm
Secure Burst Rendering to the Microsoft Cloud

WEDNESDAY, 2 AUGUST

SOHONET

Wednesday, 2 August, 9-10 am
Simple Rendering with Sohonet and GridMarkets

SUMMUS RENDER, S.L.

Wednesday, 2 August, 10:30-11:30 am
The Remote Virtual Studio Cloud-Based

The remote virtual studio cloud-based that includes hardware and software and a complete and free animation pipeline. A new way to work.

QUALCOMM

Wednesday, 2 August, 12:30-1:30 pm
Developing AR Applications for ODG's AR Glasses

Learn how to build and optimize AR applications for ODG glasses.

THE QT COMPANY

Wednesday, 2 August, 2-3 pm
Behind the Scenes and Beyond Your Imagination With Qt

Go behind the scenes of the graphics world from a software, user experience, and user interface angle ranging from equipment and applications used in the industry. We will take you on a spin of insights to the future including 3D technologies as well as what is in store now in the industry that is built with Qt!

MICROSOFT

Wednesday, 2 August, 3:30-4:30 pm
Past and Future: The Journey From Static to Elastic Infrastructure

ISOTROPIX

Wednesday, 2 August, 5-6 pm

THURSDAY, 3 AUGUST

AVEGANT

Thursday, 3 August, 9-10 am
How Light Field Technology Will Change the Future of AR & Mixed Reality

BINARY ALCHEMY

Thursday, 3 August, 12:30-1:30 pm
Introduction to Cloud Rendering

JOB FAIR

FP F S EP E EO

The Job Fair is absolutely the best place at SIGGRAPH 2017 for employers to meet with thousands of job seekers from around the globe!

Job Fair Exhibitors post their jobs on the CreativeHeads.net and ACM SIGGRAPH job boards one month prior to the conference. This allows SIGGRAPH 2017 attendees to connect with employers before the conference, during the conference via the Job Fair, and after the conference via the CreativeHeads.net job board and candidate profiling system.

CreativeHeads.net provides the most comprehensive recruitment software solution for the VFX, animation, video game, TV, film, and 3D technology and software tools industries, for employers searching for talent or job seekers looking to secure the "right" job.

Job Fair Hours

Tuesday, 1 August . . . . . 9:30 am-6 pm
Wednesday, 2 August . . . . . 9:30 am-6 pm
Thursday, 3 August . . . . . 9:30 am-3:30 pm

JOB SEEKERS

The Job Fair IS THE BEST PLACE to be if you are:

- Actively looking for a job
- Passively networking to see what opportunities are available
- Interested in getting acquainted with some great companies
- Hoping to broaden your horizons and possibly switch industries
- Looking for career development tips
- Wanting to learn about the latest CG and interactive techniques

EMPLOYERS

The Job Fair IS THE BEST PLACE to be if you want to:

- Meet with seasoned professionals
- Hire "right-brain" talent
- Reach an extremely diverse and experienced group of creative professionals working across multiple

JOB FAIR PARTICIPANTS (as of 14 June)

Activision Publishing
Animal Logic
Axis Animation
CreativeHeads.net
Cryptic Studios
Double Negative Visual Effects
ESRI
Facebook
Ilion Animation
Nordeus
Oculus Research
Qualcomm
Pluralsight
Rodeo FX
Savannah College of Art and Design
SpaceX
Uber Technologies
Weta Digital
Zoic Studios

Airport Shuttle Bus Discounts

In partnership with SIGGRAPH 2017, SuperShuttle offers transportation to and from Los Angeles International Airport (LAX).

- Share A Ride Van - $15 per passenger, one way (up to 9 passengers)
- Business Express Private - $38 per passenger, one way (seats 1-3 passengers)
- ExecuCar Black Town Car Sedan Meet & Greet - $64 per passenger, one way
- Exclusive Private Van - $75 one way (seats 1-9 passengers)
- ExecuCar Black SUV Private - $94 one way (seats 1-5 passengers)

The $15 Share A Ride Van rate includes a $2 discount for SIGGRAPH 2017 attendees. The other rates are also discounted. These discounts are valid five days before and after the conference dates to all coverage areas in the greater Los Angeles area.

These discounted rates are valid from five days before the conference to five days after it closes. If you book your shuttle reservation through the SIGGRAPH 2017 website, you can earn miles on American Airlines, United Airlines and Delta. Book by phone at: 800.258.3826

To receive the discount, you must mention the SIGGRAPH 2017 discount code: PK7AU. Or you can book directly on the Super Shuttle website.

Los Angeles Convention Center

1201 South Figueroa Street
Los Angeles, California 90015 USA

Accessibility

The convention center is handicap accessible. If you have special needs or requirements, please call Conference Management at: +1.312.673.5868

Food Services

A variety of food truck vendors and concessions are available throughout the convention center and outdoor plaza space.

Internet Access

Free wireless access is available during SIGGRAPH 2017 in all conference locations within the Los Angeles Convention Center [except in the Exhibit Hall].

Parking

SIGGRAPH 2017 attendees can park at the following locations:

Los Angeles Convention Center Parking
1201 S. Figueroa Street
+1.213.741.1151, ext 5850

L.A. Live Parking Lots
+1.213.763.5483

Staples Center Parking Lots
+1.213.742.7100

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

Luggage and Coat Check

Luggage and Coat check services are available in the Image Quest Plus Business Center at the Los Angeles Convention Center throughout the conference week. There is a $5 fee for each item up to four hours and a $10 fee for each item dropped off for more than four hours.

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 2017 speakers and award winners. To suggest books, CDs, or DVDs that should be available in the bookstore, contact:

Breakpoint Books
dhemsath83@gmail.com

Children at the Conference

Please be aware that parts of the Conference may contain adult content, graphic images, or violence. There are no age-based restrictions at the Conference with the exception of the SIGGRAPH Exhibition. Registered attendees under 16 years of age may enter the SIGGRAPH Exhibition Halls only under one of the following circumstances: as “wearable” infants/toddlers (those being carried in a sling or backpack carrier) or as children that are part of an official SIGGRAPH guided tour event.

Nursing Mothers Room

The First Aid Station in South Hall Lobby has a private room reserved for breastfeeding mothers. It is available during the conference days.

Power Stations

There will be two charging stations at SIGGRAPH 2017, one in the Concourse Hallway (between South Lobby and Business Center) and the other in the Concourse Foyer. In addition, there will be electrical ports in some of the new lobby furniture that is scattered throughout the Los Angeles Convention Center.

Hotel Reservations

Visit the SIGGRAPH 2017 website to access the easy-to-use online hotel reservation system, which includes complete information on housing policies, procedures, and rates:
s2017.siggraph.org

Or contact:

onPeak
SIGGRAPH 2017 Housing Provider
+1.855.416.6073 (US and Canada)
+1.312.527.7300 (International)

SIGGRAPH 2017 has negotiated discount rates for hotels in Los Angeles. These discounts are available to SIGGRAPH 2017 attendees only. Reservations made after Monday, 3 July are based on availability only, and rates may increase.

SIGGRAPH 2017 hotel rates can only be booked through onPeak, SIGGRAPH 2017’s Housing Partner. If you are contacted by any other companies to make hotel reservations for SIGGRAPH 2017, be aware they may not be reputable companies or endorsed by SIGGRAPH 2017.

Photography and Recording Policies

All registered media and attendees are allowed to take photos and record video in approved areas at SIGGRAPH 2017. Many of the words, images, sounds, objects, and technologies presented at the SIGGRAPH conference are protected by copyright or patents. Please respect their intellectual-property rights.

By permission, photography is allowed in the Production Gallery, Experience Hall, Exhibition Hall, during social receptions, and the Computer Animation Festival Awards and pre-show. Photography is not allowed in Research and Learning areas (Papers, Courses, Panels, Talks, or Production Sessions) or during the presentation of the Computer Animation Festival (Electronic Theater and VR Theater). If you are in doubt, please ask permission before photographing or recording content.

SIGGRAPH 2017 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.

Cameras and Recording Devices

All attendee cameras and recording equipment must be hand-held. Members of the media are allowed to use tripods and larger equipment, but they must register their devices with the SIGGRAPH 2017 media office in advance of use.

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 2017 Merchandise Pickup Center. Lost merchandise will not be replaced.

Reception Access

To be admitted to the Reception, you must have a ticket. Your badge does not provide access.

REGISTRATION FEE INFORMATION

Conference Registration Categories

- FP Full Conference Platinum
- F Full Conference
- S Select Conference
- EP Exhibits Plus
- E Exhibitors
- EO Exhibits Only

One Day Registration

Full Conference One Day registration is available and includes admission to conference programs and events for the day purchased and the Exhibition (Tuesday – Thursday). It does NOT include Computer Animation Festival – Electronic Theater or Reception.

⚠ Lost badges cannot be replaced. If you lose your badge, you must purchase a new registration.

Reception Ticket

To be admitted to the Reception, you must have a ticket. Your registration badge does not provide access.

Refund and Cancellation Deadlines

Cancellation requests for refunds must be made in writing and received on or before 7 July. No refunds will be issued after this date. There is a refund processing fee of $75. Exhibits Only registrations are not refundable.

X Included in registration

* Includes a one-year membership to ACM SIGGRAPH

	FP Full Conference Platinum	F Full Conference	Full Conference One-Day	S Select Conference	EP Exhibits Plus	EO Exhibits Only
Member						
By 9 June	$1,245	$950	$450	$450	$150	$50
By 7 July	$1,445	$1,150	$550	$550	$200	$50
8 July and After	$1,645	$1,350	$650	$650	$250	$50
Non-Member						
By 9 June	$1,445*	$1,150*	$550	$550	$150	$50
By 7 July	$1,645*	$1,350*	$650	$650	$200	$50
8 July and After	$1,845*	$1,550*	$750	$750	$250	$50
Student						
By 9 June	$695	$400	$300	$300	$150	$50
By 7 July	$745	$450	$350	$350	$200	$50
8 July and After	$795	$500	$400	$400	$250	$50
ACM SIGGRAPH Award Presentation	X	X	M	X		
ACM SIGGRAPH Award Talks	X	X	M	X		
ACM Student Research Competition – Final Presentation	X	X	W	X	X	
Appy Hour	X	X	W	X	X	
Art Gallery	X	X	Su, M, T, W, Th	X	X	
Art Papers	X	X	T	X		
Birds of a Feather	X	X	Su, M, T, W, Th	X	X	
Computer Animation Festival – Electronic Theater	M or W	M or W				
Computer Animation Festival – VR Theater**	X	X				
Courses	X	X	Su, M, T, W, Th			
Educators Forum	X	X	M, T	X		
Emerging Technologies	X	X	Su, M, T, W, Th	X	X	
Exhibition	X	X	T, W, Th	X	X	X
Exhibitor Sessions	X	X	T, W, Th	X	X	X
Experience Presentations	X	X	TBD	X	X	
International Center	X	X	Su, M, T, W, Th	X	X	
Job Fair	X	X	T, W, Th	X	X	X
Keynote Sessions	X	X	M	X		
Panels	X	X	Su, M, T, W			
Posters	X	X	Su, M, T, W, Th	X	X	
Poster Sessions	X	X	M, T, W	X	X	
Production Sessions	X	X	M, T, W, Th	X		
Real-Time Live!	X	X	T	X		
Reception	X	X				
Studio	X	X	Su, M, T, W, Th	X	X	
Talks	X	X	Su, M, T, W, Th			
Technical Papers	X	X	M, T, W, Th			
Technical Papers Fast Forward	X	X	Su			
VR Village	X	X	Su, M, T, W, Th	X	X	

** Computer Animation Festival VR Theater Ticketing.
Due to limited space, the VR Theater is available to Full Conference Platinum and Full Conference attendees only. Tickets will be distributed at the Electronic Theater Exchange/VR Theater Ticket desk in Registration one day before each showing, i.e., Monday tickets are available on Sunday, Tuesday tickets on Monday, etc.

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Cogswell Polytechnical College

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Simon Fraser University

Web Programming
The OPAL Group

CO-LOCATED EVENTS

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

High-Performance Graphics 2017

28-30 July 2017

Sheraton Grand Los Angeles
711 South Hope Street
Los Angeles, California 90017 USA

highperformancegraphics.org/2017

SCA 2017

28-30 July 2017

University of California, Los Angeles Campus

sca17.cs.columbia.edu

DigiPro 2017: Digital Production Symposium

29 July 2017

Beaudry Theater, Los Angeles Center Studios
451 South Beaudry Avenue
Los Angeles, California 90017 USA

dp2017.digiproconf.org

Expressive 2017: Joint Symposium on Computational Aesthetics and Sketch-Based Interfaces and Modeling and Non-Photorealistic Animation and Rendering

29-30 July 2017

Los Angeles Convention Center
1201 South Figueroa Street
Los Angeles, California 90015 USA

expressivesymposium.com