The 1st ACM SIGGRAPH Conference and Exhibition
on Computer Graphics and Interactive Techniques in Asia

SIGGRAPHASIA2008

NEW HORIZONS

CONFERENCE 10–13 DECEMBER 2008 **EXHIBITION** 11–13 DECEMBER 2008
Suntec Singapore International Convention & Exhibition Centre

Programme & BUYER'S GUIDE

www.siggraph.org/asia2008

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New York, New York 10121-0701 USA

Additional copies of the SIGGRAPH Asia 2008 Program & Buyer's Guide may be ordered from:

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P.O. Box 30777
New York, New York 10087-0777 USA

800.342.6626 (US and Canada)

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+1.212.944.1318 fax

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Conference at a Glance

SIGGRAPHASIA2008
NEW HORIZONS

CONFERENCE REGISTRATION CATEGORIES

★ Full Conference Access
● One-Day Full Conference
❍ Basic Conference/Exhibits Plus
E Exhibits Only

		Tuesday 9 December	Wednesday 10 December	Thursday 11 December	Friday 12 December	Saturday 13 December
	Registration	15:00–19:00	07:30–18:00	07:30–18:00	07:30–18:00	07:30–18:00
	Merchandise Pickup & SIGGRAPH Asia Store		07:30–18:00	07:30–18:00	07:30–18:00	07:30–18:00
★	**Reception**				19:00	
★ ● ❍	**Art Gallery** **Emerging Technologies**			08:30–17:30	08:30–17:30	08:30–17:30
	Computer Animation Festival					
★ ● ❍	*Animation Theatre, Special Programme, Invited Screenings, Talks & Panels*			09:00–17:30	09:00–17:30	09:00–17:30
★ ●	*Electronic Theatre*			19:00–21:00	19:00–21:00	16:00–18:00 19:00–21:00
★ ●	**Courses**		08:30–17:30	08:30–17:30	08:30–17:30	08:30–17:30
★ ●	**Educators Programme**			08:30–17:30	08:30–17:30	08:30–17:30
★ ● ❍	**Posters**			08:00–18:00	08:00–18:00	08:00–18:00
★ ●	**Sketches**			08:30–17:15	08:30–17:15	08:30–17:15
★ ●	**Technical Papers**			08:00–18:00	08:00–18:00	08:00–18:00
★ ●	**Featured Speakers**			10:30	13:30	
★ ● ❍	**Fast Forward Session** (Technical Papers and Sketches)		18:00–20:00			
★ ● ❍ E	**Exhibition**			09:30–18:30	09:30–18:30	09:30–18:30
★ ● ❍ E	**Exhibitor Tech Talks**			10:00–18:00	10:00–18:00	10:00–18:00
★ ● ❍	**Job Fair**			09:30–18:30	09:30–18:30	09:30–18:30

See, Hear, and Interact

Welcome to the first SIGGRAPH Asia, four full days of world-class technical presentations, creative exploration, and the industry's largest Asian marketplace of products and services: the SIGGRAPH Asia 2008 Exhibition.

★ ● **11 December 10:30**

Featured Speaker:

Don Greenberg
Director
Cornell University
Program of Computer Graphics
Computer Graphics Pioneer

The Expanding Boundaries of Computer Graphics

Don Greenberg challenges the new generation of computer graphicists (those who will take great professional risks to solve big problems) to dream impossible dreams and extend the influence of computer graphics to many other disciplines.

Don Greenberg has been researching and teaching in the field of computer graphics for more than 40 years. His primary focus has been on advancing the state of the art in computer graphics.

His current computer science research projects involve realistic image generation, parallelprocessing algorithms for rendering, new graphical user interfaces, and computer animation. His current application projects include ornithology and the search for the ivory-billed woodpecker, medical imaging and virtual surgery, architectural design for a green environment, and new types of computer displays, from electronic paper to touch-sensitive table displays.

He has taught courses in computer graphics in computer science, computer-aided design in architecture, computer animation in art, and technology strategy for business. Many of his graduate students have gone on to become leaders in the fields of computer graphics, computer animation, and computer-aided design for architecture. Six former students have won Hollywood's Technical Oscars, and five have won the prestigious SIGGRAPH Achievement Award.

SIGGRAPH Asia 2008 Featured Speakers sessions are supported by: Interactive Digital Media

★ ● **12 December 13:30**

Featured Speaker:

Rob Cook
Vice President
Advanced Technology
Pixar Animation Studios

Behind the Scenes at Pixar

This talk takes you behind the scenes at Pixar Animation Studios for a look at how its 3D computer graphics films are made. The process starts with development of the story and continues with modelling the geometry, animating the characters, simulating things like water and cloth and hair, defining the look of the surfaces, putting lights in the scene, and rendering the images. Making a computer animated film requires close collaboration between artists and technical experts in many areas of expertise and is a great example of the value of bringing different disciplines together.

Rob Cook was the co-architect and primary author of Pixar's RenderMan software, which creates photo-realistic computer images. In 2001, he received an Oscar for his contributions, the first ever given for software. In the last 10 years, all but one film nominated for a Visual Effects Academy Award has used RenderMan.

He has a Bachelor of Science degree in physics from Duke University and a Master of Science degree in Computer Graphics from Cornell University. At Cornell, he worked on simulating realistic surfaces, taking computer-generated images beyond the distinctive plastic look they had at the time. In 1981, he joined Lucasfilm/Pixar, where he developed the first programmable shader, which is now an essential part of GPUs and game engines.

He was the first to use Monte Carlo techniques in computer graphics, which was essential for simulation of complex, realistic lights and camera effects. His camera techniques were especially important in the visual effects industry, because they allowed computer-generated imagery to match the motion blur and depth of field of live-action footage when the two were combined.

In 1987, he received the ACM SIGGRAPH Achievement Award in recognition of these contributions.

SIGGRAPH Asia 2008 Featured Speakers sessions are supported by: Interactive Digital Media Programme Office

Conference Overview

CONFERENCE REGISTRATION CATEGORIES

★ Full Conference Access
● One-Day Full Conference
❍ Basic Conference/Exhibits Plus
E Exhibits Only

Art Gallery/ *Synthesis*

★ ● ❍

The SIGGRAPH Asia 2008 Art Gallery presents art that transforms, melds, and transcends current Asian paradigms. This international, multicultural festival of creativity showcases work in all media–including "hybrid" formats such as text-literature collaborations, ubiquitous sounds, and zero-gravity space art–that provokes contemplation, explores surprising ideas, addresses contemporary issues, interactively engages viewers in discovery, and stimulates their intellect and creativity.

Computer Animation Festival

Electronic Theatre ★ ●
Animation Theatre ★ ● ❍
Special Programme ★ ● ❍
Invited Screenings ★ ● ❍
Talks & Panels ★ ● ❍

The first edition of the SIGGRAPH Asia Computer Animation Festival illuminates a new horizon of animation and visual effects from around the world:

ELECTRONIC THEATRE
A very popular feature of the SIGGRAPH conference for many years, the Electronic Theatre offers some of the world's most remarkable work selected by a distinguished international jury. In addition, works presented in the Electronic Theatre are eligible for festival prizes. The Best of Show and Jury Awards will be announced during SIGGRAPH Asia 2008.

ANIMATION THEATRE
An intriguing collection of innovative achievements in all genres of animation and visual effects.

SPECIAL PROGRAMME
Entertaining and inspiring examples of the latest and greatest animation techniques and visual effects, selected in a special jury process.

INVITED SCREENINGS
School Showcase of promising student work, Studio Specials from the world's leading animation and visual effects experts, and the Best of SIGGRAPH Award Winners from previous Computer Animation Festivals.

TALKS & PANELS
Revealing behind-the-scenes presentations on the how and why of production.

Courses

★ ●

International experts present instructional sessions on every aspect of computer graphics and interactive techniques: animation, computer-human interaction, entertainment, gaming, scientific visualisation, recent breakthroughs, cool programming adventures, and more.

Educators Programme

★ ●

Envisioned as an international gathering of industry professionals and academics, the Educators Programme presents perspectives that appeal to a wide spectrum of interests. The goal is to share educational strategies adopted in both industry and academia to make the learning process more satisfying, productive, and meaningful.

Emerging Technologies

★ ● ❍

SIGGRAPH Asia 2008 Emerging Technologies presents an Asian paradigm shift, a rich resource of delicate, aesthetic technologies and vivid, innovative ideas. Interactive, mind-expanding explorations in virtual and mixed reality, haptic interfaces, ubiquitous systems, digital tools, HD displays, robotics, and more. Emerging Technologies presents demos and installations of technologies that define the future of computer graphics and interactive techniques.

Conference Overview

Exhibition

★ ● ❍ E
Level 4, Halls 401 & 402

All the products and services you need for another year of creative achievement. Try the latest systems, talk with the people who developed them, and get all the information you need to make budget and purchase decisions.

Thursday, 11 December 09:30–18:30
Friday, 12 December 09:30–18:30
Saturday, 13 December 09:30–18:30

Exhibitor Tech Talks

★ ● ❍ E

In these sessions, SIGGRAPH Asia 2008 exhibitors give product updates; introduce their latest developments; demonstrate software, hardware, and systems; answer questions; and talk about how their applications improve professional and technical performance.

Job Fair

★ ● ❍
Hall 401/402

SIGGRAPH Asia 2008 has partnered with CreativeHeads.net to produce a best-in-class job fair! Employers and creative professionals will be able to connect months before and after the conference via the CreativeHeads.net web site, and during the conference via the actual job fair.

Thursday, 11 December 09:30–18:30
Friday, 12 December 09:30–18:30
Saturday, 13 December 09:30–18:30

International Resources

★ ● ❍ E

Learn how the industry is evolving worldwide and collaborate with attendees from five continents.

The International Centre offers informal translation services and space for meetings, talks, and demonstrations. Throughout the year, the International Resources programme facilitates worldwide collaboration in the SIGGRAPH community, provides an English Review Service for SIGGRAPH and SIGGRAPH Asia to help submitters whose first language is not English, and encourages participation in all conference venues, activities, and events.

Thursday, 11 December 09:30–18:30
Friday, 12 December 09:30–18:30
Saturday, 13 December 09:30–18:30

Reception

★

Social and intellectual interaction with the movers and shakers of the international SIGGRAPH Asia community. Touch base with the people you need to know for another year of business, professional success, and adventure.

Friday, 12 December
19:00 Marina Barrage

Supported by: ATI FirePro Graphics

Sketches & Posters

Sketches: ★ ●
Posters: ★ ● ❍

Sketches
A dynamic forum for thought-provoking, speculative ideas, novel applications, what-if concepts, and behind-the-scenes production details. Following each sketch presentation, authors discuss future implications of their work and answer audience questions.

Posters
Graphic depictions of incremental or half-baked but innovative ideas displayed throughout the week with scheduled sessions for informal discussions.

Technical Papers

★ ●

The SIGGRAPH Asia 2008 Technical Papers programme is a premier international forum for disseminating provocative and important new work in computer graphics and interactive techniques. Leading international experts from Asia and beyond present peer-reviewed research in rendering, modelling, animation, human-computer interaction, computer-aided design, virtual reality, and visualisation.

Technical Papers & Sketches Fast Forward Sessions

★ ● ❍

ACM SIGGRAPH's first back-to-back Technical Papers and Sketches Fast Forward Session. Get a preview of the latest research in computer graphics and interactive techniques and select the Technical Papers and Sketches that you need to attend later in the week.

Subject to separate registration

Days & Hours

8-9 December 2008
12-13 December 2008

Co-Located Events

VRCAI 2008 The 7th ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications

8-9 December 2008

An exciting VRCAI 2008 awaits participants from both academia and industry in Singapore, a hotbed of innovation where state-of-the-art technologies and applications in the virtual reality continuum (VRC) will be explored and presented. Spanning next-generation info-communication environments such as virtual reality, augmented virtuality, augmented reality, and mixed reality, VRC is key to defining and interacting, with and within, our virtual worlds. Advances in research and novel applications in this field have revolutionised much of our leisure activities, making them more appealing and fun. Just as significantly, these advances provide the foundation for more effective interactivity in work- and learning-related activities.

VRCAI 2008 focuses on the following main themes: Fundamentals, Systems, Interactions, and Industry and Applications in the VRC.

Machinima Symposium 2008

12-13 December 2008
Room 301

Ascertain the future of Machinima, its creation, distribution, and consumption. Acquire knowledge from industry players expounding on this new area. Gather tips and techniques from international experts, explore new terrains, and delve deep into the arts and sciences of Machinima making and expression.

★ ● ❍ E

Days & Hours

Wednesday, 10 December	10:00–17:00
Thursday, 11 December	12:15–15:15
Friday, 12 December	16:00–18:00

Related Events

Khronos Developer University & Specification Launch

Wednesday, 10 December,
10:00–17:00
Room 203

Join experts from Khronos for the public launch of OpenCL 1.0 and OpenVG 1.1 This day-long "Developer University" session is free to SIGGRAPH Asia 2008 attendees and provides a comprehensive update on the Khronos ecosystem of mobile graphics and media APIs that enable advanced user interfaces, 3D games, and other rich-media applications on a wide range of systems and devices. Attendees will gain a detailed understanding of how this evolving ecosystem of widely adopted APIs–including OpenGL, COLLADA, OpenGL ES, OpenMAX and OpenKODE–can empower their development plans and their businesses.
Also to be announced:

- The worldwide launch of OpenCL 1.0, a new standard for portable, parallel programming of heterogeneous systems built with CPUs, GPUs, and other processors.
- The launch of OpenVG 1.1, which enables hardware acceleration of vector graphics-based engines such as Adobe Flash and SVG with added support for accelerated high-quality text rendering.

Learn about cutting-edge graphics and media processing on platforms ranging from high-end workstations to mobile phones.

http://www.khronos.org

Blender: Migration, Integration, and Education

Thursday, 11 December
12:15–15:15
Room 302

See how Blender's powerful animation and game-production suite can compliment or replace existing software to provide a more economical solution and achieve higher efficiency. Get educated in the power and versatility of Blender and learn about the Certified Blender Trainer program.

Blender is an open-source, 3D-creation program that provides a versatile platform for creative and research endeavors.

http://www.blender.org

Emerging Markets

Friday, 12 December
16:00–18:00
Hall 401/402–Exhibitor Tech Talk Area

While we nod our heads to the big markets in the film communities such as Los Angeles, San Francisco, London, and Paris, most of the current excitement is happening in the emerging film-production communities. India, China, Indonesia, Singapore, and even Nepal have active and growing production companies and training facilities that are enabling thousands of young filmmakers, technologists, and animators to work, thrive, grow, and make movies all over the world.

In this session, industry professionals who are working in these markets talk about what is happening in their respective countries, anticipated growth in emerging film industries, and how they believe these emerging markets will change the way the film business is done.

Moderator

RK Chand

Panelists

Kevin Geiger
China

Prashant B.
Malaysia

Laura Dohrmann
India

Andi S. Boediman
Indonesia

General Information

Accessibility

The Convention Centre is handicap accessible. If you have special needs or requirements, please contact Conference Management at koelnmesse@siggraph.org.

Age Requirement Policies

Registered attendees under the age of 16 must be accompanied by an adult at all times.

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

Automated Teller Machines (ATMs) / Banks / Currency Exchange

ATMS

There are several ATMs located throughout the lobbies of Suntec Singapore International Convention & Exhibition Centre.

BANKS

Nearby banks include:
DBS
Suntec City Branch
3 Temask Boulevard #01-054 Suntec City Mall
Singapore 038983
08:30–16:30
Sat: 08:30–13:00

Citibank
1 Raffles Link
#01-01 One Raffles Link Building
Singapore 039393
09:30–18:00
Sat: 09:30–12:00

POSB
3 Temasek Boulevard
#02-003/005/007 Suntec City Mall
Singapore 038983
11:00–19:00
Sat: 11:00 – 19:00

CURRENCY EXCHANGE

There are two Foreign Currency Exchange counters located within Suntec City Mall.

Bookstore

Gallery East
Thursday–Saturday, 11–13 December
07:30–18:00

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

Bookstore refunds will only be processed during the conference. All bookstore policies are those of BreakPoint Books and not SIGGRAPH Asia 2008.

Busing

SIGGRAPH Asia 2008 provides a one-way complimentary shuttle service between conference hotels (not within walking distance) and the Suntec Singapore International Convention & Exhibition Centre every morning. Departure times are available at the hotels.

IMPORTANT NOTICE

The SIGGRAPH Asia 2008 Shuttle Service is available only to attendees who register at official conference hotels through the SIGGRAPH Asia 2008 hotel reservation system. All attendees must be badged before they can board the Shuttle Service.

Child Care

Child care will not be provided at SIGGRAPH Asia 2008. Contact your hotel concierge for suggestions.

Conference Management Office

Level 5 Office (Via Lift near Joaquim)

If you have questions regarding SIGGRAPH Asia 2008, call or stop by this office any time during conference hours.

Conference Policies

To be admitted to the Reception, you must have a ticket (your registration badge does not provide access).

SIGGRAPH Asia 2008 reserves the right to deny registration or entrance to any attendee or prospective attendee, and to cancel an existing registration, if it determines that a registration or an attendee is not in the best interest of SIGGRAPH Asia 2008 or ACM SIGGRAPH.

Lost badges cannot be replaced. If you lose your badge, you must register again at the published rates to obtain a new badge.

No cameras or recording devices are permitted at SIGGRAPH Asia 2008. Abuse of this policy will result in revocation of the individual's regisrations credentials.

SIGGRAPH Asia 2008 employs a professional photographer and reserves the right to use all images that this photographer takes during the conference for publication and promotion of future ACM SIGGRAPH events.

SIGGRAPH Asia 2008 conference documentation and merchandise will not be shipped, nor will refunds be given for any material not picked up at the Merchandise Pickup Centre.

Exhibition Management Office

Outside Hall 401

Exhibition Management representatives are available during conference hours to meet with exhibitors and help with plans for exhibiting at SIGGRAPH Asia 2009.

General Information

Exhibitor Registration

Lobby Level
Open during registration hours. See Registration.

Cafeteria / Restaurants / Stand Catering

A variety of coffee shops, snack bars and restaurants are available in the convention centre and within the Suntec City Mall. For Stand Catering Services, Exhibitors are required to contact Suntec Singapore at +65.6825.2313. Please be informed that outside food and drinks are strictly not allowed within the Exhibition and Conference vicinity.

Housing Desk

Exhibition Management Office, Outside Hall 401

Complete information about SIGGRAPH Asia 2008 hotel accommodations. Open during show opening hours. See Registration.

International Centre

SIGGRAPH Village, Hall 401

Thursday–Saturday, 11–13 December
09:30–18:30

The SIGGRAPH Asia 2008 International Committee and a multi-lingual staff of student volunteers answer questions, offer suggestions, provide informal translation services, and make connections with international attendees.

Wireless Internet Access

SIGGRAPH Asia 2008 provides 802.11 a/b/g wireless network access in most areas of the convention centre. To use the wireless network, attendees should have their own wireless (802.11a, b or g compatible) cards.

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

1. Document all existing TCP/IP and wireless configuration information before you make any changes.

2. Configure your laptop to use DHCP.

3. Configure your wireless adapter Network Name (SSID) to be “SA2008”.

4. Disable encryption on your wireless adapter.

The SIGGRAPH Asia 2008 wireless network provides open, unencrypted communications for conference attendees. The system is not secure and can be monitored by others.

SIGGRAPH Asia 2008 does not provide public workstations for internet access.

Lost and Found

Exhibition Management Office, Outside Hall 401

To enquire about lost items during and after the conference, proceed to the Lost & Found desk outside Hall 401. All lost items (including badges) should be turned into this location where they will be logged and stored until the conclusion of the conference. After the conference, all lost and found items will be turned over to the Suntec Singapore International Convention & Exhibition Centre Security office.

Merchandise Pickup Centre

Gallery East

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

Parking

SIGGRAPH Asia 2008 attendees can park at Basement 1 (B1) of Suntec Singapore International Convention & Exhibition Centre.

The rates are as follow:
Mondays to Fridays (except Public Holidays)

07:00–17:00	$1.07 per half hour or part thereof
17:00–24:00	$2.14 flat per entry
24:00–07:00	$1.07 per hour or part thereof

Saturdays, Sundays and Public Holidays

07:00–24:00	$1.07 per hour or part thereof
24:00–07:00	$1.07 per hour or part thereof

Registration

Lobby, Level 1

Tuesday, 9 December	15:00–19:00
Wednesday, 10 December	07:30–18:00
Thursday, 11 December	07:30–18:00
Friday, 12 December	07:30–18:00
Saturday, 13 December	07:30–18:00

Speaker Preparation Room

Room 308, Level 3

Tuesday, 9 December
09:00–18:00

Wednesday–Saturday, 10–13 December
07:00–18:00

Please pick up your registration credentials and conference information at the registration counter on Level 1 before proceeding to the Speaker Preparation Room on Level 3, where you will collect your speaker ribbons and badge holder.

If you are presenting at the conference, you should check in with Speaker Prep at least 24 hours before your session to review your materials, practice your presentations, and test the playback of your animations. It's the best place to make sure that you will have everything you need for your session.

Technical Materials Available for Purchase

Technical materials included with your registration must be picked up at the SIGGRAPH Asia 2008 Merchandise Pickup Centre. Lost merchandise vouchers will not be replaced.

Full Conference DVD-ROM

This digital publication contains the electronic version of the Technical Papers, including images and supplemental material; the Course Notes, including supplemental materials (movies, source code, HTML presentations); and abstracts and supplemental materials from both the Educators Programme and Sketches & Posters. The content of the printed version of the ACM Transactions on Graphics (Conference Proceedings Special Issue) and the Digital Experiences: the SIGGRAPH ASIA 2008 Art Gallery, Emerging Technologies, and Computer Animation Festival Catalogue is also included on the Full Conference DVD-ROM.
The DVD-ROM is included with all Full Conference Access registrations, and it is available for purchase at SIGGRAPH Asia 2008.

ACM Transactions on Graphics

The printed ACM Transactions on Graphics (Conference Proceedings Special Issue) contains the Technical Papers. This publication is available for purchase at SIGGRAPH Asia 2008.

Digital Experiences: SIGGRAPH Asia 2008 Art Gallery, Emerging Technologies, and Computer Animation Festival Catalogue

Includes the permanent record of images from the Art Gallery, the Computer Animation Festival, and Emerging Technologies. This publication is available for purchase at SIGGRAPH Asia 2008.

SIGGRAPH Asia 2008 Video Review

Contains animations presented at the SIGGRAPH Asia 2008 Computer Animation Festival. It is available to purchase at SIGGRAPH Asia 2008.

To order these materials after the conference, contact:

ACM, Member Services:
+1.212.626.0500
(International and New York Metro Area)

800.342.6626
(Continental US and Canada)

+1.212.944.1318 fax
orders@acm.org

Registration

Registration

Location: Lobby, Level 1

Tuesday, 9 December	15:00–19:00
Wednesday, 10 December	07:30–18:00
Thursday, 11 December	07:30–18:00
Friday, 12 December	07:30–18:00
Saturday, 13 December	07:30–18:00

Conference Registration Categories

★	Full Conference Access Pass	Includes admission to all programmes and events of SIGGRAPH Asia 2008. The Full Conference DVD-ROM and ticket for the SIGGRAPH Asia 2008 Reception are also included.
●	Full Conference One-Day Access Pass	Includes admission to all programmes and events for one day of SIGGRAPH Asia 2008. Access to the Exhibition and Exhibitor Tech talks is included for three days, 11–13 December.
❍	Basic Conference Access Pass/Exhibits Plus Pass	Includes admission to the Art Gallery and Emerging Technologies, the Animation Theatre, Posters, Technical Papers & Sketches Fast Forward Sessions, the Exhibition, Exhibitor Tech Talks, and the Job Fair for all conference days. An Electronic Theatre ticket and the Full Conference DVD-ROM can be purchased separately.
E	Exhibits Only Ticket	Exhibits Only admission is available only upon invitation from a SIGGRAPH Asia 2008 exhibitor. You must have received an invitation code in order to be eligible. Exhibits Only ticket includes admission to the Exhibition and Exhibitor Tech Talks only.

SIGGRAPH Asia 2008 Registration Fees (in Singapore dollars)

★ **Full Conference Access**	On or before 31 Oct	After 31 Oct
ACM/ACM SIGGRAPH/ SIGCHI Member	S$ 750	S$ 850
Student Member	S$ 350	S$ 450
Non-Member	S$ 800	S$ 900

● **Full Conference One-Day**	On or before 31 Oct	After 31 Oct
ACM/ACM SIGGRAPH/ SIGCHI Member	S$ 300	S$ 350
Student Member	S$ 300	S$ 350
Non-Member	S$ 300	S$ 350

❍ **Basic Conference**	On or before 31 Oct	After 31 Oct
ACM/ACM SIGGRAPH/ SIGCHI Member	S$ 50	S$ 75
Student Member	S$ 50	S$ 75
Non-Member	S$ 50	S$ 75

★ ● ❍	Art Gallery
★ ●	Computer Animation Festival Electronic Theatre
★ ● ❍	Animation Theatre
★ ●	Courses
★ ●	Educators Programme
★ ● ❍	Emerging Technologies
★ ● ❍ **E**	Exhibition
★ ● ❍ **E**	Exhibitor Tech Talks
★ ● ❍	Fast Forward Session Technical Papers
★ ● ❍	Fast Forward Session Sketches
★ ●	Featured Speakers
★ ● ❍	Job Fair
★ ● ❍	Posters
★	Reception
★ ●	Sketches
★ ● ❍	Special Sessions
★ ●	Technical Papers
★	Full Conference DVD-ROM

Registration

Member Rate

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

Student Rate

You must be a full-time student to qualify. You must provide your 2008 ACM student membership number to qualify for student membership rates. This applies to those registering in advance as well as at the conference.

Press Centre

Exhibition, Hall 401

The press centre is open from 09:30–18:30, 11–13 December. The press centre is not available on 10 December.

Media Registration

Media representatives must register in person at the registration counter located on Level 1. You must submit full and proper media credentials for a media pass. No exceptions will be made.

Early Exhibition Floor Access

A "sneak preview" of the latest products and applications, for registered media representatives only, before the Exhibition opens to attendees: Thursday, 11 December, 08:30–09:30

Media Tours of the Art Gallery and Emerging Technologies

Get up-close and personal with the Chair and Co-Chairs of these programmes as they take you through the inspiring pieces of art and technology on display. A media tour schedule is available in the Press Centre.

Exhibitor Media Events

A schedule of various exhibitor media events is available in the Press Centre located in Hall 401.

★ ●

Days & Hours

Wednesday, 10 December	08:30–17:30
Thursday, 11 December	08:30–17:30
Friday, 12 December	08:30–17:30
Saturday, 13 December	08:30–17:30

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

Courses

International experts present instructional sessions on every aspect of computer graphics and interactive techniques: animation, computer-human interaction, entertainment, gaming, scientific visualisation, recent breakthroughs, cool programming adventures, and more.

These unique educational opportunities are only available at SIGGRAPH Asia 2008.

Courses Committee

CHAIR

Matt Adcock
CSIRO

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PIXAR'S RENDERMAN

★ ●

09:00–17:00
Level: Beginner
Computer Lab

Attendance for this course is limited to 25 persons.

Attendance is on a first-come, first-served basis. Attendees who are interested in this session are required to join a dedicated queue labelled Pixar's RenderMan Course at Level 1, Registration Counter, Suntec Singapore International Convention and Exhibition Centre. The first 25 persons in this queue with their registration badges already collected will be allowed to attend the course. If you are hoping to attend this course, you are strongly advised to collect your registration badge the day before.

Transportation will be provided to the offsite computer laboratory where this course is presented, and at the end of the course, a return trip back to the convention centre.

Departure time is 08:15, Wednesday, 10 December.

An overview of:
- The structure of RenderMan scene descriptions
- The implementation and application of custom shaders
- The use of RenderMan for Maya Pro

This full-day course is an intensive, hands-on practical introduction to the RenderMan system and Pixar's RenderMan, a high-quality renderer that is widely used in the animation and digital effects industry.

In the first part of the course, attendees gain sufficient familiarity with RenderMan's scene description protocol to enable them to edit and manipulate RIB files. RIB files enable modelling and animation applications to communicate with Pixar's RenderMan.

The second part of the course introduces the use of the RenderMan Shading Language (RSL). Attendees are not expected to have prior programming experience. The intention is to provide an overview of the creative potential of the shading language to the point where attendees will be confident to continue creating their own custom shaders with RSL. During the final part of the course, attendees use Pixar's high-end product, RenderMan Studio, in conjunction with AutoDesk's Maya. Prior experience with Maya will be advantageous, but it is not required.

PREREQUISITES
None

INTENDED AUDIENCE
This course is ideal for artists and designers who have prior experience using a 3D modelling and animation application but who wish to investigate the features of a graphics system that has become the de-facto standard for the feature film industry.

INSTRUCTOR
Malcolm A. Kesson
Savannah College of Art and Design

SCHEDULE

09:00 Overview

09:15 Rib Exercises
RenderMan rib files:
- Options, attributes, camera & world blocks
- Camera transformations & geometry
- Archived geometry (pre-baked ribs)
- AOVs–many outputs from a single render

10:30 Break

11:00 Rib Exercises (continued)
- Stereo rendering
- Procedural primitives–creating geometry at render-time

RSL Exercises
RenderMan Shading Language:
- Language overview
- Patterns
- Point based occlusion

13:30 RenderMan Studio, RSL & Slim
- Sub-surface scattering
- Brickmaps rendered as geometry

15:00 Break

15:30 RenderMan Studio & Slim
- Using custom shaders in HyperShade
- Appearance & template Slim files
- Creating custom Slim nodes

INTRODUCTION TO COMPUTER GRAPHICS

★ ● ❍

08:30–12:15
Level: Beginner
Room 301/302

This course is open to attendees in three registration categories: Full Conference Access, One-Day Full Conference, and Basic Conference/Exhibits Plus. All other courses require Full Conference registration.

A SIGGRAPH Asia conference is an exciting event, but it is often an intimidating experience for first-time attendees. There are so many new terms, new concepts, and new products to understand. And all the simultaneous programmes leave new attendees baffled and frustrated about how to spend their time.

This course is designed to ease newcomers into the SIGGRAPH Asia 2008 experience by presenting the fundamental concepts and vocabulary at a level that can be readily understood. Far from being made up of dry facts, this course also portrays the fun and excitement that led most of us to the SIGGRAPH Asia conference in the first place. After the course, attendees will be well-prepared to understand, appreciate, enjoy, network in, and learn from the rest of the SIGGRAPH Asia experience.

PREREQUISITES

A basic understanding of computers and algebra.

INTENDED AUDIENCE

The complete newcomer who wants to learn some of the basic terms and concepts in computer graphics, and receive some guidance on how to get the most out of attending SIGGRAPH Asia 2008.

INSTRUCTORS

Mike Bailey
Oregon State University

Steve Cunningham
Brown Cunningham Associates

SCHEDULE

08:30 Welcome and Overview
Presenter: Mike Bailey
- Course goals and schedule
- Generic Graphics Process

08:45 Graphics Hardware
Presenter: Mike Bailey
- How to understand what they are telling you in the Exhibition

09:30 Modelling
Presenter: Steve Cunningham
- The creation of 3D models

10:15 Break

10:30 Rendering
Presenter: Steve Cunningham
- Two approaches: start at the object and start at the eye
- Local and global shading

11:00 GPU Shaders
Presenters: Bailey & Cunningham
- Three types of shaders
- What kinds of things you can do and why you care

11:30 Scientific and Data Visualisation
Presenter: Mike Bailey

12:00 Finding additional information
Presenters: Bailey & Cunningham

FINDING YOUR PLACE IN DIGITAL PRODUCTION

★ ●

13:45–15:30
Level: Beginner
Room 301/302

Deciding to pursue a job in digital production is easy for many people, but once you've decided that you want to help produce animation, visual effects, and video games, and you've completed the relevant training, then what? The process of preparing material to present to a potential employer can be nerve wracking and confusing. Many aspiring artists put together a demo reel before even considering what jobs they might apply for.

This tutorial presents an inside view of what the industry expects from a candidate's show reel, portfolio, and résumé, and the simple steps artists can take to live up to those expectations. While there is quite a bit of information available about the mechanics of putting together a demo reel and résumé, those details are not very useful if you don't know what purpose your reel will be serving.

There is intense competition for digital production jobs, and just having a reel with some animation or modelling on it is no longer all it takes to land an interview. Industry veterans Tad Leckman and Patricia Kung share their experiences reviewing reels and résumés, and preparing young artists for careers in digital media. They also show and analyse examples of effective demo reel.

PREREQUISITES
Basic understanding of CG terminology.

INTENDED AUDIENCE
Students, new graduates, and individuals with production experience who are thinking about their next move. This tutorial is also useful for educators, parents, and recruiting professionals.

INSTRUCTORS
Tad Leckman
Lucasfilm Animation Singapore

Patricia Kung
Animal Logic

SCHEDULE

Presenter: Tad Leckman

13:45 Research

14:00 Targeting Your Application

14:15 Material

Your Application Package

Presenter: Patricia Kung

14:30 Résumé

14:34 Showreel

14:38 Labelling

14:41 Submission

14:44 Content

14:47 Shot Breakdown

14:51 Portfolio

14:55 The Interview

15:10 What Companies Value

15:20 Q&A

INTERACTIVE MASSIVE MODEL RENDERING

★ ●

08:30–17:30
Level: Intermediate
Room 306

Users consistently try to manage and display more data than any computing system allows, especially when they work with 3D models for films, games, CAD systems, medical imaging, seismic exploration, information spaces, etc. In this course, seven international researchers and practitioners present software and hardware strategies for real-time visualisation of and interaction with massive models.

Even when they work with higher-performance computing systems, game and entertainment producers use a set of techniques to limit model size during real-time visualisation and interaction sessions. However, polygon decimation, texture maps, and related techniques do not readily apply to domains where high levels of visual accuracy are essential. Such models can contain a billion polygons or voxels and millions of individually selectable objects.

Although the course addresses ray tracing and rasterization, its objective is to explore a systems approach. It focuses on system integration and optimization techniques that let extract higher performance, such as:

• Software techniques to overcome performance and memory size limitations (kd-trees, occlusion culling, LODs, multi-threaded programming, memory-mapped files, display lists, cache coherence).

• Computing system architecture (parallel-processor architectures, single and multi-GPU hardware, thin client, hardware occlusion culling, cell computers, multi-core CPUs).

• Scalable system architecture (preprocessing, large user communities, model-configuration management, network transfer of basic geometry, variable form-factor display devices).

• Practical implementation issues.

The course summarizes overall performance-improvement strategies, gives examples of industrial and academic approaches using both rasterization and ray tracing, and concludes with real-world experience in a commercial environment.

PREREQUISITES

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

INTENDED AUDIENCE

This course is intended for users of complex models and practitioners who build real-time 3D applications. The techniques are applicable to any community that commonly reduces model detail (games, for example) or works only with model chunks (CAD, for example).

INSTRUCTORS

Enrico Gobbetti
Center for Advanced Studies, Research and Development in Sardinia

Philipp Slusallek
Universität des Saarlandes

Andreas Dietrich
NVIDIA Research

Marco Agus
Center for Advanced Studies, Research and Development in Sardinia

Renato Pajarola
Universität Zürich

Sung-eui Yoon
Korea Advanced Institute of Science and Technology

SCHEDULE

08:30 Course Introduction
Presenter: Sung-eui Yoon

08:45 Motivation and Challenges
Presenter: Philipp Slusallek

09:50 Coffee Break

10:05 Output Sensitive Techniques
Presenters: Gobbetti & Agus

11:10 Parallelization for Rasterization
Presenter: Renato Pajarola

12:15 Lunch Break

13:45 Massive Model Visualisation Using Realtime Ray Tracing
Presenters: Slusallek & Dietrich

15:30 Coffee Break

15:45 Data Management Issues
Presenter: Sung-eui Yoon

17:00 Stump the Speaker Panel
Presenter: All

AN INTRODUCTION TO PROGRAMMING WITH OPENGL AND OPENGL ES

★ ●

08:30–17:30
Level: Beginner
Room 303/304

OpenGL, and its derivative API OpenGL ES, are among the most widely available programming libraries for computer graphics applications, and are used for almost every discipline of computer graphics: research, scientific visualisation, entertainment and visual effects, computer-aided design, interactive gaming, and many more. This course provides an accelerated introduction to creating applications using the OpenGL application-programming interfaces (API). It covers fundamental topics such as modelling, lighting, depth buffering, and texture mapping, and introduces advanced topics such as using vertex and fragment shaders.

The course introduces OpenGL's operation through more than just code snippets and static images. It utilizes several applications that introduce various subsets of the OpenGL API (for example, lighting or texture mapping). And it includes tutorials that allow attendees to interactively modify the values passed into OpenGL and immediately see the resulting images.

Topics include how OpenGL represents geometric objects; how lighting, texture mapping, anti-aliasing, and other supported features are applied; and how to use pixel images, both in elementary image processing and imagery for texture maps. The OpenGL Shading Language (GLSL) is introduced using both vertex and fragment programs. Advanced topics, whose scope precludes a detailed discussion in an introductory class, are introduced with references for further study.

PREREQUISITES

Ability to read simple programmes written in the C language. No previous experience writing graphics programmes is required. Knowledge of basic concepts from linear algebra (vector notation and matrix multiplication) is useful but not required.

INTENDED AUDIENCE

Novice graphics programmers who want to learn how to author interactive, 3D, graphics applications using OpenGL and OpenGL ES.

INSTRUCTORS

Dave Shreiner
ARM, Inc.

Ed Angel
University of New Mexico

SCHEDULE

08:30 Welcome, Introduction of Speakers, Course Overview

08:40 Getting Started
- What you need to write an OpenGL application
- Opening an OpenGL window
- Accessing OpenGL functions
- Using user input

09:10 Working with Objects in OpenGL
- How OpenGL specifies objects
- Working with geometric transformations
- Depth buffering
- Animation–getting objects to move

09:55 Transformations
- Transformation pipeline
- Viewing transformations

10:15 Break

10:30 Transformations (continued)
- Rotation, translation, scaling

11:00 Lighting
- Specifying lighting, normals
- Lights, Materials, Action...

11:30 Texture Mapping
- Fundamentals
- Loading textures
- Enabling texture mapping
- Specifying texture coordinates
- How textures are applied

12:15 Lunch

13:45 OpenGL Modes
- Immediate Mode
- Retained Mode
- Display Lists

14:00 Vertex Arrays

14:30 OpenGL ES
- It's OpenGL, just lighter
- OpenGL ES versions: 1.1 and 2.0
- What did you just learn that you need to forget
- EGL

15:00 Buffers
- Compositing and blending
- Other Buffers

15:30 Break

15:45 Programmable Pipelines
- Vertex shaders
- Fragment shaders

16:45 OpenGL 3.0 and 3.1

17:15 Conclusion and Q&A

SCATTERING

★ ●

08:30–12:15
Level: Intermediate
Room 305

A taxonomy of scattering phenomena and how to treat them efficiently, by leveraging the wealth of knowledge from computer graphics and computer vision. This course shows a wide range of multidisciplinary applications in both overlapping fields, from appearance modelling to vision in bad weather, and reviews measurement techniques.

Computer graphics and computer vision deal with acquiring, interpreting, and presenting the rich visual world around us. These are exciting multidisciplinary fields of research with a wide spectrum of applications that affect our daily lives. However, most current computer-generated imagery represents scenes with clear atmospheres, neglecting light scattering effects. Analogously, most computer-vision systems are not successful when deployed in uncontrolled outdoor environments.

This course addresses the challenges presented by light scattering in computer graphics and computer vision. Both fields have seen great advances over the past few years, but most of the existing algorithms still assume that light emitted by a source or reflected off a surface reaches the sensor unaltered. From a computer graphics perspective, this is due mainly to the complex interactions that occur and the high computational costs of simulating them. In computer vision, scattering has traditionally been considered as noise that one should ideally get rid of.

Scattering effects are one fundamental hurdle that must be overcome to significantly extend and enhance current state-of-the-art graphics and vision techniques and achieve successful impact in a wide range of domains. Given the increasing overlap between computer graphics and computer vision, including hot research fields such as computational photography, this course is useful for practitioners in both communities and everybody who studies the intersection of the two.

PREREQUISITES
None

INTENDED AUDIENCE
This course is intended for people involved in computer graphics, computer vision, or related fields such as computational photography. It is particularly relevant to SIGGRAPH Asia attendees, as it provides a good understating of scattering phenomena, state-of-the-art techniques to simulate it and treat it, and a wide range of applications. It is especially useful for attendees who are interested in particular applications such as medical imaging, oceanography, driving simulators, and game production.

INSTRUCTORS
Diego Gutierrez
Universidad de Zaragoza

Henrik Wann Jensen
University of California, San Diego

Srinivasa Narasimham
Carnegie Mellon University

Wojciech Jarosz
University of California, San Diego

SCHEDULE

08:30 Welcome and Introduction
Presenter: Diego Gutierrez

08:45 Rendering Scattering Media
Presenter: Wojciech Jarosz

09:25 Real-Time Rendering
Presenter: Srinivasa Narasimham

09:45 Scattering Materials
Presenter: Henrik Wann Jensen

10:15 Break

10:30 Inelastic Scattering
Presenter: Diego Gutierrez

10:45 Underwater Imaging
Presenter: Srinivasa Narasimham

11:05 Scattering and Vision
Presenter: Srinivasa Narasimham

11:30 Acquisition and Measurement
Presenter: Henrik Wann Jensen

12:00 Wrap up and Discussion
Presenter: All

LIGHT INTERACTION WITH HUMAN SKIN: FROM BELIEVABLE IMAGES TO PREDICTABLE MODELS

★ ●

13:45–17:30
Level: Intermediate
Room 305

This course on biophysically based models of light interaction with skin tissues provides details and interdisciplinary concepts often omitted from publications. The emphasis of the course is on scientific issues that need to be addressed in rendering of realistic and predictable images of human skin.

Recent research in image synthesis has focused on rendering of believable and predictable images of biological materials. This course addresses an important topic in this area: predictive simulation of skin appearance. The modelling approaches, algorithms, and data examined during this course can be also applied to rendering other organic materials such as hair and ocular tissues.

The first module of the course provides the biophysical background required not only for development of models of light interaction with organic materials, but also for their evaluation. It begins with a review of optics and "measurement-of-appearance" concepts, followed by a presentation of biological factors involved in the processes of light propagation and absorption in skin tissue. A concise review of modelling approaches used in biomedical and related fields, and often cited by computer graphics researchers, completes this module. The second module provides detailed descriptions of computer graphics models of light interaction with human skin, including approaches to practical issues involving their implementation and analysis of their strengths and limitations. Recent developments involving these models, such as extensions, applications, and more accurate or efficient versions, are also examined. The course concludes with a discussion of current and future challenges related to rendering human tissues.

PREREQUISITES

Familiarity with basic optics concepts and radiometric terms. Attendees should have a working knowledge of standard graphics techniques and terminology. Experience with numerical methods is helpful, but not required.

INTENDED AUDIENCE

Students, practitioners, and researchers interested in rendering, biomedical imaging, and natural phenomena.

INSTRUCTORS

Gladimir Baranoski
University of Waterloo

Aravind Krishnaswamy
Adobe Systems Incorporated

SCHEDULE

Module I–Biophysical background

13:45 Introduction
Presenter: Gladimir Baranoski

14:05 Light, Optics, and Appearance
Presenter: Aravind Krishnaswamy

14:35 Biological Issues

15:00 Review of Models Used in Scientific Applications
Presenter: Gladimir Baranoski

15:30 Break

Module II–Computer Graphics Modelling

15:45 The Multilayer Scattering Model
Presenter: Gladimir Baranoski

16:05 The Discrete-Ordinate Model
Presenter: Gladimir Baranoski

16:20 The Biophysically Based Spectral Model
Presenter: Aravind Krishnaswamy

16:40 The Diffusion Theory-Based Model and Extensions
Presenter: Aravind Krishnaswamy

17:05 Current and Future Challenges
Presenter: Gladimir Baranoski

17:25 Conclusion
Presenter: Gladimir Baranoski

17:30 Panel Discussion (informal)
Presenters: Baranoski & Krishnaswamy

THERE CAN BE ONLY ONE: INDEPENDENT ANIMATION FOR THE LONELY

★ ●

15:45–17:30
Level: Beginner
Room 301/302

Many logistical challenges confront the independent animator. The task of single-handedly producing an animated piece (budget, schedule, creative blocks, copyright issues, sound quality, publicity, distribution, being a jack of all trades, etc.) at first may seem overwhelming and insurmountable, yet this is not the case. With proper planning and adoption of professional strategies for success, animations produced by independent creators can be more creative and higher quality, and their personal experiences can be more rewarding and enjoyable.

In this course, attendees learn pre-production concepts and techniques that will allow them to focus on creative aspects of their projects and avoid time-consuming scheduling mistakes that can cripple production. From concept to design, storyboard to animatic, attendees learn the smartest ways to work and how to save time, money, and heartache as they seek to realize their unique visions. Scheduling, resource management, and copyright issues are explored and discussed in the production segment of the course, to keep the artist on track for project completion while taking care of minute details that could lead to major legal and logistical roadblocks. In the post-production segment, the final edit, output issues, credits, DVD authoring, making press kits, and final submission to animation festivals are addressed, giving attendees a clear, organized plan of creation and production. With more careful organisation, animators can concentrate on the creative aspects of their work and not get bogged down in unforeseen details.

PREREQUISITES

General knowledge of computer graphics and at least beginning-level experience in digital animation and design, either 3D or 2D.

INTENDED AUDIENCE

This course is ideally suited for beginning and intermediate student animators, and interested professionals and (especially) independent animators.

INSTRUCTORS

Kristen Palana
The American University of Rome

Steve Rittler
William Paterson University

SCHEDULE

Presenters: Palana & Rittler

15:45 Introduction

- Brief personal introductions
- Course and topical overview
- Course goals and distribution of handouts
- Examples of several animations produced independently

16:00 Pre-production

- Concept
- Story and character development; visual development and continuity
- Scheduling and meeting the deadline, Part 1: Budgeting your time as well as your money
- Design: Identifying style, intent and your own strengths and weaknesses
- Storyboarding (visual demos)
- Scratch Tracks and rough sound: Identifying sound resources
- Animatics with scratch tracks
- Options for epics

16:40 Universal Production Concerns

- Scheduling and meeting the deadline, Part 2: Hardware, software, resource and supply issues. Keeping motivated and finishing on time.
- Copyright issues of sound and visuals
- Obtaining royalty-free music and sound effects (or creating your own)
- Examples of creating specific sounds (manipulating sound to create specific effects)
- Obtaining music licenses
  - How much it costs
  - How much time you will need
- The final edit with final sound
- Formatting for DVDs. Square pixels vs. rectangular pixels. Avoiding those final formatting mistakes.
- Submitting to animation festivals
  - Time-saving strategies
  - Publicity and promotion
  - Where to submit and odds of being selected, etc.; submission formats vs. exhibition formats
- Examples of independent animation produced by one or two people (visual demos)

17:20 Q&A and Conclusion

INTRODUCTION TO COMPUTER GRAPHICS SHADERS WITH GLMA

★ ●

13:45–17:30
Level: Intermediate
Room 314

An introduction to the programmable shader capabilities of the latest generation of graphics cards. Attendees learn to write graphics programmes using vertex, fragment, and geometry shaders, and use the glman tool to develop the shaders independently from the applications that will use them.

The course covers basic shader concepts, showing how shaders fit into the traditional graphics pipeline and how they communicate with each other and with an application. The GLSL language is introduced, along with the special types and built-in variable names it uses, and how the GLSL API is used to add shaders to an OpenGL application. Examples illustrate how shaders can be used to implement advanced modelling and shading features, and the use of noise, image manipulation techniques, and LOD operations. Specific applications of shaders in scientific visualisation are also presented. A CD containing the glman tool and code for all the examples used in the course will be distributed, and attendees will be able to install glman on their laptops and work with the examples as the course progresses.

After this course, an experienced OpenGL programmer will be able to write shader programmes and integrate them into graphics applications.

PREREQUISITES

A solid knowledge of fixed-function OpenGL programming and a basic understanding of higher-level computer graphics concepts.

INTENDED AUDIENCE

Anyone who wants to understand and use the vertex, fragment, and geometry shaders that are available with the GLSL shading language in the latest versions of OpenGL.

INSTRUCTORS

Steve Cunningham
Brown Cunningham Associates

Mike Bailey
Oregon State University

SCHEDULE

13:45 Welcome and Course Context
Presenter: Mike Bailey

13:50 Review of the Graphics Pipeline
Presenter: Steve Cunningham
- Block diagram
- For each block: what are the inputs and what are the outputs?

14:00 Basic Shader Concepts
Presenter: Steve Cunningham
- What blocks in the pipeline do the shaders replace or augment?
- Functions of vertex, fragment, and geometry shaders
- Relations between vertex, fragment, and geometry shaders

14:15 Coordinates and Transformations
Presenter: Steve Cunningham
- Homogeneous coordinates
- Coordinate systems: Model, World, Eye, Clip, NDC, Screen
- Normal transformation matrix
- Modelling and viewing transformations, viewing volumes, normals

14:30 Introduction to the OpenGL Shading Language (GLSL)
Presenter: Mike Bailey
- Similarities to, and differences from, C++

14:45 Communication Between Application And Shaders, and Between Shaders
Presenter: Mike Bailey
- The roles of uniform, varying, and attribute variables

14:55 Built-in GLSL Functions and Variables
Presenter: Mike Bailey

15:00 The glman Tool
Presenter: Mike Bailey
- How to use glman
- Illustrated examples

15:15 Vertex Shaders
Presenter: Mike Bailey
- Dome shading
- Surface coloring in model coordinates versus eye coordinates
- Stripes example
- Dots example

15:30 Break

15:45 Fragment Shaders
Presenter: Mike Bailey
- Shading: flat, smooth, Phong, exact, anisotropic
- Applying transfer functions

16:00 Textures
Presenter: Mike Bailey
- Texture data: unsigned byte, floating point, 2D, 3D, parameters, binding
- Texture application: texture units, multitextures, sampler functions, texture rectangle
  - Bump mapping
  - Texture techniques: Cube maps. reflection, refraction

16:20 Noise
Presenter: Mike Bailey
- Positional noise, gradient noise
- Fractional Brownian Motion (FBM, 1/f noise, octaves), turbulence.
  Noise in glman

16:30 Image manipulation in shaders
Presenter: Steve Cunningham
- Brightness
- Contrast
- Saturation
- Difference
- Dissolve
- Sharpness
- Edge detection
- Toon rendering

16:45 Visualisation
Presenter: Mike Bailey
- Cutting plane
- Volumes

17:00 The GLSL API
Presenter: Mike Bailey
- Compiling and attaching shaders

17:15 Geometry Shaders
Presenter: Steve Cunningham
- Inputs and outputs, built-in variables, built-in functions
- Silhouettes
- Adaptive subdivision

If time permits

Shader Special Effects
Presenter: Steve Cunningham
- Optical effects
- Atmospheric effects

Question and answers

MESH PARAMETERISATION: THEORY AND PRACTICE

★ ●

13:45–17:30
Level: Intermediate
Room 313

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

For any two surfaces with similar topology, there exists a bijective mapping between them. If one of these surfaces is a triangular mesh, the problem of computing such a mapping is referred to as mesh parameterisation. The surface that the mesh is mapped to is typically called the parameter domain.

Parameterisation was introduced to computer graphics for mapping textures onto surfaces. Over the last decade, it has gradually become a ubiquitous tool for many mesh-processing applications, including detail-mapping, detail-transfer, morphing, mesh-editing, mesh-completion, remeshing, compression, surface-fitting, and shape-analysis. In parallel to the increased interest in applying parameterisation, various methods were developed for different kinds of parameter domains and parameterisation properties.

The goal of this course is to familiarize attendees with the theoretical and practical aspects of mesh parameterisation. It provides the skills needed to implement or improve existing methods, investigate new approaches, and critically evaluate the suitability of the techniques for a particular application.

The course begins with an introduction to the general concept of parameterisation and an overview of its applications. The first half of the course then focuses on planar parameterisations, while the second addresses more recent approaches for alternative domains. The course covers the mathematical background, including intuitive explanations of parameterisation properties like bijectivity, conformality, stretch, and area-preservation. The state of the art is reviewed by explaining the main ideas of several approaches, summarizing their properties, and illustrating them using live demos. The course concludes with a list of open research problems and potential applications that can benefit from parameterisation.

PREREQUISITES

Some prior exposure to mesh representation of geometric models and a working knowledge of vector calculus, elementary linear algebra, and the fundamentals of computer graphics. Some familiarity with differential geometry and graph theory is useful, but not required.

INTENDED AUDIENCE

Graduate students, researchers, and application developers who want to understand and use the concepts and technologies used in mesh parameterisation.

INSTRUCTORS

Kai Hormann
Technische Universität Clausthal

Konrad Polthier
Freie Universität Berlin

Alla Sheffer
The University of British Columbia

SCHEDULE

13:45 Introduction
Presenter: Alla Sheffer

13:55 Barycentric Mappings
Presenter: Kai Hormann

14:20 Differential Geometry Primer
Presenter: Kai Hormann

14:45 Non-Linear Methods
Presenter: Alla Sheffer

15:15 Comparison and Applications of Planar Methods
Presenter: Kai Hormann

15:30 Break

15:45 Non-Planar Domains
Presenter: Kai Hormann

16:00 Cross-Parameterisation and Constraints
Presenter: Alla Sheffer

16:40 Global Parameterisation and Cone Points
Presenter: Konrad Polthier

17:25 Open Problems and Q/A
Presenter: All

REAL-TIME INDIVIDUALIZED VIRTUAL HUMANS

★ ●

13:45–17:30
Level: Intermediate
Room 311

The latest techniques for modelling fast, individualized, animatable virtual humans for real-time applications. Because a human is composed of a head and a body, this course analyses how these two parts can be modeled and globally animated. More precisely, it shows how individualized real-time bodies can be automatically generated from scanned data or from interactive measurements and how an automatic skeleton can be created for any body size, animated automatically, controlled in real time, and retargeted according to a motion-sequences database. Other topics include: facial animation from facial motion capture and simulation of interactive, realistic talking virtual humans, including personality models and complete body gestures.

The course also shows how crowds are modeled in real time using dynamic meshes, static meshes, and impostors, and explains techniques for adding variety to crowds, including individual animation, individualized path-planning, and accessories.

Several case studies in cultural heritage, emergency situations, and fasion modelling are presented to illustrate interaction with virtual humans. And the course concludes with a summary of open research topics in the virtual-human field.

PREREQUISITES

Familiarity with the fundamentals of computer graphics and computer animation, geometrical methods, collision detection and response, and real-time techniques is highly recommended but not mandatory.

INTENDED AUDIENCE

Developers of real-time virtual worlds, technical directors, researchers, and game developers who are looking for innovation as well as proven methodologies in simulating real-time virtual humans.

INSTRUCTORS

Nadia Magnenat-Thalmann
MIRALab, Université de Genève

Daniel Thalmann
VRlab, EPFL

SCHEDULE

13:45 Introduction and Overview
Presenter: Nadia Magnenat-Thalmann

13:50 Body Modelling and Deformations
Presenter: Nadia Magnenat-Thalmann

14:40 Modelling and Animating Faces
Presenter: Nadia Magnenat-Thalmann

15:30 Break

15:45 Motion Control for Virtual Humans
Presenter: Daniel Thalmann

16:30 Invidualized Models for Groups and Crowds
Presenter: Daniel Thalmann

17:15 Questions and Answers

MULTIPERSPECTIVE MODELLING, RENDERING, AND IMAGING

★ ●

15:45–17:30
Level: Intermediate
Room 312

A perspective image represents the spatial relationships of objects in a scene as they would appear from a single viewpoint. In contrast, a multiperspective image combines what is seen from several viewpoints into a single image. Despite their incongruity of view, effective multiperspective images can preserve spatial coherence and can depict, within a single context, details of a scene that are simultaneously inaccessible from a single view, yet easily interpretable by a viewer. In computer vision, multiperspective images have been used to analyse structure revealed via motion and generate panoramic images with a wide field of view using mirrors.

This tutorial provides a practical guide on topics in multiperspective modelling and rendering methods, and multiperspective imaging systems. It begins with a brief review of multiperspective image techniques frequently employed by artists. Illustrations include the visual paradoxes of Escher, the Cubism of Picasso and Braque, and multiperspective panoramas in cel-animations. The course characterises existing multiperspective camera models, with an emphasis on their underlying geometry and image properties, then demonstrates how to use these camera models for creating specific multiperspective rendering effects. The course includes demonstrations of several multiperspective imaging systems for extracting 3D geometry for computer vision.

PREREQUISITES
Basic understanding of camera operation, image processing, and machine vision.

INTENDED AUDIENCE
Digital artists, photographers, and computer graphics and computer vision researchers who use or build multiperspective cameras.

INSTRUCTOR
Jingyi Yu
University of Delaware

SCHEDULE

15:45	**Introduction to Multiperspective Cameras**
16:00	**Multiperspective Modelling Methods**
16:20	**Multiperspective Rendering Techniques**
16:40	**Multiperspective Imaging Systems**
17:00	**Future Work: Multiperspective Displays, Cameras, Rendering Hardware**
17:20	**Q&A**

CG PRODUCTION PRINCIPLES: KEEPING YOUR MONEY ON THE SCREEN & OFF THE FLOOR

★ ●

13:45–15:30
Level: Intermediate
Room 312

Are you satisfied with your production relationships, communication, adaptation, and high-quality delivery? Animation-industry veteran Kevin Geiger helps you analyse these questions with his unique organizational insight and signature presentation style. You will never look at your pipeline or your studio the same way again.

How much of your money makes it onto the screen? Got a leaky pipeline? Is your workflow trickling? Does your team approach work like a film, or like a science project? Can you roll with last-minute story changes? What economies of scale do you employ?

The global animation industry is as competitive as ever, with merciless markets, unforgiving audiences, and leaner profit margins. Yet independent and major productions alike seem content to burn through money (and people) as though they have resources to spare. This sort of waste is so pervasive in our industry that it is routinely acknowledged with a winking "you-know-how-production-is" acceptance. This attitude is not only irresponsible, it is also unsustainable. And it is easily addressed through insightful, considerate, and fearless assessment and action.

This course begins with an examination of the human factors and organizational considerations that are the foundation of all production (dys)function. Next, it covers workflow considerations and strategies, establishment (and erosion) of balance, common heuristic assumptions and errors, and the importance of clarity and adaptation within the studio environment. A series of "Golden Rules" for production leads into the characteristics of a balanced pipeline, an overview of a robust non-linear production pipeline, and specific departmental examples. Finally, the course reviews asset management with an eye toward organisation, flexibility, and transparency. The presentation concludes with a micro/macro view of the production paradigm, and the synergistic orchestration of these parts into a transcendent whole.

SCHEDULE

13:45	**Welcome & Introduction**
13:50	**Human Factors**
14:15	**Production Principles**
14:50	**Production Pipeline**
15:25	**Conclusion and Q&A**

PREREQUISITES
A working understanding of CG production processes and terminology.

INTENDED AUDIENCE
Artists, supervisors, managers, producers, and executives.

INSTRUCTOR
Kevin Geiger
Animation Options LLC

DISCRETE DIFFERENTIAL GEOMETRY: AN APPLIED INTRODUCTION

★ ●

08:30–17:30
Level: Advanced
Room 311

This new and elegant area of mathematics has exciting applications, as this course demonstrates by presenting practical examples in geometry processing (surface fairing, parameterisation, and remeshing) and simulation (of cloth, shells, rods, and fluids).

The behavior of physical systems is typically described by a set of continuous equations using tools such as geometric mechanics and differential geometry to analyze and capture their properties. For purposes of computation, one must derive discrete (in space and time) representations of the underlying equations. Researchers in a variety of areas have discovered that theories, which are discrete from the start and have key geometric properties built into their discrete description, can often more readily yield robust numerical simulations that are true to the underlying continuous systems: they exactly preserve invariants of the continuous systems in the discrete computational realm.

This course introduces the nascent field of discrete differential geometry, laying out fundamental concepts and surveying the exciting array of applications. It begins with a simple-to-follow presentation of discrete curves and discrete curvature. This backdrop introduces the overarching theme structure of preservation, which makes repeated appearances throughout the entire course. As the day proceeds, the course explores the question of which quantities one should measure on a discrete object such as a triangle mesh, and how one should define such measurements.

Following the introduction of the basic technical concepts, the course proceeds to investigate numerous exciting application areas. The lectures introduce and delve deeply into geometric modelling problems (including variational remeshing and parameterisation using discrete exterior calculus) and physical simulation of curves (such as elastic rods and hair), surfaces (such as cloth and thin-shells), and volumes (such as fluids). The emphasis is on understanding how structure preservation leads to simple and highly efficient implementations of important physical simulations.

PREREQUISITES

A working knowledge of vector calculus and elementary linear algebra. Optional prerequisites: some lectures may also assume some familiarity with physical simulation, geometry processing, and triangle and tetrahedral meshes. Recommended but not required: a basic understanding of continuous local differential geometry and classical mechanics.

INTENDED AUDIENCE

Graduate students, researchers, and application developers who seek a unified understanding of the mathematics underlying common geometry-processing operations and how these fundamentals apply to problems such as Laplacian smoothing, surface fairing using prescribed curvature flow, remeshing, conformal parameterisation, and cloth/shell/rod/fluid simulation.

INSTRUCTORS

Mathieu Desbrun
California Institute of Technology

Peter Schröder
California Institute of Technology

Max Wardetzky
Georg-August-Universität Göttingen

SCHEDULE

08:30 Welcome
Presenter: Max Wardetzky

08:45 Introduction
Presenter: Peter Schröder

09:30 Discrete Plates and Shells
Presenter: Max Wardetzky

10:15 Break

10:30 Conformal Equivalence of Triangle Meshes
Presenter: Peter Schröder

11:30 DEC: Discrete Exterior Calculus
Presenter: Mathieu Desbrun

12:15 Lunch

13:45 Applications of DEC to Fluids and Beyond
Presenter: Mathieu Desbrun

14:45 Coding Your Own DEC at Home
Presenter: Peter Schröder

15:30 Break

15:45 Discrete Elastic Rods
Presenter: Max Wardetzky

16:30 Time Integration
Presenter: Mathieu Desbrun

PARALLEL COMPUTING FOR GRAPHICS: BEYOND PROGRAMMABLE SHADING

★ ●

08:30–17:30
Level: Beginner
Room 312

This course provides an introduction to parallel-programming architectures and environments for interactive graphics and demonstrates how to combine traditional rendering API with advanced parallel computation.

There are strong indications that the future of interactive graphics involves a more flexible programming model than today's OpenGL/Direct3D pipelines. That means that graphics developers will need a basic understanding of how to combine emerging parallel-programming techniques with the traditional interactive rendering pipeline. The first half of the course introduces several parallel graphics architectures, programming environments, and the new types of graphics algorithms that will be possible. The second half presents case studies of how game developers, researchers, and graphics hardware vendors combine traditional rendering API techniques with advanced parallel computation. Each case study includes a live demo and discusses the mix of parallel-programming constructs used, details of the graphics algorithm, and how the rendering pipeline and computation interact to achieve the technical goals.

PREREQUISITES
Knowledge of general purpose programming languages.

INTENDED AUDIENCE
Developers interested in general purpose computing on the GPU.

INSTRUCTORS

Jason Yang
Advanced Micro Devices, Inc.

Justin Hensley
Advanced Micro Devices, Inc.

Tim Foley
Intel Corporation

Mark Harris
NVIDIA Corporation

Anselmo Lastra
University of North Carolina at Chapel Hill

Anjul Patney
University of California, Davis

Pedro V. Sander
Hong Kong University of Science and Technology

Jeremy Shopf
Advanced Micro Devices, Inc.

Kun Zhou
Zhejiang University

SCHEDULE

08:30 Introduction
Presenter: Anselmo Lastra

08:45 Throughput Computing: Hardware Basics
Presenter: Justin Hensley

09:30 Introduction to Parallel Programming Models
Presenter: Tim Foley

10:15 Break

10:30 Introduction to CUDA
Presenter: Mark Harris

11:00 BSGP: Bulk-Synchronous GPU Programming
Presenter: Kun Zhou

11:30 OpenCL
Presenter: Jason Yang

12:15 Lunch

13:45 Real-Time Reyes: Programmable Pipelines and Research Challenges
Presenter: Anjul Patney

14:15 Parallel Programming on Larrabee
Presenter: Tim Foley

14:50 Stream Computing for Graphics
Presenter: Jeremy Shopf

15:30 Break

15:45 Parallel Geometry Processing on Graphics Hardware
Presenter: Pedro V. Sander

16:10 Computational Graphics and Physics Simulation with CUDA
Presenter: Mark Harris

16:50 Next-Generation Graphics on Larrabee
Presenter: Tim Foley

17:25 Conclusion and Final Questions

SEEING IN 3D

★ ●

08:30–17:30
Level: Beginner
Room 313/314

Most people, even technical draftsmen, designers and computer graphics programmers, find it very difficult to visualise 3D shapes well enough to reason about them. This course demonstrates the problem and takes attendees through a series of exercises that help them acquire this important practical skill.

"Stand a cube on its corner. What is the shape of a horizontal cross-section taken at half the height of this object?" About four percent of human beings can reason about 3D space well enough to answer this question easily and with confidence. Most of us enter a state of panic when confronted by 3D problems. Yet it is possible to train yourself to think and visualize in 3D. This course helps attendees start thinking in 3D. Once they have the basic principles, they can develop the skill independently.

PREREQUISITES
Familiarity with some basic geometric ideas (for example, two planes meet in a straight line). Also helpful: awareness of how to find distances with Pythagoras' theorem, but this is used for only a few exercises, and the course can be understood without mathematics.

INTENDED AUDIENCE
Graphic artists, engineers, designers, computer graphics programmers, and students interested in graphics, drawing, or sculpture.

INSTRUCTORS
Geoff Wyvill
University of Otago

Bob Parslow
Independent Consultant

SCHEDULE
Presenter: Wyvill and Parslow

08:30 Session 1
- 1.1 The Hidden Man
- 1.2 The SIGGRAPH Subway
- 1.3 Identical cubes
- 1.4 A cube on its corner
- 1.5 The mind as an expert system shell
- 1.6 Building shapes in layers
- 1.7 More pyramids

10:15 Break

10:30 Session 2
- 2.1 The eye
- 2.2 Illusions
- 2.3 Lines in space
- 2.4 An application in mathematics
- 2.5 More cubes
- 2.6 Curious engineering drawings

12:15 Lunch

13.30 Session 3
- 3.1 Solids of intersection
- 3.2 Origami
- 3.3 Tensegrity
- 3.4 Turning a torus inside out

15:30 Break

15.45 Session 4
- 4.1 Road safety
- 4.2 Nova Plexus: understanding structure

ADVANCED ILLUMINATION TECHNIQUES FOR GPU-BASED VOLUME RAY CASTING

★ ●

08:30–12:15
Level: Intermediate
Room 311/312

In-depth instruction on advanced illumination techniques for volume ray casting implemented on the graphics processing unit (GPU). This course covers fast implementations of local and global illumination techniques for volume data and implicit surfaces, including ambient occlusion, deep shadow maps, and scattering effects.

Volume ray-casting techniques are important for both visual arts and visualisation. They support efficient generation of visual effects and visualisation of scientific data obtained by tomography or numerical simulation. Due to their flexibility, experts agree that GPU-based ray casting is the state-of-the art technique for interactive volume rendering. It will most likely replace existing slice-based techniques in the near future. Volume rendering techniques are also effective for direct rendering of implicit surfaces used for soft-body animation and constructive solid geometry.

The course, which begins with a detailed introduction to the concepts behind GPU-based ray casting, focuses on advanced illumination techniques that approximate physically based light transport more convincingly. Such techniques include interactive implementation of soft and hard shadows, ambient occlusion, and simple Monte-Carlo based approaches to global illumination, including translucency and scattering.

With these techniques, users can interactively create convincing images from volumetric data whose visual quality goes far beyond traditional approaches. Using volume rendering techniques, artists who create medical visualisation for science magazines may now work on tomographic scans directly, without creating polygonal models of anatomical structures.

PREREQUISITES

A working knowledge of computer graphics and basic programming skills, familiarity with graphics hardware and shading languages, and basic knowledge of volume data and interactive volume-rendering techniques.

INTENDED AUDIENCE

The steadily growing number of developers who create specialized implementations of volume-rendering techniques on state-of-the-art graphics hardware.

INSTRUCTORS

Christof Rezk-Salama
Universität Siegen

Markus Hadwiger
VRVis Research Center for Virtual Reality and Visualisation

Timo Ropinski
Westfälische Wilhelms-Universität Münster

Patric Ljung
Siemens Corporate Research

SCHEDULE

08:30 Introduction and Basics
Presenter: Markus Hadwiger
- Speaker introduction
- Application areas for volume rendering
- Benefits of ray-casting
- GPU-based volume ray-casting
- Space leaping and early ray termination
- Memory management

09:30 Light Interaction
Presenter: Timo Ropinski
- Light transport and illumination models
- Local volume illumination
- Specular reflections through ray-tracing soft vs. Hard shadows semi-transparent shadows with deep shadow maps simulation of color bleeding

10:15 Break

10:30 Ambient Occlusion
Presenter: Patric Ljung
- Ambient occlusion for isosurfaces
- Local ambient occlusion (DVR)
- Dynamic ambient occlusion (DVR)

11:15 Scattering
Presenter: Christof Rezk-Salama
- Monte-Carlo integration
- Single versus multiple scattering
- Translucency
- Phase functions and bsdfs
- Monte-carlo scattering
- Multiple scattering
- Practical examples
- Scattering with deep shadow maps

MODERN OPENGL: ITS DESIGN AND EVOLUTION

★ ●

13:45–17:30
Level: Intermediate
Room 311/312

A long-time implementer of OpenGL and the system's original architect explain OpenGL's design and evolution. OpenGL's state machine is now a complex data flow with multiple programmable stages. In this course, OpenGL practitioners can expect candid design explanations, advice for programming modern GPUs, and insight into OpenGL's future.

OpenGL was conceived in 1991 to provide an industry standard for programming the hardware graphics pipeline. The original design has evolved considerably over the last 17 years. Whereas capabilities mandated by OpenGL such as texture mapping and a stencil buffer were present only on the world's most expensive graphics hardware in 1991, now these features are completely pervasive in PCs and are even available in several hand-held devices. Over that time, OpenGL's original fixed-function state machine has evolved into a complex data flow including several application-programmable stages. And the performance of OpenGL has increased from 100x to over 1,000x in many important raw graphics operations.

This course explains how the modern (post-2006) graphics hardware pipeline is exposed through OpenGL. Kurt Akeley presents his personal retrospective on OpenGL's development. Attendees learn nine ways to write better OpenGL programs and how modern OpenGL implementations operate. In conclusion, the course assesses OpenGL's future evolution.

Whether you programme with OpenGL or program with another API such as Direct3D, this course gives you new insights into graphics hardware architecture, programmable shading, and how to take maximum advantage of modern GPUs.

PREREQUISITES
Familiarity with the OpenGL graphics system. Familiarity with other graphics APIs such as Direct3D is helpful. The course assumes that attendees are familiar with concepts such as rasterization, shading, texturing, and vertex transformation.

INTENDED AUDIENCE
Graphics practitioners who want to better understand the modern 3D graphics hardware pipeline and its evolution as expressed through OpenGL. OpenGL programmers who wan to learn how to update their programming practices to improve the performance and cross-platform portability of their OpenGL applications.

INSTRUCTORS
Mark Kilgard
NVIDIA Corporation

Kurt Akeley
Microsoft Research Silicon Valley

MODERATOR
Mark Levoy
Stanford University

SCHEDULE

13:45 Introductions
Presenter: Akeley & Kilgard

13:50 Modern OpenGL
Presenter: Mark Kilgard

14:40 Opengl's Evolution: A Personal Retrospective
Presenter: Kurt Akeley
- How a proprietary graphics library known as IRIS GL evolved into an industry standard. What can be learned about making standards that succeed? How has OpenGL's design held up over time?

15:05 Writing Better OpenGL
Presenter: Mark Kilgard

15:30 Break

15:45 Implementing OpenGL
Presenter: Mark Kilgard

16:15 OpenGL's Future Evolution
Presenter: Mark Kilgard

16:50 OpenGL in Context
Presenters: Akeley & Kilgard
- A facilitated conversation including slides and examples. Questions from the audience are encouraged during this segment.

INTERACTIVE INTRODUCTION TO X3D GRAPHICS

★ ●

13:15–17:30
Level: Beginner
Room 313/314

Extensible 3D (X3D) graphics is the open standard for 3D real-time communication on the web. X3D defines scene files that integrate network-enabled 3D graphics and multimedia. X3D applications are real-time, interactive, animated systems that can run stand-alone or in networked virtual environments. This tutorial focuses on the primary functionality of X3D including scene authoring, creation of geometry, web capabilities, designing animation chains, and user interaction.

Specific topics include animation design using interpolators and sequencers. The tutorial briefly examines embedded scripting, prototypes for extensibility, and various visualisation examples. Attendees learn hands-on how to build an X3D world, and they have access to the latest X3D Showcase DVD, which contains a wide variety of free and commercial viewers, authoring tools, and example content.

PREREQUISITES

Understanding 3D scene graphs and 3D modelling is helpful but not required. X3D can be learned without prior programming experience.

INTENDED AUDIENCE

Beginning modellers, who will learn how to create simple 3D scene graphs with animation and user interactivity; eperienced programmers, who will learn how their current knowledge can be expressed using a web standard for broader interoperability, and educators, who will learn how X3D can be used for introductory graphics courses.

INSTRUCTOR

Don Brutzman
Naval Postgraduate School

SCHEDULE

13:15 Optional: Guided Software Tool Setup for Early Arrivals

13:45 Course Commencement and Introduction

14:00 Getting Started with X3D
- Available viewers
- X3D-Edit modelling tool
- Examples and resources
- Book organization

14:30 Development History: VRML, Web Consortium, ISO, X3D

14:45 X3d Specification, Scene Graph Concepts, Xml

15:00 Profiles and Components for Extensibility

15:15 Shape and Geometry

15:30 Break

15:45 Grouping and Transformation

16:00 Viewing and Navigation

16:15 Appearance, Material and Textures

16:30 Animation and Behaviors, 10-Step Animation-Chain Construction with Routes

17:00 User Interactivity

17:15 Quick Look Ahead: Scripting and Prototypes For Further Extensibility

17:20 Course Review, Getting Involved, Discussion

DEVELOPING AUGMENTED REALITY APPLICATIONS

★ ●

08:30–12:15
Level: Beginner
Room 313/314

In this course, attendees learn how to use open source software to build their own augmented reality (AR) applications.

As computers become more and more invisible, AR (overlaying virtual images on the real world) is becoming an increasingly important application area for computer graphics and user-interface design. This detailed introduction to AR interface design and research includes reviews of important topics such as tracking and registration, interaction techniques, design principles, and usability evaluation, as well as key areas for current and future AR research. Case studies are presented in the application areas of gaming, entertainment, medicine, and engineering. Part of the course also involves hands-on demonstrations where attendees will be able to experience the technology for themselves.

Significant portions of the course are devoted to reviewing the ARToolKit and osgART open-source software tools that can be used to start building AR applications, as well as other supporting software tools. After this course, attendees will understand the fundamentals of AR interface design, the tools they can use to build AR applications, and how to evaluate them once they are built.

PREREQUISITES
Some programming experience is useful but not necessary. Also useful but not required: some experience with C/C++ programming and the OpenGL API.

INTENDED AUDIENCE
Academic and industrial researchers, and anyone interested in developing AR applications.

INSTRUCTORS
Mark Billinghurst
Human Interface Technology Laboratory
New Zealand

Raphaël Grasset
Human Interface Technology Laboratory
New Zealand

SCHEDULE
Presenters: Billinghurst & Grasset

08:30	**Introduction to Augmented Reality**
08:50	**AR Technology Components**
09:35	**Tools for Building AR Applications**
10:30	**AR Interface Design Principles**
11:20	**Usability Evaluation**
11:40	**Research Directions in AR**
12:10	**Conclusions**

★ ● Technical Papers ★ ● ❍ Technical Papers Fast Forward Session

Days & Hours

Thursday, 11 December	08:00–18:00
Friday, 12 December	08:00–18:00
Saturday, 13 December	08:00–18:00

Full Conference Access registration allows attendees access to all SIGGRAPH Asia 2008 Technical Papers. Seating is on a first-come, first-serve basis. Please be sure to arrive early for the Technical Papers sessions you wish to attend.

Technical Papers

The SIGGRAPH Asia 2008 Technical Papers programme is a premier international forum for disseminating provocative and important new work in computer graphics and interactive techniques. Leading international experts from Asia and beyond present peer-reviewed research in rendering, modelling, animation, human-computer interaction, computer-aided design, virtual reality, and visualisation.

This year also features ACM SIGGRAPH's first Technical Papers Fast Forward Session back-to-back. Get a preview of the latest research in computer graphics and interactive techniques and select the Technical Papers that you need to attend later in the week.

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TECHNICAL PAPERS FAST FORWARD SESSION

★ ● ❍

18:00–20:00
Theatre

ACM SIGGRAPH's first Technical Papers & Sketches Fast Forward Sessions back-to-back. Get a preview of the latest research in computer graphics and interactive techniques and select the Technical Papers and Sketches that you need to attend later in the week.

SHAPE MODELLING

★ ●

08:00–10:15
Room 303/304/305

SESSION CHAIR: Tao Ju

Single Image Tree Modelling
A simple and rapid method to generate a realistic 3D tree model from a single image.

Ping Tan
National University of Singapore

Tian Fang
Peng Zhao
Jianxiong Xiao
Long Quan
Hong Kong University of Science and Technology

Sketch-Based Tree Modelling Using Markov Random Field
A new system for converting a free-hand tree sketch into a full 3D model that is complex and realistic-looking. The problem is formulated as Markov random field.

Xuejin Chen
University of Science and Technology of China

Boris Neubert
Universität Konstanz

Ying-Qing Xu
Microsoft Research Asia

Oliver Deussen
Universität Konstanz

Sing Bing Kang
Microsoft Research Redmond

Space-Time Surface Reconstruction Using Incompressible Flow
This work deals with the problem of reconstructing watertight objects deforming across time. The process takes advantage of space-time coherence and adopts a global approach considering all frames simultaneously.

Andrei Sharf
Dan Anthony Alcantara
University of California, Davis

Thomas Lewiner
Pontifícia Universidade Católica do Rio de Janeiro

Chen Greif
Alla Sheffer
The University of British Columbia

Nina Amenta
University of California, Davis

Daniel Cohen-Or
Tel-Aviv University

Non-Homogeneous Resizing of Complex Models
Resizing of 3D models can be very useful when creating new models or placing models inside different scenes. However, straightforward nonuniform scaling can destroy features and lead to serious visual artifacts. This paper introduces a method that resizes 3D models in an intuitive way, protecting model features and structure.

Vladislav Kraevoy
Alla Sheffer
The University of British Columbia

Ariel Shamir
Interdisciplinary Center Herzliya

Daniel Cohen-Or
Tel-Aviv University

Mesh Ensemble Motion Graphs: Data-Driven Mesh Animation with Constraints
This approach to data-driven animation of high-dimensional mesh ensembles, such as tree-structured botanical models, proposes a randomized space-time optimization algorithm for precomputing smooth asynchronous transitions that also avoid introducing non-physical self-collisions.

Doug L. James
Christopher D. Twigg
Andrew Cove
Robert Y. Wang
Cornell University

CHARACTER ANIMATION I

★ ●

13:45–15:30
Room 303/304/305

SESSION CHAIR: Subodh Kumar

Animating Responsive Characters with Dynamic Constraints in Near-Unactuated Coordinates
An approach to animating physically responsive virtual characters by combining kinematic pose control with dynamic constraints in the muscle-actuation space.

Yuting Ye
C. Karen Liu
Georgia Institute of Technology

Synthesis of Constrained Walking Skills
A flexible framework for locomotion that enables physically simulated characters to navigate across terrains with gaps and other stepping constraints.

Stelian Coros
KangKang Yin
Philippe Beaudoin
Michiel van de Panne
The University of British Columbia

Interaction Patches for Multi-Character Animation
A method to generate large-scale character animation, such as a character fighting with many enemies, and a crowd passing luggage one after another in a warehouse.

Hubert P.H. Shum
Taku Komura
University of Edinburgh

Masashi Shiraishi
Waseda University

Shuntaro Yamazaki
National Institute of Advanced Industrial Science and Technology

Motion Overview of Human Actions
A method for generating overview videos based on the analysis of motion capture data.

Jackie Assa
Daniel Cohen-Or
Tel Aviv University

I-Cheng Yeh
Tong-Yee Lee
National Cheng Kung University

FUN WITH SINGLE IMAGES

★ ●

15:45–18:00
Room 303/304/305

SESSION CHAIR: Sing Bing Kang

Deep Photo: Model-Based Photograph Enhancement and Viewing
A novel method for browsing, enhancing, and manipulating outdoor photographs by combining them with existing geo-referenced digital terrain and urban models.

Johannes Kopf
Universität Konstanz

Dani Lischinski
The Hebrew University

Daniel Cohen-Or
Tel Aviv University

Boris Neubert
Oliver Deussen
Universität Konstanz

Michael Cohen
Matt Uyttendaele
Microsoft Research

Billy Chen
Microsoft Research

Animating Animal Motion From Still Images
A novel technique to infer and animate animal motions from a still image.

Xuemiao Xu
Liang Wan
Xiaopei Liu
Tien-Tsin Wong
Liansheng Wang
The Chinese University of Hong Kong

Chi-Sing Leung
City University of Hong Kong

Optimised Scale-and-Stretch for Image Resizing
An image-resizing method that computes an optimal scaling transformation for each local region, such that the aspect ratios of the automatically detected prominent features are preserved.

Yu-Shuen Wang
National Cheng Kung University

Chiew-Lan Tai
The Hong Kong University of Science and Technology

Olga Sorkine
New York University

Tong-Yee Lee
National Cheng Kung University

Interactive Normal Reconstruction From a Single Image
An interactive approach for reconstructing surface normals of an object in a single image: interactive shape-from-shading and rotation palettes, which allow easy and intuitive manipulation using relative normals.

Tai-Pang Wu
Jian Sun
Microsoft Research Asia

Chi-Keung Tang
Hong Kong University of Science & Technology

Heung-Yeung Shum
Microsoft Research Asia

Depicting Procedural Caustics in Single Images
A powerful technique to simulate and approximate caustics in images. The algorithm is designed to produce excellent results without the need to painstakingly paint over pixels.

Diego Gutierrez
Jorge Lopez-Moreno
Jorge Fandos
Francisco J. Seron
Maria P. Sanchez
Universidad de Zaragoza

Erik Reinhard
University of Bristol

CHARACTER ANIMATION II

★ ●

08:00–10:15
Room 303/304/305

SESSION CHAIR: Doug James

Facial Performance Synthesis Using Deformation-Driven Polynomial Displacement Maps
A method for acquiring, modelling, compressing, and synthesizing realistic detailed facial deformations using polynomial displacement maps driven by coarse motion capture markers.

Wan-Chun Ma
University of Southern California, National Taiwan University

Andrew Jones
Jen-Yuan Chiang
Tim Hawkins
Sune Frederiksen
Pieter Peers
University of Southern California

Marko Vukovic
Sony Pictures Imageworks

Ming Ouhyoung
National Taiwan University

Paul Debevec
USC Institute for Creative Technologies

Reusable Skinning Templates Using Cage-Based Deformations
A skinning template abstraction that makes it easy to design and transfer skin deformation styles.

Tao Ju
Washington University in St. Louis

Qian-Yi Zhou
University of Southern California

Michiel van de Panne
The University of British Columbia

Daniel Cohen-Or
Tel Aviv University

Ulrich Neumann
University of Southern California

Accelerometer-Based User Interfaces for the Control of a Physically Simulated Character

User study of three Wiimote interfaces for controlling a physically simulated character.

Takaaki Shiratori
Jessica Hodgins
Carnegie Mellon University

Video Puppetry: A Performative Interface for Cutout Animation
A video-based interface for creating animations by puppeteering.

Connelly Barnes
Princeton University

David Jacobs
University of California, Berkeley

Jason Sanders
NVIDIA Corporation

Dan B. Goldman
Adobe Systems Incorporated

Szymon Rusinkiewicz
Adam Finkelstein
Princeton University

Maneesh Agrawala
University of California, Berkeley

Laughing Out Loud: Control for Modelling Anatomically Inspired Laughter Using Audio
A novel technique for generating animation of laughter, including an audio-controlled method that automatically creates an animation from a soundtrack of an individual laughing.

Paul C. DiLorenzo
Victor B. Zordan
Benjamin L. Sanders
University of California, Riverside

LIGHTING, SHADING, AND GPUs

★ ●

08:00–10:15
Theatre

SESSION CHAIR: Nelson Max

Real-Time KD-Tree Construction on Graphics Hardware
The first real-time algorithm for constructing kd-trees on GPUs and its potential in GPU ray tracing, photon mapping, and point-cloud modelling.

Kun Zhou
Zhejiang University

Qiming Hou
Tsinghua University

Rui Wang
Zhejiang University

Baining Guo
Microsoft Research Asia

Automated Reprojection-Based Pixel Shader Optimisation
This paper presents a set of techniques for automating the use of data reprojection as a general strategy for optimising procedural shaders.

Pitchaya Sitthi-amorn
Jason Lawrence
University of Virginia

Lei Yang
Pedro V. Sander
Hong Kong University of Science and Technology

Diego Nehab
Microsoft Research

Jiahe Xi
Hong Kong University of Science and Technology

Fast, Realistic Lighting and Material Design Using Nonlinear Cut Approximation
An algorithm for efficient computation with cut approximations and an application for interactive lighting and material design under complex illumination with arbitrary BRDFs and per-pixel shading.

Ewen Cheslack-Postava
Stanford University

Rui Wang
Oskar Akerlund
University of Massachusetts Amherst

Fabio Pellacini
Dartmouth College

Imperfect Shadow Maps for Efficient Computation of Indirect Illumination
A method for interactive computation of indirect illumination in large and fully dynamic scenes. It is based on approximate visibility encoded in imperfect shadow maps.

Tobias Ritschel
Thorsten Grosch
Max Planck Institut für Informatik

Min H. Kim
University College London

Hans-Peter Seidel
Max Planck Institut für Informatik

Carsten Dachsbacher
Universität Stuttgart

Jan Kautz
University College London

Progressive Photon Mapping
A new formulation of photon mapping for computing global illumination with progressive refinement.

Toshiya Hachisuka
University of California, San Diego

Shinji Ogaki
The University of Nottingham

Henrik Wann Jensen
University of California, San Diego

IMAGE-BASED CAPTURE

★ ●

10:30–12:15
Room 303/304/305

SESSION CHAIR: Chi-Keung Tang

Shield Fields: Modelling and Capturing 3D Occluders
Decoupling 3D occluders from 4D illumination using shield fields, then analysing occluder reconstruction from cast shadows, leading to a single-shot light-field camera for visual hull reconstruction.

Douglas Lanman
Mitsubishi Electric Research Laboratory, Brown University

Ramesh Raskar
MIT Media Lab, Mitsubishi Electric Research Laboratory

Amit Agrawal
Mitsubishi Electric Research Laboratory

Gabriel Taubin
Brown University

Time-Resolved 3D Capture of Non-Stationary Gas Flows
A new method for capturing dynamic gas flows in 3D.

Bradley Atcheson
Ivo Ihrke
Wolfgang Heidrich
The University of British Columbia

Art Tevs
Max Planck Institut für Informatik

Derek Bradley
The University of British Columbia

Marcus Magnor
Braunschweig Technical University

Hans-Peter Seidel
Max Planck Institut für Informatik

A Photometric Approach for Estimating Normals and Tangents
A photometric approach that estimates surface orientation and the directions of principle light scattering based on symmetries in the BRDF.

Michael Holroyd
Jason Lawrence
Greg Humphreys
University of Virginia

Todd Zickler
Harvard University

Extracting Depth and Matte Using a Color-Filtered Aperture
This method automatically extracts a scene-depth map and the alpha matte of a foreground object by capturing a scene through RGB color filters placed in the camera lens aperture.

Yosuke Bando
Toshiba Corporation, The University of Tokyo

Bing-Yu Chen
National Taiwan University

Tomoyuki Nishita
The University of Tokyo

TEXTURE

★ ●

13:45–15:30
Room 303/304/305

SESSION CHAIR: Johannes Kopf

Random-Access Rendering of General Vector Graphics
An efficient representation for random-access anti-aliased vector graphics on the GPU, consisting of a lattice of cell-specialised variable-length descriptions.

Diego Nehab
Hugues Hoppe
Microsoft Research

Texture Amendment: Reducing Texture Distortion in Constrained Parameterisation
This paper describes an approach that combines the benefits of constrained parameterisation and low-distortion parameterisation to reduce texture distortion.

Yu-Wing Tai
Michael S. Brown
National University of Singapore

Chi-Keung Tang
Hong Kong University of Science & Technology

Heung-Yeung Shum
Microsoft Research Asia

IGT: Inverse Geometric Textures
A parameterisation-independent texturing technique that allows preservation of texture details from a high resolution reference model onto lower resolutions, generated with any given simplification method.

Gustavo Patow
Ismael García
Universitat de Girona

A Psychophysically Validated Metric for Bidirectional Texture Data Reduction
Psychophysical experiments show that optimal bidirectional texture function compression parameters are material dependent. This paper proposes a psychophysically validated metric that estimates these parameters and provides a predefined perceptual quality.

Jiří Filip
Michael J. Chantler
Patrick R. Green
Heriot-Watt University

Michal Haindl
Institute of Information Theory and Automation of the ASCR

REFLECTANCE & SUBDIVISION

★ ●

15:45–18:00
Room 303/304/305

SESSION CHAIR: Kun Zhou

Practical Modelling and Acquisition of Layered Facial Reflectance
A practical method for modelling layered facial reflectance from a modest number of photographs recorded from a single viewpoint.

Abhijeet Ghosh
Paul Debevec
Tim Hawkins
Pieter Peers
Sune Frederiksen
USC Institute for Creative Technologies

A Layered, Heterogeneous Reflectance Model for Acquiring and Rendering Human Skin
A layered, heterogeneous, spectral reflectance model for acquiring and rendering the appearance of human skin. The model measures appearance via a novel acquisition method that uses multi-spectral photographs.

Craig Donner
Columbia University

Tim Weyrich
University College London

Eugene d'Eon
NVIDIA Corporation

Ravi Ramamoorthi
Columbia University

Szymon Rusinkiewicz
Princeton University

Phong Tessellation
The Phong Tessellation is a geometric version of the Phong normal interpolation to improve the visual continuity of meshes with a local curved displacement, adapted to current and next-generation GPUs.

Tamy Boubekeur
Marc Alexa
Technische Universität Berlin

Subdivision Shading
Rendering subdivision surfaces using normals generated by subdivision.

Marc Alexa
Tamy Boubekeur
Technische Universität Berlin

Real-Time Reyes-Style Adaptive Surface Subdivision
An efficient and real-time Reyes-like surface subdivision (split/dice) using modern GPGPU techniques that subdivides complex models to subpixel accuracy in a few milliseconds.

Anjul P. Patney
John Owens
University of California, Davis

MESH PROCESSING

★ ●

08:00–10:15
Room 303/304/305

SESSION CHAIR: Olga Sorkine

Efficient Traversal of Mesh Edges Using Adjacency Primitives
Efficient edge traversal allows fast shadow volumes and silhouette computations on the GPU. Minimising the number of adjacency primitives leads to discrete optimizations on the mesh dual graph.

Pedro V. Sander
Hong Kong University of Science & Technology

Diego Nehab
Microsoft Research

Eden Chlamtac
Princeton University

Hugues Hoppe
Microsoft Research

Randomised Cuts for 3D Mesh Analysis
This paper investigates a new shape analysis method based on randomised cuts of 3D surface meshes.

Aleksey Golovinskiy
Thomas Funkhouser
Princeton University

Deduction of Interpolating Subdivision Schemes From Approximating Subdivision Schemes
A method for directly deducing new interpolating subdivision schemes from the corresponding approximations. The purpose is to solve some limitations in the exiting interpolating subdivision.

Shujin Lin
Xiaonan Luo
Fang You
Zheng Li
Sun Yat-sen University

Spectral Quadrangulation With Orientation and Alignment Control
A new algorithm for quad mesh generation based on a spectral surface quadrangulation approach that provides flexible explicit control of the shape, size, orientation, and feature alignment of the quad faces.

Jin Huang
Muyang Zhang
Jin Ma
Xinguo Liu
Zhejiang University

Leif Kobbelt
RWTH Aachen

Hujun Bao
Zhejiang University

Quadrilateral Mesh Simplification
Mesh simplification is an important geometric-processing algorithm, serving as a building block for many higher-level methods. This paper introduces a quadrilateral mesh-simplification technique, constructing quality LOD mesh hierarchies.

Joel Daniels
Claudio T. Silva
University of Utah

Jason Shepherd
Sandia National Laboratories

Elaine Cohen
University of Utah

COLOURISATION & UPSAMPLING

★ ●

08:00–10:15
Theatre

SESSION CHAIR: Marc Pollefeys

A Virtual Restoration Stage for Real-World Objects
A system to virtually restore damaged or historically significant objects without needing to physically change the object in any way.

Daniel G. Aliaga
Alvin J. Law
Yu-Hong Yeung
Purdue University

Superimposing Dynamic Range
A cost-efficient way of extending contrast, perceived tonal resolution, and color space of static hardcopy images, beyond the capabilities of hardcopies or low-dynamic-range displays alone.

Oliver Bimber
Bauhaus Universität Weimar

Daisuke Iwai
Osaka University

VirtualStudio2Go: Digital Video Composition for Real Environments
Synchronised film cameras, video projectors, and high-speed LED lighting, together with radiometric image correction, enable professional digital video composition effects in real environments without the constraints of virtual studios.

Anselm Grundhöfer
Oliver Bimber
Bauhaus Universität Weimar

Intrinsic Colourisation
An example-based colourisation technique robust to illumination differences between grayscale target and colour-reference images.

Xiaopei Liu
Liang Wan
Yingge Qu
Tien-Tsin Wong
The Chinese University of Hong Kong

Stephen Lin
Microsoft Research Asia

Chi-Sing Leung
City University of Hong Kong

Pheng-Ann Heng
The Chinese University of Hong Kong

Fast Image/Video Upsampling
A simple yet effective upsampling method for automatically enhancing image/video resolution, while naturally preserving the structural information and temporal coherence.

Qi Shan
Zhaorong Li
Jiaya Jia
The Chinese University of Hong Kong

Chi-Keung Tang
Hong Kong University of Science & Technology

NON-PHOTOREALISTIC RENDERING

★ ●

10:30–12:15
Room 303/304/305

SESSION CHAIR: Ken Anjyo

Adaptive Cutaways for Comprehensible Rendering of Polygonal Scenes
Generating cutaway renderings of polygonal models at interactive frame rates, using illustrative and non-photorealistic rendering cues to expose objects of interest in the context of nearby and enclosing objects

Michael Burns
Adam Finkelstein
Princeton University

Richness-Preserving Manga Screening
A novel method for screening manga-style drawings from photographs, by preserving the tone similarity, texture similarity, and chromaticity distinguishability.

Yingge Qu
Wai-Man Pang
Tien-Tsin Wong
Pheng-Ann Heng
The Chinese University of Hong Kong

Line-Art Illustration of Dynamic and Specular Surfaces
A real-time rendering system that can illustrate dynamic 3D models in line-art styles. The system can also illustrate reflections and refractions on specular surfaces.

Yongjin Kim
Pohang University of Science & Technology

Jingyi Yu
Xuan Yu
University of Delaware

Seungyong Lee
Pohang University of Science & Technology

Demarcating Curves for Shape Illustration
This paper defines a new class of view-independent curves (demarcating curves) and proves relations between them and other well-known curves. Their application to archaeological artifact illustration is demonstrated.

Michael Kolomenkin
Technion–Israel Institute of Technology

Ilan Shimshoni
University of Haifa

Ayellet Tal
Technion–Israel Institute of Technology

URBAN MODELLING

★ ●

13:45–15:30
Room 303/304/305

SESSION CHAIR: Tong Xin

Continuous Model Synthesis
A novel method for procedurally modelling large complex shapes. The approach is general-purpose and accepts as input any 3D polyhedral model provided by a user.

Paul Merrell
Dinesh Manocha
University of North Carolina at Chapel Hill

Interactive 3D Architectural Modelling From Unordered Photo Collections
An interactive image-based modelling system for architectural scenes that leverages recent advances in automatic computer vision techniques and sketch-based 3D modelling and handles large photo collections.

Sudipta N. Sinha
University of North Carolina at Chapel Hill

Drew Steedly
Microsoft Live Labs

Richard Szeliski
Microsoft Research

Maneesh Agrawala
University of California, Berkeley

Marc Pollefeys
ETH Zürich, University of North Carolina at Chapel Hill

Interactive Example-Based Urban Layout Synthesis
An interactive system for synthesising urban layouts by example. New urban layouts are inferred from the road network, parcel data, and aerial images of given cities.

Daniel G. Aliaga
Carlos A. Vanegas
Bedřich Beneš
Purdue University

Image-Based Façade Modelling
A semi-automatic image-based approach to building façade modelling from automatically recovered cameras and 3D points of a sequence of images.

Jianxiong Xiao
Tian Fang
Hong Kong University of Science & Technology

Ping Tan
National University of Singapore

Peng Zhao
Hong Kong University of Science & Technology

Eyal Ofek
Microsoft Corporation

Long Quan
Hong Kong University of Science & Technology

PHYSICALLY BASED ANIMATION

★ ●

15:45–18:00
Room 303/304/305

SESSION CHAIR: Hyeong-Seok Ko

Magnets in Motion
A method for magnetic interaction in rigid-body simulation, allowing interactive simulation of dozens of magnets. The approach is physically sound and has excellent accuracy and preservation properties.

Bernhard Thomaszewski
Andreas Gumann
Simon Pabst
Wolfgang Straßer
Universität Tübingen

Real-Time Control of Physically Based Simulations Using Gentle Forces
Real-time control with gentle forces cooperates with natural dynamics to generate simulations that are fast, compliant, and directable.

Jernej Barbić
Jovan Popović
Massachusetts Institute of Technology

Staggered Projections for Frictional Contact in Multibody Systems
A discrete, velocity-level formulation of frictional-contact dynamics that enables a novel and accurate algorithm for frictional-contact resolution based on a simple staggered sequence of projections.

Danny Kaufman
Shinjiro Sueda
The University of British Columbia

Doug L. James
Cornell University

Dinesh K. Pai
The University of British Columbia

Optimizing Cubature for Efficient Integration of Subspace Deformations
Cubature optimization enables fast evaluation of subspace internal forces associated with subspace deformations of models with complex geometry, nonlinear deformations, and nonlinear hyperelastic materials.

Steven An
Theodore Kim
Doug L. James
Cornell University

Fast Animation of Turbulence Using Energy Transport and Procedural Synthesis
A novel technique for animation of turbulent fluids by coupling a procedural turbulence model with a numerical fluid solver to introduce subgrid-scale flow detail.

Rahul Narain
Jason Sewall
University of North Carolina at Chapel Hill

Mark Carlson
DreamWorks Animation

Ming C. Lin
University of North Carolina at Chapel Hill

★ ●

Days & Hours

Thursday, 11 December	08:30–17:30
Friday, 12 December	08:30–17:30
Saturday, 13 December	08:30–17:30

Educators Programme

Envisioned as an international gathering of industry professionals and academics, the Educators Programme presents perspectives that appeal to a wide spectrum of interests. The goal is to share educational strategies adopted in both industry and academia to make the learning process more satisfying, productive, and meaningful.

Educators Programme Committee

CHAIR

Mark Chavez
Nanyang Technological University

COMMITTEE

Anna Ursyn
University of Northern Colorado

Colleen Case
Schoolcraft College

Gitta Domik
Universität Paderborn

Janese Swanson
The Art Apprentice

Patricia Beckmann
Walt Disney Animation Studios

JURORS

Shih-Ming Chang
Yuan Ze University

Yuke Sasmitra
Nanyang Academy of Fine Arts

Pan Zhigeng
Zhejiang University

METHODOLOGIES IN LEARNING

★ ●

08:30–10:15
Educators Papers
Room 309

SESSION CHAIR: Mark Chavez

Computer Graphics in Context: An Approach to a First Course in Computer Graphics
This paper discusses the concept of teaching a first course in computer graphics that includes a context–a field outside computer graphics in which graphics is used–in order to engage students and broaden their understanding of the graphics principles. The paper presents a specific example, a course in computer science, where creating an engagement with a wider topic is known to improve student learning.

Steve Cunningham
Brown Cunningham Associates

Using Augmented Reality to Promote Understanding of Materials Science to School Children
Using tables of data to understand and compare their properties is a rather boring and unintuitive way to learn about materials. Children learn much more quickly and intuitively if they can touch the materials they are learning about and link them directly to their properties and applications. But such an approach can be very demanding on teachers' knowledge and attention, especially in large classes.

The challenge is to engage pupils by exploiting information and communication technology to aid the learning process. If this approach can build on their interest in animations and exciting graphics, developed through their exposure to television and computer games, then so much the better. Kids rarely read the instructions when playing computer games, since they adopt intuitive protocols.

Augmented reality (AR) is a relatively mature technology, but so far it remains largely undiscovered by schools as a means of enhancing traditional lesson delivery. The advantage of AR is its ability to overlay information on real physical objects as viewed on a LCD projector or interactive white board. This paper describes a set of educational AR software for helping children to familiarise themselves with simple physics, chemistry, and materials principles.

AR technology brings photographic and computer-generated images into real environments, facilitating real-time 3D interactions connected to physically available objects. The tools developed in this project comprise four major kinds of applications, each designed to help pupils learn about materials and their applications. The linkages between the hands-on materials and their properties and applications are explored through a series of puzzles, games, and tasks, with the AR providing intuitive guidance. For example, pupils can try to identify the materials required to build a jet engine or play a "top trumps" game with the computer to choose attributes for their materials that could outperform the materials chosen by the computer. The AR system also acts as a virtual microscope to reveal the microstructure of a given material as it is placed under the web-cam. For younger pupils, the school can use a simpler AR tool to learn about the categorisation of materials (metal, ceramic, polymer, and natural). The AR recognition software rewards correct allocations and helps pupils to identify mistakes.

This paper outlines development and deployment of AR and discusses evaluations that will be carried out with teachers and pupils during exhibitions at the Farnborough Air Show, the Manchester Science Festival, and schools visits. The goal is to provide a valuable starting point for other AR developments in educational settings.

Kevin Tan
Emma Lewis
University of Manchester
Nick Avis
Cardiff University

Philip Withers
University of Manchester

Simulating Educational Physical Experiments in Augmented Reality
This paper presents PhysicsPlayground, an augmented reality application that utilizes a recent physics engine developed for the PC gaming market to simulate physical experiments in mechanics in real time. Students are able to actively build their own experiments and study them in a three-dimensional virtual world. Several tools are provided to analyze forces, mass, paths, and other properties of objects before, during, and after experiments. Innovative teaching content exploits the strengths of this immersive virtual environment. PhysicsPlayground is as an example of how current technologies can be combined to deliver new experiences in physics education.

Hannes Kaufmann
Bernd Meyer
Technische Universität Wien

EDUCATORS PROGRAMME RAMP-IN AND KEYNOTE ADDRESS

★ ●

13:45–15:30
Room 309

SESSION CHAIR: Mark Chavez

Ramp-In: Welcome and Overview of Programme by Programme Chair Mark Chavez

The New Perspective of Consilience of the Arts and Technology in the Era of Ubiquitous Computing

EDUCATORS KEYNOTE ADDRESS

Ubiquitous Arts & Technology (U-AT)
Consilience Education is a new term coined by the Korea National University of Arts to refer to consilience of ubiquitous computer technology and diverse arts genres in a narrow sense, and consilience of the arts, humanities, and technology in a broader sense. In this sense, consilience refers to a non-reductionist unity of knowledge, unlike the reductionist consilience in the humanist biology of Edmund Wilson.

The term, coined by William Whewell in the early 19th century, is a revival of the Latin word consalier, which means “varied branches uniting and jumping together to form a unified trunk.” According to the science of complex systems, the process of mixing different elements, and their interactions, are critical requirements for creative experience and knowledge creation.

The key objective of U-AT Consilience Education is to establish a creative education system to produce quality content in multi-source-multi-use mode by institutionalizing the cooperative ties between industry and the university for joint research projects, creative endeavors, and education. The overall purpose is to promote continuous and systematic communications and consilience of six artistic genres: music, drama, film-TV-multimedia, visual arts, dance, and Korean traditional arts.

Park Se-Hyung
Korea National University of Arts

METHODOLOGIES IN LEARNING

★ ●

15:45–17:30
Educators Papers
Room 309

SESSION CHAIR: Martin Constable

Shift to The Third Space - isAT 2008
The arts and technology are no longer strangers. They are forging a closer partnership, as the arts reveal what could previously exist only in our imaginations by utilizing ubiquitous technology, and technology, in turn, leaps over the modern era by adding a wing of artistic sensibility to science.

In light of this shift, isAT 2007 (International Symposium for Arts and Technology 2007) was held last year to explore the "Lightning Effects" from the encounter between the arts and technology. Under the theme of Shift to the Third Space, the upcoming event, isAT 2008, will seek the meaning of the union of the arts and technology and explore how ubiquitous computing technology shifts our lives into other dimensions.

Shim Kwang-Hyun
Korea National University of Arts

The Animation Solution Kit
The main benefit of independent creation is not cost reduction but quality. In the process of indie-creation, concept art can be retained until final step because it's mainly created by a small, efficient team. By expanding the traditional concept of "animation," DMMG Lab makes a "prototype model" for animation based on NPR and, by building a library of models, materials, motion, and effect sources, facilitates a "stand-alone on network," which enables one person to manage the entire animation process.

Lee Jungmin
Korea National University of Arts

Making Intelligent Sounds
An intelligent sound is a sound that can think. It can create, modify, evolve, and even kill itself according to its environment. This paper shows two approaches to this concept. One is creative and experimental (the author's compositions), and the other is practical and educational (the Intelligent Sound Lab at The Korea National University of Arts).

The Intelligent Sound Lab develops basic technologies and solutions for synthesis of realistic sound effects that can be automatically synthesized according to the recorded or analyzed meta-data of various media content. The main objective of this lab is to develop and build an "intelligent sound library" of sound-effect algorithms that can create and vary themselves according to their content.

Chang, Jaeho
Korea National University of Arts

GAME EDUCATION

★ ●

08:30–10:15
Educators Papers
Room 309

SESSION CHAIR: Gao Wei Hua

Creating a Multi-Disciplinary Gaming Curriculum: Avoiding Mistakes, Missteps, and Growing Pains

While the volume of game-development curricula has grown dramatically over the past five years, there is still relatively little information on the proliferation of these programmes. At Drexel University, game development has grown from a few unrelated, area-specific courses to become a truly multi-disciplinary, multi-course sequence that unifies the foundation skills of several departments and colleges across the university. Yet there have been numerous challenges and changes during the four-year evolution of this sequence. This paper documents the growth of the programme, the problems it encountered, and the solutions developed, in the hope that it can serve as a road map for other institutions.

At Drexel, game development does not "live" in one department, so it mirrors the true nature of game development in commercial settings. Game development is offered in a coordinated, cross-listed series of courses in both the computer science (CS) and digital media (DIGM) majors, and production courses are open to other majors as well. Computer science courses teach foundation software-development skills and offer software design courses for prototyping game concepts. Drexel's digital media major is one of the oldest such programmes in the United States. It instructs students on the foundation skills of design, art, programming, modelling, animation, audio and video production, and the use of industry tools such as Maya and 3ds Max. The gaming courses and projects bring these two majors together, with the additional participation of students and faculty from other majors including music, music industry, screenwriting and playwriting, engineering, and business.

Many problems were encountered during the programme's growth from an original two-course sequence to the current nine-course offering including: cultural and communication differences between the different majors; scheduling differences across programmes, departments, and colleges; teaching and staffing issues; course sequencing issues; introduction of soft-skill techniques; project management issues; student and staff turnover; rapidly changing technology platforms; lack of adequate texts; software and hardware access issues; and even educating administrators and parents as to what game development entails.

The gaming sequence is designed to reflect the nature of the industry and industry demands and practices. For example, the programme makes heavy use of the iterative development cycle and SCRUM methodology. However, introduction of these techniques provides unique challenges in classroom settings, where students have always been able to "get by" with less-formal structures, or where grades are based on a final submission.

The cross-discipline nature of the course offerings presents logistical challenges for reaching and informing interested students and researchers, and has led to formation of the Drexel RePlay Lab web site.

The 2007-2008 academic year was the first in which the complete complement of courses was fully offered. Despite this, the student work produced from even an abridged offering has been very impressive.

Paul Diefenbach
Drexel University

Sharing the Magic Circle With Spatially Inclusive Games

A discussion of innovative (capstone) projection environments at an IT and electrical engineering school. The overarching brief was to develop both more expansive and immersive viewing and playing environments. Game courses were used as a springboard to extend the students' creative and critical design thinking in relation to wider interaction-design issues. Imaginative combinations of game engines and peripherals were also used as initial prompters to encourage students to go beyond current game-theory definitions, explore how to increase the player's sense of embodiment, and transmit the player's gameplay experience to a wider audience. The resulting prototypes are being incorporated into future versions of CAVE UT to help educators develop more engaging and immersive interactive environments. Hopefully, the next version of CAVE UT will also allow players and audiences to share the so-called "magic circle."

Erik Champion
The University of New South Wales

Jeffrey Jacobson
PublicVR

GAME EDUCATION (CONTINUED)

★ ●

08:30–10:15
Educators Papers
Room 309

SESSION CHAIR: Gao Wei Hua

Gaming: Back to the Basics
By recreating basic games, this presentation returns to the basics of computer games and experiments with game play, game rules, and players' psychology. It surveys 2D and 3D games designed as experimental prototypes of "treasure hunting," "plateau," and generic "Space Invaders" and "Pac Man" games, and it shows how player experience can be affected by slight changes in game mechanics.

The exploration of game play takes place inside 2D and 3D versions of basic games created by students and professionals during workshops with limited-time assignments. Creators of these games reshape behaviours and relationships governing levels, modes, rules, choices, classes of objects, characters, and interactive elements. They experiment with game play and rules, following the psychology of the players and demonstrating the need to be not too simple and not too complex.

Topics covered in this presentation include how small variations of the elements of game design can affect the game-playing experience, how the architecture of a game can repeat from one game to the other and in different times and contexts, how the player is placed in the center of the gaming experience, and how choices are presented to the player.

The presentation also shows how to create an interactive interface that allows real-time testing of dynamic transformations of game mechanics and rules of play. The audience uses Wiimotes to participate in demos that focus on side-by-side evaluation of basic 2D games and their recreation as 3D games. It also surveys examples of authoring tools, interactive animations, and behavioural engines available for education (Torque, Virtools, XNA).

Jean-Marc Gauthier
Tisch School of the Arts Asia,
New York University

THE MINDSPACE OF LEARNING

★ ●

10:30–12:15
Educators Papers
Room 309

SESSION CHAIR: Ayumi Miyai

Practice Project Management in Web Site Design: An Experiential Learning Simulation
The current literature suggests that experiential learning is a necessary component of formal instruction in higher education. But research on experiential learning in web site design development and management is minimal. The purpose of this project is to detail research on how to blend experiential learning principles with project management into an actual case of web site design practice for the new age of electronic learning.

Art and design faculties are no strangers to experiential learning. One cannot learn the complexities of the design discipline without extensive design studio projects. Where experiential learning is well integrated, students demonstrate a greater understanding of the complexity of real-world problems. By combining theory with practice, this project helps the academic community understand the relationships among education, work, and technology. It also provides rich dialogues about students' experiential learning, which helps them build a foundation for professional life in the real world. In this approach, the "process" is as important as the "product." This study hopes to stimulate further work in this area.

Mei-Fen Chen
Robert Morris College

Guitar Man
This paper proposes a game system that presents a cooperative musical performance system using guitar and bass guitar. Because the bass guitar does not necessarily support fast playing, it is suited to the subject of this study. However, it is necessary to accelerate the speed of a pitch-detection algorithm in order to extend it to a cooperative musical performance system that includes other non-string instruments. A constant time interval should be maintained due to the fact that it is difficult to apply a pitch-detection process for specific tones when the recognition time is reduced.

This study considers how new musical possibilities can be achieved through online networks by overcoming the stereotypes in off-line musical activities, such as music-instrument lessons or traditional cooperative performances. It is based on the assumption that the future computer game industry will not be developed as a simple virtual reality but an actual systems like the cooperative musical performance system proposed in this paper.

Aram So
Sogang University

METHODOLOGIES IN LEARNING

★ ●

15:45–17:30
Educators Panels
Room 309

SESSION CHAIR: Russell Pensyl

Bridging the Gap Between Education and Professional Production
While there is a global interest in learning animation and special effects, the quality of academic programmes and training ranges from excellent to mediocre. It takes time and a great deal of skill, knowledge, and talent to develop global-quality education that meets the needs of today's production companies, and the bar is raised higher every year.

In too many countries, get-rich-quick institutions advertise software training that at best provides comprehensive coverage of tool sets and techniques, and at the worst, certifies students who are completely unprepared for the careers they seek and with little or no knowledge of anything but the basic operation of a popular software programme.

Some countries have 500 or even 1,000 animation programmes (China for example) yet few have instructors who have worked and excelled in the industry. In addition, many instructors have received little or no training in effective and meaningful instructional techniques. The inevitable result: the quality of education is often very low, and graduates are completely unprepared for the career paths they want to follow.

As there is no professional certification for animators or visual effects professionals, it's time to move toward a universally acceptable framework for specifying and evaluating the skills, portfolios, and show reels that are the fundamental entry point to prospective employment. Also, it's essential to blend this framework into every employee's upgrade path and lifelong learning plans in this rapidly evoloving field.

The panelists have been dealing with these problems for many years, as educators, trainers, and recruiters. Their desire is see dramatic improvement in education and training through development of clearly defined professional requirements. Such a framework will make it easier for institutions to design relevant and high-quality education that meets the needs of today's and tomorrow's globally distributed production companies.

Robin King
Imagina Corporation

Prashant Buyyala
Rhythm & Hues Studios

Shelley Page
DreamWorks Animation

Michael Sehgal
Autodesk, Inc

Comparison of Animation Storyboard Education in China and the United States
More and more Chinese universities and schools have started teaching animation storyboard courses, but there is still a shortage of original work produced by the Chinese animation industry. This paper discusses the development of Chinese animation storyboard education and compares it to similar programmes in the US. The result is new insight into how to most effectively teach animation storyboarding.

The inquiry focuses, in part, on development of story and visual content, and how storyboard artists develop concepts. Animation storyboard programmes are compared through an examination of their curricula, faculty, 2D and 3D computer animation works, lab facilities, environmental and aesthetic aspects, and contrasts between the two cultures. Practical approaches to teaching are also discussed. The goal of this presentation is to provide an international perspective on animation storyboard education and a summary of the current state of Chinese animation.

Hui Zhu
Xiaobo Lu
Tsinghua University

Frank Suarez
Bunko Studios, Inc.

METHODOLOGIES IN TEACHING

★ ●

08:30–10:15
Educators Papers
Room 309

SESSION CHAIR: Chen Meifen

Deconstructing an Old Master Painting Using Photoshop's Advanced Toolset
An old master painting is a highly "made" thing, and every aspect of its appearance was subject to careful consideration and evaluation before its manufacture. These aspects can be very hard to grasp, but with Photoshop's advanced toolset, they can be visualised and made more accessible for the student of art history. This paper details interesting applications of the Adjustments menu, the Blend modes, and the Blend If values.

Martin Constable
Nanyang Technological University

Using Animation and Interactive Virtual Technology to Create Interpretive Materials for Museum Learning and Promotion
Museums around the world have incorporated computer graphics, virtual reality, 2D and 3D animation, and interactive technology in gallery exhibits, educational games, films, and online presentations for many years. To move beyond the traditional ways of using technology to create interpretive materials for teaching and learning, and to communicate with its audiences, The National Palace Museum (NPM) in Taiwan embarked on two major digital projects: a 3D Virtual Exhibition System: Experience the Imperial Artifacts and "Adventures in the NPM," a 13-minute 3D animation. This paper provides an overview of these projects.

In early 2003, NPM began to develop Experience the Imperial Artifacts. Through this system, users can virtually touch and interact with the famous Jadeite Cabbage, Ivory Ball, Carved Olive-Stone Boat, and Mao-Kung Ting from the museum collection. For the first time, users could experience the highest privileges of the emperor. The paper provides detailed information on development, selection, creation, and implementation of various 3D technologies: the stereoscopic construction approach to visualising details, 2D photo stitching techniques for reconstructing a jadeite surface, a 3D laser-scanning method for geometric modelling, etc. It also reviews the tasks and challenges of the project and presents a documentary film about the development process of these high-tech systems.

In 2005, to bridge the gap between today's audiences and "ancient" artifacts, NPM collaborated with Digimax Corporation to produce a 3D animated film entitled "Adventures in the NPM." This film personifies some of the NPM's key collection objects and their adventures in the museum at night. Its lovely characters and captivating story are designed to bring viewers to a new level of appreciation for those ancient artifacts. The production team invited Gérard Pirès ("Knights in the Sky"), Tom Sito ("Osmosis Jones"), and Teddy Yang ("Shark Tale") to contribute their expertise to the production. The film premiered on 13 April 2007 to many positive reviews. Most recently, it was honored at the Tokyo International Animation Fair 2008 as the Animation of the Year. This paper shares some of the behind-the-scene stories of the production and its creative marketing and promotion.

James Quo-Ping Lin
National Palace Museum

Herminia Din
University of Alaska Anchorage

Chinese Whispers
Chinese Whispers refers to the concept of mediating between remote studios with new forms of hybrid designing and real-time online collaboration. A sequence of experiments explored the concepts of linkage and slippage that occur at the boundaries of converging technologies as a means of generating innovative and unexpected design outcomes (real and virtual, tangible and intangible). The project is framed in a contemporary context with background research into current concepts and theories centered on learning ecology and user-generated design into future trends and state-of-the-art technologies.

Chinese Whispers involved linking hardware and software that are not immediately compatible in a remote networked environment to facilitate an educational design process in both remote and real environments. Through this process, students engaged in 3D scanning, downloading, visualising, analysing, remote simultaneous modelling in stereo, and deciding when to hit "3D print" at any given stage to invent a new design methodology.

Simon Fraser
Tim Miller
Morgan Barnard
Kris Henning
Victoria University of Wellington
School of Design

Mark Billinghurst
HIT Lab NZ

PEDAGOGY IN ACTION

★ ●

10:30–12:15
Educators Papers
Room 309

SESSION CHAIR: Lucy Petrovic

Incorporating Animation Technologies Into Tools for Colonial American Education

This paper describes integration of animation and visual effects technologies into development of tools geared for colonial American education. Projects discussed include incorporation of crowd simulation software and full-body motion capture to recreate Revolutionary War battles, laser-scan acquisition of excavated archaeological artifacts, and recreation of historic structures with modelling and animation software. These technologies reduce the margin of error in representation, accentuate the level of realism for the end user, and create a more engaging educational presentation for schoolchildren.

Christopher Redmann
Drexel University

Wireless Sensor Network to Support a Multiple-Student Group Learning Game With One PC in the Classroom

Unlike the One Laptop Per Child concept promoted by the MIT Media Laboratory, this study utilizes a wireless sensor network to support a multiple-student group-learning game with one PC in classroom. In the traditional computerised classroom, each student is equipped with one desktop (or laptop) computer for learning. This approach (one kid one desktop) has some disadvantages. For example, the cost of establishing the classroom is high, and students are confined to their seats during learning activities. It is adult-oriented, not kid-oriented.

This alternative approach, based on a wireless sensor network, allows students to interact with a computer via body motions, such as gestures, which is a much more natural way to use technology in the classroom. A set of ribbons with wireless gesture-detection sensors connects to a server. The ribbons are worn by the students, and the entire classroom's gestures are captured and sent to the server.

With this technology, the classroom can be reconfigured from one kid one desktop to many kids one desktop. In one application, students are asked to create, share, and review stories using the gesture-detection ribbons in the classroom.

Yi-Shiang Lin
Ben Chang
National Central University

PROFESSIONAL/ACADEMIC

★ ●

15:45–17:30
Educators Papers
Room 309

SESSION CHAIR: Pan Zhigeng

Teaching 3D Animation: The Balance Between Creative and Technical Skills

We are getting much better at teaching the technical skills that our students need to enter the visual-effects and 3D-animation industries. But somtimes these skills take precedence in our teaching, and we inadvertently give less emphasis to the more elusive creative skills that affect promotion into positions such as producers, visual effects supervisors, art directors, etc.

Superior quality and and excellent story can make a big difference in the critical first eight seconds of a demo reel, when professionals decide whether to keep watching or hit the eject button. This paper covers not only the creative fundamentals, but also how to apply them consistently in our teaching, which in turn contributes to our students' success after they graduate.

Craig Caldwell
Griffith University

Computer Games Degrees in the UK: A Review of Current Practice

This paper examines the development, content, and outputs of computer games development (CGD) courses in the United Kingdom. It provides a background of CGD courses, followed by a case study of how a Bachelors of Arts course was developed and implemented at Swansea Metropolitan University. And it analyses and discusses the characteristics of student applications (such as background qualifications, achievement levels, and skill-sets), the nature of student projects (including their themes, creativity, and quality), course structure and composition, and staff profiles. The results offer a unique and valuable insight into development of CGD courses, especially in view of their increasing importance in fostering new creative talent for games and games-related industries.

Barry Ip
Martin Capey
Swansea Metropolitan University

From Motion Capture to Interactive Animation

Jean-Marc Gauthier, director of the new animation and digital arts MFA program at Tisch School of the Arts Asia in Singapore, summarises the program's curriculum: traditional animation, interactive animation, gaming, and motion studies applied to design.

His talk includes an overview of Life Motion Analysis: Ways to Visualise Motion From Real Life, a motion capture class designed for collaborative work among actors, dancers, storytellers, filmmakers, animators, and others.

Jean-Marc Gauthier
Tisch School of the Arts Asia, New York University

★ ● Sketches ★ ● ❍ Sketches Fast Forward Session

Days & Hours

Thursday, 11 December	08:30–17:15
Friday, 12 December	08:30–17:15
Saturday, 13 December	08:30–17:15

Sketches

A dynamic forum for thought-provoking, speculative ideas, novel applications, what-if concepts, and behind-the-scenes production details. Following each sketch presentation, authors discuss future implications of their work and answer audience questions.

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Victoria Interrante
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Makoto Okabe

Nuria Pelechano

Bin Sheng

Hideki Todo

Pere-Pau Vazquez

Tatsuo Yotsukura

SKETCHES FAST FORWARD

★ ● ❍

18:00–20:00
Theatre

ACM SIGGRAPH's first Technical Papers & Sketches Fast Forward Sessions back-to-back. Get a preview of the latest research in computer graphics and interactive techniques and select the Technical Papers and Sketches that you need to attend later in the week.

GPU-BASED METHODS

★ ●

08:30–10:00
Room 302

SESSION CHAIR: Edward Angel

GPU Crowd Simulation
This first interactive, GPU-accelerated massive crowd simulation (>65,000 agents) combines parallel implementations of a course global-path planning technique with a fine-grained local avoidance model.

Jeremy Shopf
Christopher Oat
Joshua Barczak
Advanced Micro Devices, Inc.

GPU-Based Scene Management for Rendering Large Crowds
A system for rendering crowds of characters with full shadows, in arbitrary environments, with stable performance and excellent visual quality, managing all aspects directly on the GPU.

Joshua Barczak
Natalya Tatarchuk
Christopher Oat
Advanced Micro Devices, Inc.

GPU Tessellation for Detailed, Animated Crowds
A method for rendering detailed crowds of characters using tessellation, instancing, and LOD management, along with a technique to reduce artifacts along uv seams when using displacement mapping.

Natalya Tatarchuk
Joshua Barczak
Budirijanto Purnomo
Advanced Micro Devices, Inc.

A GPU-Based Approach for Real-Time Haptic Rendering of 3D Fluids
An innovative GPU-based approach that enables real-time haptic rendering of high-resolution 3D Navier-Stokes fluids.

Meng Yang
University of Pennsylvania

Jingwan Lu
Hong Kong University of Science and Technology

Zehua Zhou
Alla Safonova
Katherine Kuchenbecker
University of Pennsylvania

RECENT PRODUCTION TECHNIQUES AT LUCASFILM ANIMATION SINGAPORE

★ ●

13:45–15:15
Theatre

SESSION CHAIR: Ken Anjyo

"Star Wars: The Clone Wars" TV Series: Making the Impossible Happen
In creating episodes of "Star Wars: The Clone Wars,"s flexibility is the key. It requires an adaptable pipeline and lighting tools that enable completion of several tasks in one render calculation.

Ryan T. Smith
Lucasfilm Animation Singapore

The Invisible Art Behind "Ironman"
What is real and what is not? In "Ironman," suspension of disbelief due to the larger-than-life action and realistic backgrounds was the ultimate goal for matte painters.

Danny Janevski
Lucasfilm Animation Singapore

Keeping It Real: Classical Art Principles in Today's VFX Features
The tools have changed, but it is still the artist's process, rooted in the knowledge of basic artistic principles, that make visual effects convincing and realistic.

Kalene Dunsmoor
Lucasfilm Animation Singapore

Lighting Clone Wars: A New Planet Every Week
How to bring the vast Star Wars universe to TV without making it look small? The challenge of introducing new characters and locations in every episode, on a TV production schedule.

Ben Huber
Lucasfilm Animation Singapore

Clone Wars Animation in Lucasfilm Animation Singapore
What does it take to animate "Star Wars: The Clone Wars?" From stills and shots, learn how animators bring the Star Wars universe and its colorful characters to life.

Ullas Narayana
Lucasfilm Animation Singapore

INTERACTIVE TECHNIQUES

★ ●

15:45–17:15
Room 302

SESSION CHAIR: Matt Adcock

Balance Ball Interface
Only the user sits on the balance ball, and this system captures the user's rough motion and behaviour.

Masasuke Yasumoto
Tokyo University of the Arts

Fu-Fuu: An Interactive Game Using Breath Control
A novel game interface that uses a player's position and breath captured via a camera and a microphone to manipulate a virtual paper airplane.

Taichi Nishiyori
Soei Sato
Toki Takeda
Narumi Tashiro
Ryoichi Ando
Maki Terai
Taketoshi Ushiama
Reiji Tsuruno
Kyushu University

Tracking the Position of a Mobile Device on Interactive Screens With RFID
A novel method for identifying and tracking the position of mobile devices on interactive screens and a prototype system of the proposed method.

Sang-Jun Han
Kuk-Hyun Han
Pil Seung Yang
Bo Hyun Kyung
Samsung Electronics

Bear's Beer and Smart Platter– Handheld Interactive Haptic Display
A new tray-shaped force-feedback display with an interactive robot and a vision-based positioning system. This method enables haptic interaction in handheld devices.

Tomohiro Amemiya
NTT Communication Science Laboratories

Hideyuki Ando
Taro Maeda
Osaka University

ARTS & ROBOTS

★ ●

08:30–10:00
Room 302

SESSION CHAIR: Daniel Maskit

Shadow Play
A method for computer-aided shadow play, where shadows cast on a screen are saved and projected back onto the screen. Users can create an environment with butterflies that are controlled by user shadows.

Cem Sina Cetin
Sabanci Üniversitesi

Automatic Composition for Contemporary Dance Sequences
An automatic composing system for contemporary dance using 3D motion data. Instead of creating completed connections, this method creates conceptual sequences for dance lessons.

Asako Soga
Ryukoku University

Bin Umino
Toyo University

Motoko Hirayama
University of Tsukuba

Nervixxx: Introducing Biosignals to Live Video Performance
A video performance system based on EEG (the most informative of the biosignals) and EMG (highly controllable) data.

Satoru Tokuhisa
Keio Research Institute at SFC

Rendering Lots of Robots
An outline of the lighting pipeline tools and tricks used at Double Negative to render the Golden Army for "Hellboy 2: The Golden Army".

Katherine Roberts
Graham Jack
Double Negative

PHOTOGRAPHS & DRAWINGS

★ ●

10:30–12:00
Room 302

SESSION CHAIR: Diego Gutierrez

Forward Lean–Deriving Motion Illustrations From Video
Forward Lean extracts moving objects from a video sequence and then illustrates the objects' motions in a single static image by shearing the image into the direction of its motion.

Marc Nienhaus
mental images GmbH

Holger Winnemöller
Adobe Research Inc.

Bruce Gooch
University of Victoria

Automatic 3D Caricature Generation By Learning in Enlarged Manifold Space
Lack of samples makes it challenging to generate 3D caricatures by machine learning. In this method, a training set is enlarged by reconstructing 3D caricatures, and then a regressive model is learnt by manifold regularisation.

Junfa Liu
Chen Yiqiang
Chinese Academy of Sciences

Chunyan Miao
Nanyang Technological University

Wen Gao
Peking University

Visualising Adaptive Clusters of Digital Photographs
With this visualisation method, which considers semantic flow in each cluster, users can select references from a specific camera for smart visualisation if concurrent photos are used as input data.

Chuljin Jang
Hwan-Gue Cho
Pusan National University

Clean up Your Image Using Internet Photo Collections
An algorithm that uses images from internet photo collections to remove user-identified occlusions in an image and faithfully reconstruct the image data that should have been displayed.

Hanieh Taipalus
Helsinki University of Technology

Satoshi Kondo
Matsushita Electric Industrial Co., Ltd.

Takafumi Aoki
Tohoku University

CURVES, PLANES, AND TERRAINS

★ ●

13:45–15:15
Room 302

SESSION CHAIR: Olga Sorkine

Single-View Sketch-Based Modelling From Construction Lines
A new modelling-from-sketches system in which models are made of simple parts drawn with only two strokes, and all the strokes are drawn from a single viewpoint.

Alexis Andre
Suguru Saito
Masayuki Nakajima
Tokyo Institute of Technology

Interactive Control of 3D Class-A Bézier Curves
For design of highly aesthetic curves, this interactive techinque controls 3D, class-A Bézier curves by specifying the two end-points and their tangents.

Ryo Fukuda
Norimasa Yoshida
Nihon University

Takafumi Saito
Tokyo University of Agriculture and Technology

Hexagonal Geometry Clipmaps for Spherical Terrain Rendering
A unified representation of hierarchical triangular mesh and geometry clipmaps using hexagonal geometry clipmaps to render spherical terrain with uniform sampling on the sphere and fast rendering.

Shiben Bhattacharjee
P. J. Narayanan
International Institute of Information Technology, Hyderabad

Relief Clipping Planes for Real-Time Rendering
A technique for performing clipping and capping of arbitrarily shaped solids against clip planes with an additional height or offset map.

Matthias Trapp
Universität Potsdam

Jürgen Döllner
Universität Potsdam

VOLUMES

★ ●

15:45–17:15
Room 302

SESSION CHAIR: Baoquan Chen

Optimised Volume Sampling Based on Manipulation Points for Volume Deformation
A volume-sampling mesh that is optimised to users' dynamic manipulation and the volume data used for interactive volume deformation.

Kei Wai Cecilia Hung
Megumi Nakao
Kotaro Minato
Nara Institute of Science and Technology

Curvature-Based Volume Visualisation of Local Structures
A new curvature-based transfer function for interactive volume visualisation and mining of local structures. The visualisation results are obtained in real time by GPU computing.

Yu Hirata
Megumi Nakao
Tadao Sugiura
Kotaro Minato
Nara Institute of Science and Technology

Rigid-Body Interaction in SPH
A new boundary force based on collision to solve rigid-body interactions in SPH. This method produces more physically feasible results in rigid-rigid interaction than the existing method.

Seungtaik Oh
Younghee Kim
Byung-Seok Roh
Electronics and Telecommunications Research Institute

VISUAL SIMULATION

★ ●

08:30–10:00
Room 302

SESSION CHAIR: Geoff Wyvil

Visual Simulation of Scattering and Settling of Fine Particles
This approach to simulating scattered fine particles can simulate the phenomenon in which particles are scattered by the wind and subsequently settle.

Tetsuyuki Minamihara
Maki Terai
Reiji Tsuruno
Kyushu University

A Visual Simulation for Gold Leaf and Japanese Lacquerware
A method for faithfully representing gold leaf and Japanese lacquer using spectral BRDF and a method for laying out craft materials.

Kazunori Miyata
Kaisei Sakurai
Japan Advanced Institute of Science and Technology

Toshihiro Tomoi
Hiroshi Tashimo
Koji Imao
Yoshiyuki Sakaguchi
Digital Fashion Limited

Fire Simulation and Rendering for "Hellboy 2: The Golden Army"
How Double Negative developed a new fluid simulation system for the pyrokinetic character Liz, resulting in fast, highly detailed fire simulations and renders.

Eugenie von Tunzelmann
May Leung
Double Negative Visual Effects

Interactive Simulation of the Process of Glottal-Wave Generation Using a GPU
A FDLB (compressible and thermal fluid)-MPS(new anisotropic elastics model) coupling method using GPU to directly simulate the process of of glottal-wave generation during human phonation.

Kazuhiko Yamamoto
Kyushu University

LIGHTING & REFLECTANCE

★ ●

10:30–12:00
Room 302

SESSION CHAIR: Wojciech Jarosz

B-Spline Volume vs. Other BRDF Models
This sketch shows that the B-spline volume representation is more suitable for fitting to measured BRDF data than two popular analytical models such as Cook-Torrance and Lafortune.

Joo-Haeng Lee
Electronics and Telecommunications Research Institute

SPARTA: A Scalable Architecture for Ray-Tracing Applications
A low-cost, scalable hardware and software infrastructure for high-performance, interactive ray tracing of very large models that will target large-scale visualisation applications.

Ross Brennan
Michael Manzke
Trinity College Dublin

Spatial-Directional Radiance Caching
Spatial-directional radiance caching accelerates indirect illumination computation on arbitrary glossy surfaces. The main idea is to perform lazy indirect illumination evaluation in both the spatial and directional domains.

Václav Gassenbauer
Czech Technical University in Prague

Jaroslav Křivánek
Cornell University

Fast, Approximate HDR Image-Based Lighting Using Summed-Area Tables
A method to rapidly generate higher-order summed-area tables that allows multiple tables to be generated dynamically while maintaining interactive frame rates.

Justin Hensley
Advanced Micro Devices, Inc.

Thorsten Scheuermann
Valve Software

CALIBRATION & ACQUISITION

★ ●

13:45–15:15
Room 302

SESSION CHAIR: Craig Donner

Image-Correction Method for Multi-Projector Display Using SIFT Features
An image-correction method for multi-projector display that corrects geometric transformation of projected images using feature points in images instead of the special patterns.

Toru Takahashi
Norihito Numa
Tatsuya Kawano
Takafumi Aoki
Tohoku University

Satoshi Kondo
Matsushita Electric Industrial Co., Ltd.

Gloss and Normal Map Acquisition Using Gray Codes
This technique for gloss and normal map acquisition of fine-scale specular surface details provides an efficient and easy method employing only ubiquitous hardware components.

Yannick Francken
Tom Cuypers
Tom Mertens
Philippe Bekaert
Universiteit Hasselt

Considering Shape Reconstruction from Specular Reflection
This method considers the availability of 3D measurement of specular objects when simulating with CAD rendering software.

Tomohito Masuda
Toppan Printing Co., Ltd.

Abhijeet Ghosh
Wan-Chun Ma
University of Southern California

Hiroki Unten
Toppan Printing Co., Ltd.

Paul Debevec
University of Southern California

Image-Based Roughness Modelling Using Perlin Noise
A method for modelling the roughness of real objects from captured images using Perlin noise. Model parameters were acquired from a real object.

Masashi Baba
Masayuki Mukunokiy
Naoki Asada
Hiroshima City University

★ ● ❍

Days & Hours

Thursday, 11 December	08:00–18:00	Poster Session: Thursday, 11 December	12:15–13:15
Friday, 12 December	08:00–18:00	Poster Session: Friday, 12 December	12:15–13:15
Saturday, 13 December	08:00–18:00		

LOCATION: CONCOURSE LINKWAY

Posters

Graphic depictions of incremental or half-baked but innovative ideas displayed throughout the week with scheduled sessions for informal discussions.

During Poster Sessions, authors stand by their posters to talk with attendees and demonstrate their work. See above for days and hours.

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Bin Sheng

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Pere-Pau Vazquez

Tatsuo Yotsukura

Posters

Automatic Data-Extracting Software for Retrieval of Lifetime Photos Using Scent Information

Young ah Seong
The University of Tokyo

Yasuaki Kakehi
Keio University

Jean-Jacques Delaunay
Takeshi Naemura
The University of Tokyo

Enhancing Procedural Animations with Motion Capture Data

Chang-Hung Liang
Tsai-Yen Li
National Chengchi University

Fast Plausible 3D Face Generation from a Single Photograph

Akinobu Maejima
Shigeo Morishima
Waseda University

Flaneur: Digital See-Through Telescope

Hiroshi Sakasai
Hiroshi Kato
Takako Igarashi
Miho Ishii
Masahiko Inami
Naohito Okude
Masa Inakage
Keio University

Green Graphics: Feedback Control for Energy-Efficient Rendering

Gabriyel Wong
Jianliang Wang
Nanyang Technological University

High-Speed Hand Tracking for Gesture Recognition

Takafumi Aoki
Tokyo Institute of Technology

Interactive Animation of Waterdrops With Particle-Based Fluid Simulation

Takuya Abe
Masataka Imura
Sei Ikeda
Yoshitsugu Manabe
Kunihiro Chihara
Nara Institute of Science and Technology

Kime Pose Anime in Japanese Style Using Action-Line Control

Satoshi Cho
Kanagawa Institute of Technology

Toshihiro Komma
Shobi University

Hisashi Sato
Kanagawa Institute of Technology

Kunio Kondo
Tokyo University of Technology

Real-Time Composition Pre-Visualisation System

Hye-mi Kim
Jungjae Yu
Jae-Hean Kim
Electronics and Telecommunications Research Institute

Shade Pixel: Interactive Skin for Ambient Information Displays

Hyunjung Kim
Boram Lee
JinHa Seong
Woohun Lee
Korea Advanced Institute of Science and Technology

Toward Multi-View Photometric Stereo for Body-Shape Measurement

Yusuke Yoshiyasu
Keio University

Twist-and-Stretch: A Shape Dissimilarity Measure Based on 3D Chain Codes

Victor Lopez
Universidad Nacional Autónoma de México

Irene Cheng
University of Alberta

Ernesto Bribiesca
Universidad Nacional Autónoma de México

Tao Wang
Anup Basu
University of Alberta

★ ● ❍

Days & Hours

Thursday, 11 December	08:30–17:30
Friday, 12 December	08:30–17:30
Saturday, 13 December	08:30–17:30

LOCATION: GALLERY EAST

Art Gallery / *Synthesis*

The SIGGRAPH Asia 2008 Art Gallery presents art that transforms, melds, and transcends current Asian paradigms. This international, multicultural festival of creativity showcases work in all media–including "hybrid" formats such as text-literature collaborations, ubiquitous sounds, and zero-gravity space art–that provokes contemplation, explores surprising ideas, addresses contemporary issues, interactively engages viewers in discovery, and stimulates their intellect and creativity.

Art Gallery Committee

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Museum of Contemporary Art Tokyo
The University of Tokyo

CO-CHAIR

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Orita·Sinclair - School of Art & New Media
Orita·Sinclair - FrontRoom Gallery

JURY

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Museum of Contemporary Art Tokyo
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Getty Research Institute

Erkki Hohtamo
University of California, Los Angeles

Lin Hsin Hsin
Lin Hsin Hsin Art Museum

Linda Lauro-Lazin
Pratt Institute

RELATED EVENT

The Japan Media Arts Festival is a showcase of award-winning new media art, animation, manga, and entertainment with a strong focus on Japanese culture. Since its inauguration in Tokyo in 1997, this annual event has grown from strength to strength, attracting entries from amateurs and professionals alike from around the globe.

The exhibition at the Singapore Art Museum's new contemporary art wing at 8 Queen Street introduces Southeast Asian audiences to a varied and engaging selction of digital and new media art and technologies. Cutting-edge artworks are displayed alongside familiar and well-loved pop culture icons from the world of anime and manga. The exhibition also features an interactive section with various popular entertainment systems such as Nintendo Wii and a schedule of symposia, workshops, and screening events.

Symposium
Intersection of Asian Art and Technology
Featuring SIGGRAPH Asia 2008 artists and chairs
12 December, 16:00–18:00
The Auditorium at Singapore Art Museum Main Building

Festival
22 November–14 December 2008
Galleries 4.11, 4.12, Octro & Qoppa Rooms, 8Q sam
Singapore Art Museum

Alison: Statified Cooperative Storytelling in Dissociative Identity

In the Alison installation, different plot elements are presented based on the viewer's movement within a physical space. The space works as both a form of interaction and another method of presenting story elements.

Matthew Smith
Evan Boucher
Drexel University

Amagatana + Fula

A set of daily objects that combine physical and ubiquitous computing to allow users to live their daily lives playfully. Amagatana, an umbrella, makes clashing sword noises when swung around, and Fula, a muffler, flutters and billows by itself in response to the user's motor-action potentials.

Yuichiro Katsumoto
Masa Inakage
imgl / Keio University
Japan

dot . a scene = sin0 at the sea _ tactuaL [si:gak] series #2

A proposal for new media installation artworks for empirical communication design of visual information based on digital graphic design in the social context. The significance of this project is to promote public awareness of the disabled in formative ways. As users touch the tactile dots of the installation, they experience "tactile seeing" of ocean scenery in shining dots. This project is a successor to Dreaming a Fingertip Conversation with You, which was shown in the SIGGRAPH 2007 Art Gallery.

Haemin Kim
Graduate School
of Seoul National University
South Korea

Falling: Suicide and the Sidewalk

This work comprises a video sequence shot from my sixth-floor apartment window to the sidewalk below and composed inside a digital-game environment. The intention is to empty the video of narrative, reduce it to an image string. Exploring the space, flying over and through the image sequence, the effect turns unsettling and a new narrative emerges.

Brett Phares
Marist College
USA

Liuliu Pangpang

Liuliu Pangpang is an interactive optical-illusion installation. A projected floor dynamically tilts like a see-saw in different directions when people interct with it. Balls inside the floor move according to natural physical laws.The floor's directions and angles are influenced by the locations and numbers of viewers. The game-like environment encourages viewers to explore body movements and interact with each other.

Yachi Peng
Maowei Yu
Woo sok Jang

COLLABORATORS
Sue Gyeong Syn
SeungJoo Kim
Pratt Institute
Taiwan/Korea

Movement 11 (2008 serie)

In this expression of the energy of a virtual dancer, we can see the vibration of his virtual movements in the universe. My work is about my impression of Asian wisdom and gods.

Alain Bittler
France

Optical Tone – Dynamic Color Composition

Optical Tone is an installation that proposes and proves a technique for interactive and temporo-spacio color composition in accordance with human perception of color consistency.

Tsutomu Mutoh
International Media Research Foundation
Japan

The Orb

The Orb bridges the gap between the art object and functional information display, advancing desires for more sophisticated digital representations, while simultaneously establishing a dialogue between the new technology and the symbolic content of the display. Featuring an 18-inch-diameter display and aluminum and carbon-fiber construction, this version has a spherical resolution of 1024 X 216 with 24-bit color. It explores visualisations of the phenomena of creation and destruction within the universe, evoking a "big bang" and eventual climate collapse.

James Nick Sears
USA

Pudding Building

A visualisation of tremors that affect an Asian building symbolises a rapidly changing people's social cognition and a contracting social structure. Max/MSP, Jitter, and Arduino are used to capture the image of the miniature building, for image processing, for detecting the number of viewers, and to operate vibrating motors.

ByungKyu Kim
HyunDong Kim
Dongjo Kim
JungHwa Han
Unzi Kim
Chung-Ang University
South Korea

Shan-Shui-Shua (Mountain-Water Painting)

This ambient "video scroll" presents two poems of the famous poet Han Shan as a reflection on Western mountaineers' fight against nature as they ascend and descend the highest peaks, counterpointing the Chinese attempt of spiritual harmony. Proceeding from Chinese thought and aesthetics, the traditional concept of landscape painting, Shan-Shui-Hua, is recreated in digital visualisation. The concept of multiple vanishing points (San-e-Ho) and the endless scroll are explored through digital filmmaking.

Christin Bolewski
Loughborough School of Art and Design
United Kingdom

Strada

The concept of this work is separating landscape scenes from the people and objects that occupy the street space. The source of the idea is background-subtraction programming developed at the Tele-Immersion Lab at the University of California, Berkeley. Viewers see two different location street scenes, one from somewhere in the USA and the other from the SIGGRAPH Asia 2008 Art Gallery. Viewers experience three different ways of digitally visualising animated street scenes in which they themselves are included.

Hojin Chang
University of California, Berkeley College of Environmental Design

Sukkyu Lee
University of Illinois at Urbana Champaign

Sooyeon Han
University of California, Berkeley Center for New Media
USA

STRANGERS

Out-of-focus elements read as individual faces, familiar yet unfamiliar. The works speak about recognition of what we think we know ... but they are elusive.

Derek Besant
Alberta College of Art & Design
Canada

Tactile Cloud Landscape

This simulation of a natural landscape is a tactile artwork that interactively expresses images and movements of clouds. Images and tactile sensations incorporating the soft movements of clouds interact simultaneously to create a tactile display that reacts to human contact. This work could be used as a universal display for the disabled and for various other forms of global communications.

Kumiko Kushiyama
Tokyo Metropolitan University
Japan

Telematic Drum Circle

Telematic Drum Circle is an interdisciplinary art project combining telecommunications, robotics, human-computer interaction, and improvisational music. The project allows online users around the world to create a live collective sound improvisation by controlling 16 robotic percussion instruments via the internet. By tapping the computer keyboard while viewing the web site, online users can remotely play the robotic instruments together while watching a live streaming webcast of their ensemble.

Byeong Sam Jeon
Department of Electronic Arts, Rensselaer Polytechnic Institute
USA

Ten Thousand Cents

Ten Thousand Cents is a digital artwork that creates a representation of a US $100 bill. Using a custom drawing tool, thousands of individuals working in isolation from one another painted tiny parts of the bill with no knowledge of the overall task. Workers were paid one cent each via Amazon's Mechanical Turk distributed labor tool. The total labor cost to create the bill, the artwork created, and the reproductions available for purchase are all $100. The work is presented as a video piece with all 10,000 parts being drawn simultaneously. The project explores the circumstances we live in, a new and uncharted combination of digital labor markets, "crowdsourcing," "virtual economies," and digital reproduction.

Takashi Kawashima
Aaron Koblin
USA

theRelativity

Our impression of a scene changes depending on the aspect. theRelativity is an interactive art work that seamlessly reflects a third-person view of a structure into a first-person view.

Jun Fujiki
Japan Society for the Promotion of Science, Kyushu University

Shigeru Owada
Sony Computer Science Laboratories, Inc.
Japan

Three Little Pigs in the CG Theater

NHK has developed a new style of content creation for a puppet show. The performers operate the actual puppets in a CG environment called Uncompleted Contents, and the complete contents are produced with them in real time. This production style presents limitless possibilities not only for TV programming, but also for interactive elements.

Yuko Yamanouchi
Takashi Fukaya
Hideki Mitsumine
Hidehiko Okubo
NHK (Japan Broadcasting Corporation)
Japan

[un]wired

[un]wired is a live-processing installation that responds to interactions from personal radio-frequency devices such as mobile phones, WiFi signals, Bluetooth signals, and car-key fobs. It tracks real-time statistical information from wireless "mesh" access points (designed for seamless handoff of moving wireless traffic, like a cell phone network), along with periodically updated information from handheld and wireless access points. Control information is collected from network services via SQL and transferred into Max/MSP/Jitter.

Jesse Allison
John Fillwalk
Keith Kothman
Institute for Digital Intermedia Arts, Ball State University
USA

ART PAPER

A Method for Transformation of 3D Space into Ukiyo-e Composition

Saturday, 13 December, 15:45–16:15
Room 302

This paper discusses a method of using a perspective drawing to reconstruct three dimensions and then converting this to an ukiyo-e composition by moving three-dimensional objects without changing their three-dimensional aspects. To develop the method, the authors analyzed the structure of ukiyo-e to quantitatively identify non-perspective features of an architectural ukiyo-e scene from 1800 and later. To verify the method, they developed a program to convert photographs and perspective drawings to ukiyo-e compositions.

Yuka Kubo
Koichi Hirota
Zhao Jie
The University of Tokyo
Japan

SYNTHESIS–CURATED SHOW

Breathing Chaos Fluidity

Breathing Chaos (2004, 8:11, DVD) is a short film that uses the dynamic forces of nature to suggest that life emerges from the expression of physical power. Themes include the chaos of fluidity, the order that results from it, and the symmetrical splendor born from indeterminable chaos.

Fluidity (2008) is a collection of photography and moving images of ferrofluid art that expresses "fluidity" itself.

Sachiko Kodama

SOUND
Ippei Ogura

Flow of Qi

A video presentation of an interactive artwork in which participants experience the artistic spirit of the ancient calligraphy masters and how breathing was reflected in creating famous pieces of Chinese calligraphy.

Two participants are seated in chairs equipped with ultra-wide-band devices that measure both the speed and depth of breathing every 0.1 seconds, which influences the pattern of the calligraphy. One person affects the fluidity and speed of the strokes, while the other alters the intensity of the ink. By altering the depth and rhythm of their breathing, the participants gradually reach a state of harmony with the calligrapher and with each other, drifting deeper into this art through sensing and controlling the flow of their own Qi.

CONCEPT, CREATIVE DIRECTOR
Shu-Min Wu

ART DIRECTOR
Yau Chen

PRODUCER
Horus Shu

TECHNICAL DIRECTOR
Tsang-Gang Lin

UWB TECHNICAL DIRECTOR
Teh-Ho Tao

INTERACTIVE SOUND DESIGNER
Tang-Chun Li

CREATIVE PRODUCER
Ministry of Economic Affirs, Taiwan

CREATOR
Industrial Technology Research Institute

EXECUTIVE PRODUCER
ITRI Creativity Lab

The original calligraphy images are all authorised by the National Palace Museum in Taiwan.

Ghostly Images Appearing in Moving Human Eyes and Still Machine Eyes

This saccade-based display is a device capable of presenting two-dimensional images using a unique bar of addressable light sources (a column of LEDs). In a dimly lit environment, each time the saccadic eye movement of the observer is detected, the flashing pattern of the column light expands, and ghostly images appear in midair.

Due to the electronic scanning mechanism of the CCD image sensor, certain video cameras are also capable of capturing these floating images even when they are not moving at all.

These observations encourage a reflection on the process of vision. Natural and artificial visual systems rely on some sort of active sensory mechanism for exploring the external world, though their temporal scales may be different. We sense and react to the world, and we even use machines that can take pictures without paying attention to these hidden perceptual mechanisms, but understanding and exploiting them may open up new possibilities of perceiving and displaying.

Hideyuki Ando
Alvaro Cassinelli
Junji Watanabe

Imaginary·Numbers

In my creative process, I begin with a numerical formula as a universal language and then develop it into various media. As a result, I spend a great deal of time constituting the system. However, at this stage, there is hardly anything visual apart from small graphs.

I can only imagine the visual result, and I have to depend on my own sense of the fluctuating structure when I constitute the system. Once I get to the stage of making a collection of graphs into an artwork, I try to take such factors as human physicality and memory into the work, which makes it more than just a visual image.

I believe that art is not intended to be a gateway to understanding the artist's system, but a method of activating the viewers' psychological-motion systems (memory and physical sensation). These should be triggered by looking at the art-work. When viewers can realise their own feelings and memories, the artwork is truly completed. The systems activated in the mind of the viewer can be different, depending on the medium of the work. Even if the artist has created only one system in the computer, the image generated has to be properly selected.

This series is supported by the Aihara Complexity Modelling Project at JST ERATO, and the artist is a member of the project.

Keiko Kimoto

Kazuma Morino Works

Kazuma Morino has received many awards in international competitions including SIGGRAPH and Ars Electronica. In his Build, exhibited in the SIGGRAPH 2003 Art Gallery, many of the built structures in our contemporary urban landscapes are concatenations of pre-fab parts and standardized dimensions.

This film plays with different skeletal arrangements of those parts to create images reflective of contemporary building blocks. In Runners, figures (dolls) made up of geometric shapes rush around, intertwining with other objects. The work expresses the beauty of interacting objects over the course of time.

Currently, he is collaborating with musicians such as Ken Ishii and Yosui Inoue on their music videos. He has also played an important role as a producer of the first floor of the SETO NIPPON KAN pavilion in EXPO 2005 in Aichi, Japan. For SIGGRAPH Asia 2008, he is a contributing artist for the Art Gallery and Emerging Technologies trailer.

Kazuma Morino

Media Device for Hand Scroll 2008

This reproduction of the handscroll of Poems of the Thirty-Six Immortal Poets over Design of Cranes is a rolled up scroll of paper. But the paper is blank. When the media device is engaged, the projected image of the Crane Scroll appears on blank paper.

As viewers unroll the scroll, they can decide which part they want to view (for example, only the calligraphy of Hon'ami Koetsu or only the painting by Sotatsu). They can also hear a recitation of the poetry, sung in the traditional manner by members of the Reizai family.

Viewers are free to use this system as they like, as they gain the understanding that the original handscroll was also, in a very real sense, an interactive medium.

This project is supported by the Kyoto National Museum, Reizei-ke Shigureteibunko, the Philadelphia Museum of Art, IAMAS, IDD at Tama Art University, and members of the Hon'ami Koetsu multimedia project.

Yasuhito Nagahara
Nobuya Suzuki
Keiko Kobayashi

SIGGRAPH Asia Archive in Second Life

Hidenori Watanave is researching the arts in the 3D internet (for example, Second Life) and the 3DGIS (for example, Google Earth). He is interested in collaborative work in the realms of architecture and environmental design in tele-existence in the 3D internet.

Spatial design in the 3D internet was established through the Archidemo project (2007-2008), which was selected to be part of FILE 2008 and SIGGRAPH 2008 in Los Angeles. His current experiment focuses on translating 3D internet space into real space through GPS and GIS, using techniques like those developed by Hidenori in the NetAIBO project (2004-2005, Honorary Mention, Prix Ars Electronica) and the ObaMcCain project (2008) of 3Di-chatterbots-space, which was exhibited in Mission Accomplished at the Location One gallery, New York.

The theme of this SIGGRAPH Asia 2008 project is a visualisation of a huge visual archive of SIGGRAPH 2008 Emerging Technologies in the 3D internet domain.

Hidenori Watanave

Watch Me!

Watch Me! is an experimental installation dedicated to documenting social bind (defined below) by intervening in a public space. It observes the behaviour of people's "eyes" using a robot bear as an unusual event.

When you visit another country for the first time, you may be puzzled by people's behaviour as they respond to incidents or encounters. Then you might realise that they seem to behave spontaneously but are predisposed to exhibit certain behavioural traits by society and culture. We call this "social bind."

Yasushi Noguchi
Hideyuki Ando

★ ● ❍

Days & Hours

Thursday, 11 December	08:30–17:30
Friday, 12 December	08:30–17:30
Saturday, 13 December	08:30–17:30

LOCATION: GALLERY EAST

Emerging Technologies

SIGGRAPH Asia 2008 Emerging Technologies presents a paradigm shift, a rich resource of delicate, aesthetic technologies and vivid, innovative ideas.

Interactive, mind-expanding explorations in virtual and mixed reality, haptic interfaces, ubiquitous systems, digital tools, HD displays, robotics, and more. Emerging Technologies presents demos and installations of technologies that define the future of computer graphics and interactive techniques.

Emerging Technologies Committee

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Museum of Contemporary Art Tokyo
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CO-CHAIR

Adrian Cheok
National University of Singapore
Keio University

JURY

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Museum of Contemporary Art Tokyo
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Orita·Sinclair - FrontRoom Gallery

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ON-SITE COORDINATOR

Preston J Smith
Electronic Data Systems Corporation

ARForce

A novel marker-based system for augmented reality that measures not only the 3D positions and IDs of markers, but also the distribution of force vectors applied to the markers. Users can observe overlaid virtual images and control them with their fingers.

ENHANCED LIFE

Many current marker-based AR systems can easily combine virtual imagery with the real world, but their user-input options are limited, and it is difficult for users to freely manipulate the virtual images without special electronic devices. Because ARForce detects the distribution of force vectors applied on the interface as well as their 3D positions and IDs, users can manipulate them by pinching and twisting in the three-dimensional space.

GOALS

The overall goal is to develop a novel tangible interface for augmented reality. Specifically, the goal is to provide a marker-based interface that allows users to observe overlaid virtual images on the real world and manipulate the images with their fingers.

INNOVATIONS

The core innovation is an interface design that detects 3D positions, IDs, and force input at the same time without special electronic devices installed on the interface. The sensing process:

1. The system detects its 3D position and the ID of each interface through position markers attached on the interface. The square-detection method of ARToolKit tracks positions, and an original pattern-matching method detects IDs.

2. To detect the force-vector distribution, the system tracks the movement of force markers embedded inside the interface. Infrared filters make the markers invisible to users.

3. As users push, twist, or stretch the interface, the system generates virtual images in appropriate positions with auditory feedback.

VISION

In the near future, ARForce will be enhanced so that it can measure more detailed tactile information and control virtual objects as if they are real objects. Ultimately, ARForce will provide a novel computer-human interface that supports more natural and intuitive input in everyday life.

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Kensei Jo
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Kouta Minamizawa
Hideaki Nii
Naoki Kawakami
Susumu Tachi
The University of Tokyo

Augmented Reality Authoring for Artists and Designers

By using ARToolkit for marker tracking and Touch Designer (a commercial, real-time 3D environment) for modelling, rendering, and compositing real and virtual images, artists and designers can quickly create interactive AR environments.

ENHANCED LIFE

When artists can directly control underlying technologies without an intermediary such as a programmer, they can take more creative risks and push their ideas further.

GOALS

The primary goal is to bring the technologies for making augmented reality out of the labs and into the hands of artists, designers, and other creative practitioners. Eventually, this will serve a wider goal: hastening augmented reality's transition from a technology to a true expressive medium and part of our collective culture.

INNOVATIONS

This system is essentially a novel combination of existing technologies: the marker-tracking capabilities of ARToolkit and the 3D-display capabilities of Touch Designer. The most important component is the procedual-flow-style interface that eliminates the need for C++ programming and makes the designer's job easier.

VISION

In the future, end-user programming tools like this one will allow people to customize their own augmented reality environments and generally have more control over the technology that surrounds them.

CONTRIBUTORS

Rodney Berry
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Jörg Unterberg
Filmakademie Baden-Württemberg

Wei Liu
Adrian David Cheok
National University of Singapore

Hirokazu Kato
Nara Institute of Science and Technology

An Augmented Tabletop Video Game With Pinching Gesture Recognition

A novel interaction technique for a multiplayer tabletop entertainment system that recognises quick tapping gestures for position and orientation input using a high-speed camera.

ENHANCED LIFE

This technology enables more intuitive and entertaining interaction between humans and interactive surfaces such as tabletop systems.

GOALS

To recognise various human behaviours, including very quick motions, and enable intuitive and entertaining interaction between humans and displays.

INNOVATIONS

The main innovation is a new interaction technique that recognises tapping gestures. In tests with multiple users, the system achieved a high-response bimanual interaction. It uses a high-speed camera to track positions, orientations, and quick tapping gesture.

VISION
In the near future, interactive surfaces will be ubiquitous. Walls, tabletops, floors, and other surfaces in private and public spaces will provide interactive communication and experiences.

CONTRIBUTORS
Kentaro Fukuchi
Japan Science and Technology Agency

Toshiki Sato
Haruko Mamiya
Hideki Koike
The University of Electro-Communications

Balance Ball Interface

A user-interface device for exercise and entertainment. As users move while sitting on the balance ball, the system captures their motion and behaviour.

ENHANCED LIFE
This easy-to-use, inexpensive interface system liberates people from sedentary, unhealthy computer work. It is a surprising new concept that changes our assumptions about chairs and interfaces, and promotes a new reality.

GOAL
To develop a game-interface device that acquires complex movements of a human body in a sitting posture.

INNOVATIONS
This interface technology converts information from an acceleration sensor and a pressure sensor into posture information. Movements of the upper body and the waist are calculated from these inputs and converted into whole-body movements.

CONTRIBUTOR
Masasuke Yasumoto
Graduate School of Film and New Media, Tokyo University of the Arts

Eggy Robot

The most recent progress on the Eggy Robot project, which aims to synthesise a robot that helps us feel and imagine the emergence of primeval organisms.

ENHANCED LIFE
The Eggy Robot project is the very first attempt to implement a totally soft robot, a synthetic being that consists of "soft balloons" and pneumatic muscles. The robot moves in a very novel manner, approaches humans when they are detected by the robot's vison system, and offers greetings.

GOAL
The short-term goal is to synthesise artistic, child-safe, entertaining robots. The long-term goal is to develop Eggy Robots that will explore the surface of Mars or the deep oceans.

INNOVATIONS
When a robot consists of "hard" materials such as aluminum, it is easy to control its behavior. But when a robot is made of soft materials, it is almost impossible to control its behaviour with traditional control theory. The Eggy Robot project explores a novel behavioural-control architecture in which robot behaviours emerge from the interplay among the robot's neural system, its bodily dynamics, and its environmental dynamics.

VISION
The technologies exploited in this project will help robotic or toy companies build effective, useful, child-safe home robots in the next 20-50 years.

CONTRIBUTOR
Yoichiro Kawaguchi
The University of Tokyo

Flaneur: Digital See-Through Telescope

Flaneur is a digital scope that helps you see shops and objects behind buildings as you stroll around town.

ENHANCED LIFE
This technology adds richness and surprise to city explorations.

GOAL
To make city life more interesting.

INNOVATION
The major innnovation of this technology is its ability to present spatial representations from a first-person point of view.

CONTRIBUTORS
Hiroshi Sakasai
Hiroshi Kato
Takako Igarashi
Miho Ishii
Maki Sugimoto
Masahiko Inami
Masahiko Inakage
Naohito Okude
Keio University

Heaven's Mirror: Mirror Illusion Realised Outside of the Mirror

With this system, users experience a mirror illusion through three modalities of feedback (haptic, visual, and auditory) and perceive a boundary-less transition between the real world and the world inside the mirror.

ENHANCED LIFE
Sometimes, mirrors provide illusions that distort physical laws. In Heaven's Mirror, the illusions become "real" as users' visual, tactile, and auditory senses are immersed in the world inside the mirror. This approach opens new possibilities for using mirrors in virtual reality.

GOALS
To allow users to perceive a seamless boundary between the inside and outside of the mirror.

INNOVATIONS
Heaven's Mirror focuses on the physical relationship between the real world and the world inside the mirror. It uses a mirror illusion and amplifies it to the real world so users can experience a mirror illusion through three modalities of feedback.

CONTRIBUTORS
Seunghyun Woo
Takafumi Aoki
Hironori Mitake
Naoki Hashimoto
Makoto Sato
Tokyo Institute of Technology

M3: Multi-Modal Interface in Multi-Display Environment for Multi-Users

A sophisticated and intuitive interface for multi-display environments where the displays are stitched seamlessly and dynamically according to the users' viewpoints.

ENHANCED LIFE
M3 is a multi-modal interface in a multi-display environment for multiple users. It combines multi-modal interaction techniques such as gaze, body movement, and hand gestures. Perspective-aware interfaces also allow users to observe and control information on the multiple displays as if they are in front of an ordinary desktop GUI environment.

GOAL
To build intelligent environments that provide appropriate types of information and input methods for specific interaction requirements.

INNOVATIONS
This project explores two important domains of interface technologies: multi-modal and perspective-aware.

VISION
In the future, people will use multi-modal interfaces to interact naturally and intuitively with displays located everywhere.

CONTRIBUTORS
Satoshi Sakurai
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Miguel A. Nacenta
University of Saskatchwan

Sriram Subramanian
University of Bristol

Massive Action Control System

Massive Action Control System concurrently controls thousands of actions of multiple characters with various motivations, feelings, and personalities.

ENHANCED LIFE
With this system, users can easily create lifelike characters and expand player experiences. For example, non-player characters can become active in massive multi-player role-playing games.

GOALS
In recent years, many interactive storytelling applications have relied on progress in animation technology to create autonomous characters. Massive Action Control System is the next step in this evolution. Its purpose is to help developers create characters that perform massive actions (such as greeting, talking a walk, or going to work), reflex actions (which require reacting to input from a user), perceiving actions (where the character perceives an object and reacts to it), active actions, and actions based on personalities or feelings.

INNOVATIONS
This system can execute massive actions in multiple characters. It continuously selects appropriate fragmentary behavior-control modules, called episode trees, based on the character's inner states (motives, feelings, and personality, for example) and the state of the external world, such as nearby characters and objects.

Massive Action Control System is demonstrated via an application called Spilant World, which dislays multiple characters with multiple motivations. When a user adds a new object to the virtual world or touches an object in the virtual world, the characters recognise the object or action and autonomously start new actions. This, in turn, affects the action selection of other characters, creating an opportunity for those characters to change their actions. Users can experience the story not only by tying their actions to changes in the characters' actions, but also by allowing the effect to spread over the long term.

VISION
This system expands the possibilities for likelike narrative entertainment. Users will be able to build new narratives with lifelife interactive characters in the privacy of their own homes as well as in public spaces (airports, railway stations, shopping molls, etc.).

CONTRIBUTORS
Katsutoki Hamana
Junichi Hoshino
Atsushi Nakano
University of Tsukuba

TransCAIP: Live Transmission of Light Field from a Camera Array to an Integral Photography Display

TransCAIP provides a real-time 3D visual experience by using an array of 64 cameras and an integral photography display with 60 viewing directions. The live 3D scene in front of the camera array is reproduced by the full-color, full-parallax auto-stereoscopic display with interactive control of viewing parameters.

ENHANCED LIFE
This project demonstrates the potential of live 3D TV systems in a prototype system. The core technology is a fast and flexible data-conversion method from the multi-camera images to the integral photography format. Because the conversion method is applicable to general combinations of camera arrays and integral photography (and multi-view 3D) displays, it could be an essential technology for future 3D TV systems.

GOALS
The overall goal is to develop a practical live 3D TV system that reproduces a full-color 3D video of a scene with both horizontal and vertical parallax in real time. The system gives users a perception of observing the 3D scene through a window without requiring them to wear special glasses. The main technical goal is to develop a fast and flexible data conversion method between asymmetric input and output devices, which runs in real time (more than five frames per second) on a single PC with GPGPU techniques and enables users to interactively control viewing parameters of the displayed 3D images for enhancing the 3D visual experience.

INNOVATIONS
1. Live transmission of 3D scenes. TransCAIP transmits light fields [Levoy and Hanrahan 1996; Gortler et al. 1996] from an array of 64 cameras to an integral photography display with 60 viewing directions in real time. It enables users to observe a live 3D video of the scene with both horizontal and vertical parallax.

2. Real-time light-field conversion. To connect the asymmetric input and output devices, TransCAIP performs real-time

light-field conversion between 64 input views of 320 x 240 pixels captured with the camera array and an integral photography image consisting of 60 views of 256 x 192 pixels. Using the 64 input views, it first renders 60 novel views corresponding to the viewing directions of the display by using an image-based rendering method [Taguchi et al. 2008] and then arranges the rendered pixels to produce an integral photography image. For generating high-quality novel views, this method estimates a view-dependent per-pixel depth map at each rendering camera viewpoint based on a layered representation. For real-time processing on a single PC, the conversion algorithm is fully implemented on a GPU with GPGPU techniques.

3. Interactive control of 3D viewing parameters. TransCAIP enhances users' 3D visual experience by allowing them to interactively control viewing parameters of the displayed 3D images. In the light-field conversion method, the rendering cameras are placed at a regular interval such that their viewing directions converge at the same point. The plane whose depth is equal to that of this point is called the convergence plane. The convergence plane corresponds to the display plane of the integral photography display. Since objects near the display plane are reproduced with a higher resolution than those farther from the plane [Hoshino et al. 1998; Zwicker et al. 2007], the system enables users to set the plane at a desired position in the target scene. The position of an object relative to the display plane is also determined by the convergence plane. Moreover, users can control the amount of depth reproduced on the display by changing the interval of the rendering cameras. Users can also control the location of the part of the scene reproduced on the display by changing the positions and view angles of the rendering cameras. Users can interactively perform the viewing parameter control as a software process without reconfiguring the hardware system.

VISION

Three-dimensional TV is a promising technology for providing a more natural and intuitive perception of 3D scenes than existing two-dimensional TV. In particular, live 3D TV systems, which transmit 3D visual information in real time, could have a significant impact on many applications in communication, broadcasting, and entertainment in the near future.

CONTRIBUTORS

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★ ● Electronic Theatre ★ ● ❍ Animation Theatre/Special Programme/Invited Screenings/Talks & Panels

Days & Hours

Electronic Theatre

Thursday, 11 December	19:00–21:00
Friday, 12 December	19:00–21:00
Saturday, 13 December	16:00–18:00, 19:00–21:00

Animation Theatre/Special Programme/ Invited Screenings/Talks & Panels

Various Times (see Schedule at a Glance p103)

Computer Animation Festival

The first edition of the SIGGRAPH Asia Computer Animation Festival illuminates a new horizon of animation and visual effects from around the world.

Electronic Theatre

A very popular feature of the SIGGRAPH conference for many years, the Electronic Theatre offers some of the world's most remarkable work selected by a distinguished international jury. In addition, works presented in the Electronic Theatre are eligible for festival prizes. The Best of Show and Jury Awards will be announced during SIGGRAPH Asia 2008.

Animation Theatre

An intriguing collection of innovative achievements in all genres of animation and visual effects.

Special Programme

Entertaining and inspiring examples of the latest and greatest animation techniques and visual effects, selected in a special jury process.

Invited Screenings

School Showcase of promising student work, Studio Specials from the world's leading animation and visual effects experts, and the Best of SIGGRAPH Award Winners from previous Computer Animation Festivals.

Talks & Panels

Revealing behind-the-scenes presentations on the how and why of production.

Computer Animation Festival Committee

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Media Trailer

PRODUCER

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SBA Seoul Animation Center

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Jong-Min Hahm

SOUND

Dong-Joo Park

ELECTRONIC THEATRE

★ ● **Admission only with a valid Electronic Theatre ticket**

Thursday, 11 December	19:00–21:00	
Friday, 12 December	19:00–21:00	
Saturday, 13 December	16:00–18:00, 19:00–21:00	Theatre

It's Mine
Nicolai Fuglsig
The Mill
USA

Appleseed: Ex Machina
Shinji Aramaki
Digital Frontier, Inc.
Japan

Jungle Jail
Bruce Nguyen Van Lan
Aymeric Palermo
Hugo Cierzniak
Mathieu Arnoux
Ecole Supérieure des Métiers Artistiques
France

Guinness
Marc Craste
Studio aka

Heavy Duty
Jung-Peng Chiou
Teddy Yang
Digimax, Inc.
Taiwan, United Kingdom

Fly Out Blue
Jack (Ming-Huei) Shih
Red Alien Studio
Taiwan

Mindplotter
Jan Bitzer
Ilija Brunck
Tom Weber
Filmakademie Baden-Württemberg
Germany

Replay
Zakaria Boumediane
Anthony Voisin
Fabien Felicite-Zulma
Camille Delmeule
Ecole Supérieure des Métiers Artistiques
France

Blizzard Entertainment's StarCraft II Announcement Teaser
Nick Carpenter
Blizzard Entertainment
USA

The Moment
Verena Fels
Csaba Letay
Filmakademie Baden-Württemberg
Germany

Hugh
Sylvain Nouveau
Mathieu Navarro
François Pommiez
Aurore Turbé
Ecole Supérieure des Métiers Artistiques
France

DELHAIZE
Fraggleboo
Chez Eddy
France

"I Am Legend": Making an Alternate Ending
Jim Berney, Visual Effects Supervisor
Sony Pictures Imageworks
USA

They Will Come to Town
Thilo Ewers
Filmakademie Baden-Württemberg
Germany

Drench "Brains Dance"
Ringan Ledwidge
The Mill
United Kingdom

E.T.A.
Henrik Bjerregaard Clausen
Denmark

Harmonix "Rock Band"
Pete Candeland
Passion Pictures
United Kingdom

Blind Spot
Johanna Bessiere
Nicolas Chauvelot
Olivier Clert
Cécile Dubois Herry
Yvon Jardel
Simon Roub
Gobelins, l'école de l'image
France

Futurisk
Matthijs Van Heijningen
The Mill
USA

Minamitama District
Nobuo Takahashi
Nagoya City University
Japan

The Making of Street Fighter IV
Toshio Ohashi
Polygon Pictures Inc.
Japan

Lawson–Well Done
Timm Osterhold
FIFTYEIGHT 3D Animation & Digital Effects GmbH
Germany

Keep Right
Yang Sunwoo
ETRI (Electronics and Telecommunications Research Institute)
South Korea

Guinness "Tipping Point"
Nicolai Fuglsig
The Mill
United Kingdom

ELECTRONIC THEATRE (CONTINUED)

★ ●

Thursday, 11 December	19:00–21:00	
Friday, 12 December	19:00–21:00	
Saturday, 13 December	16:00–18:00, 19:00–21:00	Theatre

Hellboy II: The Golden Army
Guillermo del Toro
Double Negative
United Kingdom

BBC iPlayer "Penguins"
Vince Squibb
Darren Walsh
Passion Pictures
United Kingdom

Oktapodi
Julien Bocabeille
François-Xavier Chanioux
Olivier Delabarre
Thierry Marchand
Quentin Marmier
Gobelins, l'école de l'image
France

KUDAN
Taku Kimura
Links DigiWorks Inc.
Japan

This Way Up
Smith & Foulkes
Nexus Productions Ltd
United Kingdom

Computer Animation Festival

ANIMATION THEATRE I

★ ● ❍

Thursday, 11 December	15:30–16:30
Friday, 12 December	09:00–10:00
Saturday, 13 December	13:45–14:45

Room 201

Kieselstein
Ellen Hoffmann
Filmakademie Baden-Württemberg
Germany

Lloyds TSB General Insurance
Marc Craste
Studio aka
United Kingdom

The Bird
Sung-Gil Kim
Nakyoung Kim
South Korea

Oracle
Flavien Lens
Tristan Legranché
Sébastien Buisson
Michaël Desnoyelles
Ecole Supérieure des Métiers Artistiques
France

Angkor Ruins – The Bayon Temple and its Faces
Masaaki Sakata
TOPPAN PRINTING CO., LTD.
Japan

Burley!
Dave Edwardz
Gareth Cowen
Rendition Films
Australia

Origami
Jeffrey Plansker
The Mill
USA

Red Rabbit
Egmont Mayer
Filmakademie Baden-Württemberg
Germany

ANIMATION THEATRE II

★ ● ❍

Thursday, 11 December	16:30–17:25
Friday, 12 December	10:00–10:55
Saturday, 13 December	14:45–15:40

Room 201

Orangina "Naturally Juicy"
Fred & Farid
The Mill
United Kingdom

Qub
Guillaume Arvieu
William Boucher
Alexandre Colchen
Hugo Debat-Burkarth
Ecole Supérieure des Métiers Artistiques
France

Clothfighters
Gunnar Heiss
Kai-Florian Franke
Cristian Kaese
Karla L. Guameros Juarez
Wilhelm Schickard Institut für Informatik an der Universität Tübingen
Germany

The Girl Who Cried Flowers
Umesh Shukla
Auryn Inc.
USA

Bad Head Day
Karen Weiss
Sheridan College
Canada

Search And Destroy
Museum of New Zealand Te Papa Tongarewa
Animation Research Ltd
New Zealand

My Happy End
Milen Vitanov
HFF - University for Film and TV - Potsdam
Germany

Orb
Joe Takayama
University of Texas at Dallas
USA

Slip ON
GROOVISIONS
GRV Co., Ltd
Japan

Computer Animation Festival

SPECIAL PROGRAMME I

★ ● ❍

Thursday, 11 December 12:30–13:15
Friday, 12 December 15:45–16:30

Room 201

Ghost in the Shell: Promo Series
Junji Munekata
Synichi Yamamoto
OMNIBUS JAPAN Inc.
Japan

Monsieur Cok
Franck Dion
Papy3D Productions
France

Emily
Kim Leow
Sheridan College
Canada

The Evil Twin
Yun Wang
Taiwan

confine(S)
Makoto Yabuki
TANGRAM
Japan

MTV Our Noise
Fabio Berton
3dvision
Italy

Insight
Salvador Simo Busom
The Animation Workshop
Denmark

Finders Keepers
Robb Gibbs
Ringling College of Art and Design
USA

Speed Racer: Car Flip
Kevin Mack
Sony Pictures Imageworks
USA

Tarboy
James Lee
Edible Industries
Australia

Greenpeace Rainbow Warrior
Johannes Kuemmel
Filmakademie Baden-Württemberg
Germany

The Turtle and the Shark
Ryan Woodward
Brigham Young University
USA

SPECIAL PROGRAMME II

★ ● ❍

Thursday, 11 December 13:15–14:00
Saturday, 13 December 09:00–09:45

Room 201

Simulacra
Tatchapon Lertwirojkul
USA

Renkan
Nobuo Takahashi
Nagoya City University
Japan

Big Buck Bunny
Sacha Goedegebure
Blender Foundation
The Netherlands

Twisted
Heiko Schneck
Martin Tallosy
Filmakademie Baden-Württemberg
Germany

Distraxion
Mike Stern
USA

PHONE BRAVER 7
Takashi Miike
OLM Digital, Inc
Japan

Out to Play
Jessica Lozano
Ringling College of Art and Design
USA

Office Noise
Mads Johansen
Torben Søttrup
Karsten Madsen
Lærke Enemark
The Animation Workshop
Denmark

Chronos 1.0
Wassim Boutaleb
Yann Boyer
Vincent Mahé
Bruno Mangyoku
Gobelins, l'école de l'image
France

Descendants
Heiko van der Scherm
Patrick S. Cunningham
Filmakademie Baden-Württemberg
Germany

INVITED SCREENINGS:
BEST OF SIGGRAPH AWARD WINNERS

Winners from previous Computer Animation Festivals

★ ● ❍

Best of SIGGRAPH Award Winners 1
(1999-2004)

Thursday, 11 December 09:00–09:55
Saturday, 13 December 16:30–17:25
Room 201

Masks
SIGGRAPH 99 Jury Award
Piotr Karwas

Values
SIGGRAPH 2001 Best Animated Short
Van Phan
University of Southern California Film School

The Cathedral
SIGGRAPH 2002 Best Animated Short
Tomasz Baginski
Platige Image

Tim Tom
SIGGRAPH 2003 Jury Honors
Romain Segaud, Christel Pougeoise
Supinfocom/One Plus One

Eternal Gaze
SIGGRAPH 2003 Best Animated Short
Sam Chen

Ryan
SIGGRAPH 2004 Jury Honors
Chris Landreth
National Film Board of Canada

Birthday Boy
SIGGRAPH 2004 Best Animated Short
Sejong Park
Australian Film, Television and Radio School

Best of SIGGRAPH Award Winners 2
(2005–2006)

Thursday, 11 December 14:50–15:30
Friday, 12 December 11:35–12:15
Room 201

Cubic Tragedy
SIGGRAPH 2005 People's Choice–Electronic Theater
Ming-Yuan Chuan
National Taiwan University of Science and Technology

Fallen Art
SIGGRAPH 2005 Jury Honors
Tomasz Baginski
Platige Image

La Migration Bigoudenn
SIGGRAPH 05 Jury Honors
Eric Castaing, Alexandre Heboyan, Fafah Togora
Gobelins, l'école de l'image

9
SIGGRAPH 2005 Best of Show
Shane Acker
University of California, Los Angeles

458nm
SIGGRAPH 2006 Special Jury Honors
Jan Bitzer, Ilija Brunck, Tom Weber
Filmakademie Baden-Württemberg

One Rat Short
SIGGRAPH 2006 Best of Show
Alex Weil
Charlex

Best of SIGGRAPH Award Winners 3
(2007–2008)

Saturday, 13 December 15:40–16:30
Room 201

Dreammaker
SIGGRAPH 2007 Special Jury Honors
Leszek Plichta
Filmakademie Baden-Württemberg

En Tus Brazos
SIGGRAPH 2007 Award of Excellence
François-Xavier Goby, Edouard Jouret, Matthieu Landour
Supinfocom

Ark
SIGGRAPH 2007 Best of Show
Grzegorz Jonkajtys

Our Wonderful Nature
SIGGRAPH 2008 Well Told Fable
Tomer Eshed
Hochschule für Film und Fernsehen "Konrad Wolf"

Mauvais Rôle
SIGGRAPH 2008 Jury Award
Alan Barbier, Camille Campion, Dorian Fevrier, Frederic Fourier, Frederic Lafay, Min Ma, Jean-François Macem, Emanuel Reperant, Jeremie Rousseau, Olivier Sicot Esra Bretange

893
SIGGRAPH 2008 Best Student Prize
Eric Toubal, Yves D'Incau, Thomas Castellani, Clement Renaudin
Supinfocom Arles

Oktapodi
SIGGRAPH 2008 Best of Show
Julien Bocabeille, François Xavier Chanioux, Oivier Delabarre, Thierry Marchand, Quentin Marmier, Emud Mokhberi
Gobelins, l'école de l'image

INVITED SCREENINGS:
STUDIO AKA SPECIAL

★ ● ❍

Thursday, 11 December 14:00–14:50
Friday, 12 December 16:30–17:20
Saturday, 13 December 09:45–10:35

London-based Studio aka is an animation production company known internationally for its idiosyncratic and innovative work.

Room 201

"Varmints" Trailer
Marc Craste

Park Football
Grant Orchard

Family
Steve Small

Roddy
Grant Orchard

Pica Towers x 3
Marc Craste

Love Sport "Love Highdiving"
Grant Orchard

The Odd Couple–Elephant and Mouse
Mic Graves

Will the Summer Make Good for All of Our Sins?
Marc Craste

Heart
Philip Hunt

Love Sport "Love Ping Pong"
Grant Orchard

Seconds From Greatness
Marc Craste

Tackle
Grant Orchard

Welcome to Glaringly
Grant Orchard

Gi
Marc Craste

Road Monster
Philip Hunt

Redford (to Music by Sufjan Stevens)
Grant Orchard

There's Static in my Belly
Grant Orchard

The Big Win
Marc Craste

Love Sport "Love Paintballing"
Grant Orchard

Jojo in the Stars
Marc Craste

Computer Animation Festival

INVITED SCREENINGS:
SCHOOL VS. SCHOOL

★ ● ❍

School Showcase of promising student work:
Gobelins, l'école de l'image
Korea National University of Arts
Supinfocom

Gobelins, l'école de l'image

Friday, 12 December 14:10–14:55
Saturday, 13 December 11:30–12:15
Room 201

La Migration Bigoudenn (Bigoudenn Migration)
Eric Castaing, Alexandre Heboyan, Fafah Togora

The Building
Marco Nguyen, Pierre Perifel, Xavier Ramonede, Olivier Staphylas

Gnap Gnap
Olivier Daube, Sonia Desmichelis, Wilfried Pain, Bertrand Piocelle, Jean-Vincent Sales

Super Tibetan Racer
Christelle Abgrall, Anaïs Chevillard, Bernard Ling, Kosal Sok, Jun Violet

Sebastien
Carole Carrion, Geneviève Godbout, Mourad Seddiki, Samuel Wambre

Pyrats
Yves Bigerel, Bruno Dequier, Benjamin Fiquet, Nicolas Guéroux, Julien Le Rolland

Cocotte-Minute (Pressure Cooker)
Thibault Berard, Sylvain Marc, Loïc Miermont, Amandine Pecharman, Nathalie Robert, Romain Vacher

Burning Safari
Vincent Aupetit, Florent de la Taille, Jeanne Irzenski, Maxime Maléo, Aurélien Predal, Claude-William Trebutien

The Omen (Le Presage)
Simon Rouby

Au Bout Du Fil (At the End of the String)
Amandine Pecharman

La Soupe A L'engrais (Fertilizer Soup)
Sylvain Marc

Anima Facta Est
Lucie Arnissolle, Mael Gourmelen, Leah Ordonia, Celia Riviere, Stephen Vuillemin

Chronos 1.0
Wassim Boutaleb, Yann Boyer, Vincent Mahé, Bruno Mangyoku

Emile and the Fabulous Small Gentlemen (Emile et les fabuleux petits monsieurs)
Jean Nicolas Arnoux, Tom Haugomat, Charles-André Lefebvre, Louis Tardivier

Keep Walking
Sophia Chevrier, Cécile Francoia, Antonin Herveet, Leah Ordonia, Carlo Vogele

For Sock's Sake
Carlo Vogele

Blind Spot
Johanna Bessiere, Nicolas Chauvelot, Olivier Clert, Cécile Dubois Herry, Yvon Jardel, Simon Rouby

Crash-Test
Didier Ah-Koon, Olivier Dusart, Agnes Fouquart, Etienne Mattera, Gaelle Rouby-Serieis, Carlo Toselli, Martin Trystram

Voodoo
Romain Baudy, Ludovic Bouancheau, Liane-Cho Han, Yann Le Gall, Marietta Ren, Sebastien Wojda

Oktapodi
Julien Bocabeille, François-Xavier Chanioux, Olivier Delabarre, Thierry Marchand, Quentin Marmier, Emud Mokhberi

INVITED SCREENINGS:
SCHOOL VS. SCHOOL (CONTINUED)

★ ● ❍

Korea National University of Arts (K'ARTS)

Friday, 12 December 14:55 –15:45
Saturday, 13 December 12:15–13:05
Room 201

A Cat and I
Dong-Hee An

Everybody Lonely Star
Byung-a Han

Walking in the Rainy Day
Hyeon-myeong Choi

Bob Mook Ja
Sung-A Min

Look Around
Kyu-tae Lee

The Watermelon Chickens
Jong-shik Won

Supinfocom

Friday, 12 December 10:55–11:35
Saturday, 13 December 13:05–13:45
Room 201

Overtime
Oury Atlan, Thibaut Berland, Damien Ferrié

Clik Clak
Aurélie Frehinos, Victor-Emmanuel Moulin, Thomas Wagner

Versus
Françis Caffiaux, Romain Noel, Thomas Salas

Camera Obscura
Matthieu Buchalski, Jean-Michel Drechsler, Thierry Onillon

Bolides
Françis-Xavier Bologna, Théphile Bondoux, Lyonel Charmette, Vincent Le Ster

Marin
Alexandre Bernard, Pierre Pages, Damien Laurent

INVITED SCREENINGS:
AUSTRALIAN PANORAMA—TASTING THE DIVERSITY OF AUSTRALIAN ANIMATION

★ ● ❍

Thursday, 11 December 09:55–10:40
Room 201

Australian animation is recognised for its diversity and inventiveness. This screening presents Australian animation trends in various techniques, genres, and styles.

Morning Star
Michael Amos
Andrew Davies
Studio Moshi

Gustavo
Jonathan Nix

An Unusual Circumstance
Hung Lin

Carnivore Reflux
Eddie White
James Calvert
The People's Republic Of Animation

Fraught
Stephanie Brotchie
Maia Tarrel
Chris Pahlow

The Goat That Ate Time
Lucinda Schreiber

The Passenger
Chris Jones

INVITED SCREENINGS:
INDIA FOCUS

★ ● ❍

Friday, 12 December 17:20–17:40
Room 201

Exploring the landscape of the new Indian animation.

Happy Planet
Dhimant Vyas
Tata Interactive Systems

Killing the Fittest
Santosh D. Kale
Underground Worm

Happy Dusshera
Kavita Singh Kale
Underground Worm

Levis Slim
E. Suresh
Famous House of Animation

MTV Cut2Cut
E. Suresh
Famous House of Animation

O'
Kireet Khurana
Climb Media (I) Pvt. Ltd.

Sulekha.com
E. Suresh
Famous House of Animation

INVITED SCREENINGS:
JAPAN MEDIA ARTS FESTIVAL SHOWCASE

Award-winning works from the 11th Japan Media Arts Festival.

★ ● ❍

Saturday, 13 December 10:35–11:30
Room 201

Opening Visual Image
Harada Daizaburo

Issey Miyake A-Poc Inside
Masahiko Sato + Euphrates

Musashino Plateau
Takahashi Nobuo

20010218-20060218
Fujii Shiro

Electric Life Line
Kosakai Shogo

Shatter
Nakama Kouhei

Winning Eleven
Yokozawa Koichiro

Ryukyudisko/Nice Day, featuring Beat Crusaders
Ryukyudisko/Kojima Junji

Lost Utopia
Mizue Mirai

Magnetic UFO
Nishimi Shojiro

The Black Bear Cub and the Forest Train
Tanaka Usagi

After School Midnight
Takekiyo Hitoshi

TALKS & PANELS

★ ● ❍

Thursday, 11 December	15:45–17:30
Friday, 12 December	13:00–13:40
Friday, 12 December	15:45–17:30

"Star Wars: The Clone Wars" –Telling the Story on Multiple Platforms
Thursday, 11 December
15:45–17:30
Theatre

The galaxy far, far away takes on both the small screen and the NDS platform with the release of the CG-animated TV series "Star Wars: The Clone Wars" and the game Star Wars: the Clone Wars: Jedi Alliance. Both are produced at Lucasfilm Animation Singapore, in conjunction with Lucasfilm Animation and LucasArts.

Lee Stringer and Matt Aldrich discuss the convergence
involved in creating the show and the game, and how assets were shared between the two.

The session includes a question-and-answer session and
a sneak preview of one act from an episode of "Star Wars: The Clone Wars."

Matt Aldrich
Art Director, Games
Lucasfilm Animation Singapore

Lee Stringer
CG Supervisor,
"Star Wars: The Clone Wars"
Lucasfilm Animation Singapore

"KUDAN": Rediscovery of the Fun of Working With 3D
Friday, 12 December
13:00–13:40
Room 201

The producer summarises the production process for the 3D animation short "KUDAN", which is featured in the Electronic Theatre. The talk reviews the animation's production history, the animators' point of view and methodology, and how the design was influenced by traditional Japanese production techniques.

Takashi Fukumoto
Links DigiWorks Inc.

Challenges for High-Quality Production and Training of Staff in Asia
Friday, 12 December
15:45–17:30
Theatre

This panel looks at different approaches to setting up a new studio in Asia and generating high-quality output. Topics include: the challenges of knowledge and technology transfer to Asian staff and studio, handling an international production team spanning across the globe in different time zones, mentorship and training, and how to grow a local CG community and high-quality talent pool.

MODERATOR
Shuzo John Shiota
Polygon Pictures

PANELISTS

Saraswathi Balgam
Rhythm & Hues India

Tim Cheung
Imagi Studios

John Sanders
Lucasfilm Animation Singapore

Tim Smith
Lucasfilm Animation Singapore

Computer Animation Festival

SCHEDULE AT A GLANCE

ElectronicTheatre: ★ ●

Animation Theatre/Special Programme/Invited Screenings/Talks & Panels: ★ ● ❍

Thursday, 11 December

Theater	Room 201
	09:00–09:55 Best of SIGGRAPH Award Winners 1 (1999-2004)
	09:55–10:40 Australian Panorama
	12:30–13:15 Special Programme I
	13:15–14:00 Special Programme II
	14:00–14:50 Studio aka Special
	14:50–15:30 Best of SIGGRAPH Award Winners 2 (2005–2006)
	15:30–16:30 Animation Theatre I
15:45–17:30 Talks & Panels: Star Wars: The Clone Wars	**16:30–17:25** Animation Theatre II
19:00–21:00 Electronic Theatre Screening & Awards Winner Announcement	

Friday, 12 December

Theater	Room 201
	09:00–10:00 Animation Theatre I
	10:00–10:55 Animation Theatre II
	10:55–11:35 School vs. School: Supinfocom
	11:35–12:15 Best of SIGGRAPH Award Winners 2 (2005-2006)
	13:00–13:40 Talks & Panels: "KUDAN" Rediscovery of fun of working with 3D
	14:10–14:55 School vs. School: Gobelins, l'école de l'image
	14:55–15:45 School vs. School: Korea National University of Arts
15:45–17:30 Talks & Panels: Challenges for High Quality Production and Training of Staffing in Asia	**15:45–16:30** Special Programme I
	16:30–17:20 Studio aka Special
	17:20–17:40 India Focus
19:00–21:00 Electronic Theatre Screening	

Saturday, 13 December

Theater	Room 201
	09:00–09:45 Special Programme II
	9:45–10:35 Studio aka Special
	10:35–11:30 Japan Media Arts Festival Showcase
	11:30–12:15 School vs. School: Gobelins, l'école de l'image
	12:15–13:05 School vs. School: Korea National University of Arts
	13:05–13:45 School vs. School: Supinfocom
	13:45–14:45 Animation Theatre I
	14:45–15:40 Animation Theatre II
	15:40–16:30 Best of SIGGRAPH Award Winners 3 (2007–2008)
16:00–18:00 Electronic Theatre Screening Matinee	**16:30–17:25** Best of SIGGRAPH Award Winners 1 (1999-2004)
19:00–21:00 Electronic Theatre Screening	

★ ● ❍

Days & Hours

Wednesday, 10 December	18:00–20:00
Thursday, 11 December	15:45–17:30
Friday, 12 December	15:45–17:30
Saturday, 13 December	10:30–12:15

Full Conference and One Day Full Conference attendees with a valid ticket for the day of the respective special session have first right of entrance to sessions marked with an asterisk (*).

LOCATION: THEATRE

Special Sessions

Technical Papers & Sketches Fast Forward Sessions*

Wednesday, 10 December
18:00–20:00

ACM SIGGRAPH's first back-to-back Technical Papers & Sketches Fast Forward Sessions. Get a preview of the latest research in computer graphics and interactive techniques and select the Technical Papers and Sketches that you need to attend later in the week.

Star Wars: The Clone Wars– Telling the Story on Multiple Platforms

Thursday, 11 December
15:45–17:30

The galaxy far, far away takes on both the small screen and the NDS platform with the release of the CG-animated TV series "Star Wars: The Clone Wars" and the game Star Wars: the Clone Wars: Jedi Alliance. Both are produced at Lucasfilm Animation Singapore, in conjunction with Lucasfilm Animation and LucasArts.

Lee Stringer and Matt Aldrich discuss the convergence involved in creating the show and the game, and how assets were shared between the two.

The session includes a question-and-answer session and a sneak preview of one act from an episode of "Star Wars: The Clone Wars."

Matt Aldrich
Art Director, Games
Lucasfilm Animation Singapore

Lee Stringer
CG Supervisor,
"Star Wars: The Clone Wars"
Lucasfilm Animation Singapore

Challenges for High-Quality Production and Training of Staff in Asia

Friday, 12 December
15:45–17:30

This panel looks at different approaches to setting up a new studio in Asia and generating high-quality output. Topics include: the challenges of knowledge and technology transfer to Asian staff and studio, handling an international production team spanning across the globe in different time zones, mentorship and training, and how to grow a local CG community and high-quality talent pool.

MODERATOR
Shuzo John Shiota
Polygon Pictures

PANELISTS
Saraswathi Balgam
Rhythm & Hues India

Tim Cheung
Imagi Studios

John Sanders
Lucasfilm Animation Singapore

Tim Smith
Lucasfilm Animation Singapore

Balancing Act: Blending Left-Brain and Right-Brain Thinking in Solving the Complex Visual Effects Equation*

Saturday, 13 December
10:30–12:15

Companies like Industrial Light & Magic have found success by understanding the importance of blending creative and scientific thinking, and developing good management practices for both. While technical and artistic might seem to be intrinsically separate processes, in visual effects they are highly dependent on each other to put the most realistic imagery on the screen. Using examples from "Indiana Jones and the Kingdom of the Crystal Skull," "Transformers," and "The Chronicles of Narnia: The Lion, the Witch and the Wardrobe," this talk takes an in-depth look at the challenges each show faced and details how ILM blends left-brain and right-brain thinking to overcome them.

Jeff White
Associate Visual Effects Supervisor
Industrial Light & Magic

★

Days & Hours

Friday, 12 December 19:00

LOCATION: MARINA BARRAGE

Busing from Suntec International Convention and Exhibition Centre to Marina Barrage will be provided.

Buses will be leaving from the Convention Centre between 18:45 to 19:30. Please proceed to the Lobby at Level 1. Buses leaving from the Marina Barrage back to the Convention Centre will be available from 21:00 onwards.

Reception

Get together with the SIGGRAPH Asia 2008 community and enjoy a panoramic view of the Singapore skyline from Marina Barrage, the site of Singapore's first downtown fresh-water reservoir. Greet old friends, share a toast with colleagues, and meet the thinkers from Asia and around the world who are shaping the future of computer graphics and interactive techniques.

Supported by:

★ ● ❍ E

Days & Hours

Thursday, 11 December	08:30–17:30
Friday, 12 December	08:30–17:30
Saturday, 13 December	08:30–17:30

International Resources

Learn how the industry is evolving worldwide and collaborate with attendees from five continents. The International Center offers bilingual tours of SIGGRAPH Asia 2008 programmes, informal translation services, and space for meetings, talks, and demonstrations. Throughout the year, the International Resources program facilitates worldwide collaboration in the SIGGRAPH community, provides an English Review Service to help submitters whose first language is not English, and encourages participation in all conference venues, activities, and events.

International Resources Committee

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Language: English

Scott Lang
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Language: English

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Universidade Federal do Rio de Janeiro
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Arctic Region Supercomputing Center, University of Alaska Fairbanks
Languages: Japanese, English

Dongho Kim
Soongsil University
Languages: Korean, English

Wobbe Koning
Montclair State University
Languages: Dutch, German, English

Patrick Marais
University of Cape Town
Languages: English, Afrikaans

Marilenis Olivera
Stanford University
Languages: Spanish, English

EVENTS

Chapters Start-up Meeting

Friday, 12 December
12:15–13:30
SIGGRAPH Village, Hall 401

The Professional and Student Chapters of ACM SIGGRAPH span the globe. Within their local areas, chapters continue the work of ACM SIGGRAPH on a year-round basis via their meetings and other activities. Each chapter consists of individuals involved in education, research and development, the arts, industry, and entertainment who are interested in the advancement of computer graphics and interactive techniques, related technologies, and their applications. Chapter members gather throughout the year at meetings, site visits, conferences, video screenings, art shows, and special events.

This session explains how to start and run a successful ACM SIGGRAPH Professional or Student Chapter. Topics regarding the process are outlined in detail by members of the Chapters Committee, and the session concludes with a Q&A session.

Scott Lang
International Resources Committee Co-chair
scott_lang@siggraph.org

SIGGRAPH Asia 2009 Get Involved Session

Friday, 12 December
17:00–17:45
SIGGRAPH Village, Hall 401

Would you like to make a difference? The opportunity awaits you at SIGGRAPH Asia 2009 in Yokohama, Japan. Come and speak to the programme chairs, get more information, and say "yes" to an exciting and fulfilling experience. Don't miss it! Visit us at our booth in the SIGGRAPH Village, Hall 401.

Daniel Schmidt
SIGGRAPH Asia Conference Manager
daniel_schmidt@siggraph.org

★ ● ❍

Days & Hours

Thursday, 11 December	09:30–18:30
Friday, 12 December	09:30–18:30
Saturday, 13 December	09:30–18:30

LOCATION: HALL 401/402

Job Fair

JOBSEEKERS! Visit the Job Fair to meet with employers from the region and around the globe! Participating studios will be looking for the best "right brain" talent to fill a host of positions such as Artists, Animators, Programmers, Game Designer, Tech Directors and many more! Stop by and find the "right job" for YOUR brain!

Careers@Singapore Pavilion
Singapore
BOOTHS 3 & 4

CreativeHeads.net
Los Angeles, California USA
BOOTH 11

Double Negative Visual Effects
London, United Kingdom
BOOTH 5

Dr. D Studios
Sydney, Australia
BOOTH 2

Sheridan Institute of Technology
& Advanced Learning
Ontario, Canada
BOOTH 12

Ubisoft Group
Singapore
BOOTHS 6 & 7

★ ● ❍ E

Days & Hours

Friday, 12 December 17:00–17:45

LOCATION: SIGGRAPH VILLAGE, HALL 401

SIGGRAPH Asia 2009 Get Involved

Would you like to make a difference? You can if you get involved with SIGGRAPH Asia 2009 in Yokohama, Japan. Come and speak to the programme chairs, get more information, and say "yes" to an exciting and fulfilling experience. Complete information is also available throughout the conference at the SIGGRAPH 2009 booth, Hall 401.

For enquiries, contact:
Daniel Schmidt
SIGGRAPH Asia Conference Manager
daniel_schmidt@siggraph.org

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ACM SIGGRAPH Cooperative Agreements

The following societies have cooperative agreements with ACM SIGGRAPH:

Annecy
www.annecy.org
Annecy has been showcasing the very best in animation for over 45 years, making it the industry's leading international competitive festival. Its presentation and promotion of animation in all its different forms has made Annecy a worldwide point of reference for the animation industry.

China Cartoon Industry Forum (CCIF)
www.ccif.com.cn
Supported by the Chinese government, CCIF was founded by the Cartoon Commission of the China TV Artists Association. As the most influential Chinese animation conference, CCIF promotes industrialisation, internationalisation, and market development. It operates two projects: the Asian Youth Animation & Comics Contest and the China Animation & Comics Game. The youth contest is positioned to be the top annual award for Asian original animation and comics. The game project is building an animation-training system to provide vocational animation and comics training courses.

Computer Graphics Arts Society (CG-ARTS)
www.cgarts.or.jp
CG-ARTS, officially recognised by the Ministry of Education, Culture, Sports, Science and Technology in 1992, is a publicly funded body dedicated to promoting Japanese computer graphics education. Its projects range from drafting curricula to development and publication of teaching materials, nurturing instructors, and providing certification tests to evaluate the ability of each individual. It is also dedicated to developing a distinctive Japanese media-arts culture in the 21st century by hosting the Computer Graphics Contest for Students since 1995 and co-organizing the Japan Media Arts Festival in conjunction with the Agency for Cultural Affairs since 1996.

Digital Content Association of Japan (DCAJ)
www.dcaj.org/outline/english/index.html
DCAJ is a non-profit organisation supported by companies and approved by the Japanese Government to promote the digital-content industry. It presents the Digital Content Expo (DC EXPO) in Tokyo in October every year in cooperation with the Ministry of Economy, Trade and Industry (METI).

Eurographics
www.eg.org
The European Association for Computer Graphics is a professional association that assists members with their work and careers in computer graphics and interactive digital media. Eurographics has members worldwide and maintains close links with developments in the USA, Japan, and other countries by inviting speakers from those countries to participate in Eurographics events and by sending representatives to other events. Eurographics 2009 will be held at the Technischen Universität München, 30 March – 3 April 2009.

fmx/09 – 14th International Conference on Animation, Effects, Games, and Digital Media
www.fmx.de
At fmx/09, international speakers provide insight into creation, production, and distribution of digital entertainment, and discuss innovative approaches in the industry and research. Numerous panels, workshops, and presentations draw a discerning audience, two-thirds of whom are professionals, while one-third is made up of students. In an open atmosphere and casual encounters, top industry players present their latest achievements, hardware and software companies demonstrate their innovations, recruiters search for new talent, and schools and universities feature their programs and graduates. fmx/09 takes place in Stuttgart, Germany, 5-9 May 2009.

IMAGINA
www.imagina.mc
IMAGINA, at the Grimaldi Forum in Monte-Carlo, 4-6 February 2009, is the major European 3D Community Event, centered on solutions that assist in designing and reaching decisions through visualisation and simulation.

Laval Virtual
www.laval-virtual.org
The 11th International Conference on Virtual Reality will be held on 22-26 April 2009, in Laval, France. Laval Virtual is where virtual reality users share the latest techniques from their fields of expertise.

Seoul International Cartoon & Animation Festival (SICAF)
http://www.sicaf.org
SICAF focuses on the dynamic new-media environment and presents current trends in cartoons and animation through its exhibition, animated film festival, and SPP Market.

VIEW Conference
www.viewconference.it
The VIEW Conference is Italy's premier international event on computer graphics, interactive techniques, animation and VFX, design, and videogames. VIEW presents the most up-to-date insights from world-class experts through lectures, meetings, tributes, exhibits, screenings, and demo presentations.

Chinal National Center for Developing Animation, Cartoon & Game Industry (NCACG)
www.ncacg.org
The China National Center for Developing Animation, Cartoon & Game Industry (NCACG) is the first organisation approved by the Ministry of Culture of the People's Republic of China. NCACG is composed of the Culture Research Center of the Chinese Academy of Social Science, East China Normal University, Shanghai Broadband Television Co., Ltd., and Beijing Shengshi JinYing International Media Co., Ltd. Following the direction of the Chinese government, NCACG strives to combine education, research, training, and the latest techniques, domestic or international, with industrial production, and explore a Chinese mode of promoting creative cultural and industrial activities to serve and lead ACG industries in China. The 5th China International Animation, Cartoon & Game Fair will be held 3-6 July 2009 in Shanghai.

Next December, thousands of researchers, developers, and producers of computer graphics and interactive techniques will descend upon Yokohama for the second SIGGRAPH Asia.

3D modeling and rendering by Yuko Oda and Brian Cannady

Creative City Yokohama

Creative City Yokohama

Yokohama's emphasis on creativity as its foundation for sustainable growth has made the city a thriving center of information technology, digital media, and the arts. Exhibitors of the world's leading products and services in computer graphics and interactive techniques will find the perfect marketing environment at SIGGRAPH Asia 2009.

Submission details available in March. Register online in August.

To reserve exhibit space, contact:

INTERNATIONAL EXHIBITORS
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mabel_neo@siggraph.org

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ACM SIGGRAPH Organisation Overview

ACM SIGGRAPH

In the span of 35 years, ACM SIGGRAPH has grown from a handful of computer graphics enthusiasts to a diverse group of researchers, artists, developers, filmmakers, scientists, and other professionals who share an interest in computer graphics and interactive techniques. Our community values excellence, passion, integrity, volunteerism, and cross-disciplinary interaction. We sponsor not only the annual SIGGRAPH conference and SIGGRAPH Asia, but also focused symposia, chapters in cities throughout the world, awards, grants, educational resources, online resources, a public policy programme, and the SIGGRAPH Video Review.

Membership

The SIGGRAPH community depends on your support. Help us continue our global efforts in education, communications, and advocacy by joining ACM SIGGRAPH for US $35 per year (US $25 per year for students, US $40 for Pioneers, and US $28 for Eurographics members). Become an ACM SIGGRAPH member and receive a siggraph.org email alias, access to the archive of SIGGRAPH Proceedings in the ACM Digital Library, Computer Graphics e-Quarterly, discounted registrations on ACM SIGGRAPH sponsored programmes and events including the annual SIGGRAPH and SIGGRAPH Asia conferences and partner conferences such as Eurographics, as well as discounts on publications and preferred vendor deals on valuable merchandise. For more details on membership or to join online, visit www.siggraph.org and select "Membership."

For those of you who are already members, thank you for your continued and loyal support.

ACM

ACM SIGGRAPH's parent organisation is ACM, the Association for Computing Machinery. ACM is the world's largest educational and scientific computing society, uniting educators, researchers, and professionals to inspire dialogue, share resources, and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking. Many ACM SIGGRAPH members also join ACM.

The benefits of ACM membership include full access to online books and courses, the ACM Career & Job Center, subscriptions to ACM's popular email alert news digests TechNews and CareerNews, and the online newsletter MemberNet. ACM members may subscribe to the Digital Library and receive full access to the Guide to Computing Literature, which features more than one million bibliographic citations from the vast world of computing. ACM members also receive discounts on cutting-edge magazines, journals, books, and conferences.

For more information, visit: www.acm.org.

Awards

ACM SIGGRAPH awards the prestigious Steven A. Coons award for lifetime achievement, the Computer Graphics Achievement Award for notable achievements, the Outstanding

Service Award for extraordinary service to ACM SIGGRAPH by a volunteer, and the Significant New Researcher Award, for new contributors to our field. Beginning in 2009, SIGGRAPH will also award the Distinguished Artist Award for lifetime achievement in digital art.

For a list of past award recipients, visit: www.siggraph.org/awards.

Education Committee

The ACM SIGGRAPH Education Committee works to support computer graphics education as well as the use of computer graphics in education. Computer graphics education encompasses technical, creative, and developmental studies in curricular areas ranging from computer science to digital arts. The Education Committee undertakes a broad range of projects and activities in support of the CG education community, such as curriculum studies, resources for educators, and SIGGRAPH conference-related activities. This includes the international, juried SpaceTime Student Competition & Exhibition and much more.

For more information, please visit: education.siggraph.org.

Digital Arts Community

The ACM SIGGRAPH Digital Arts Community committee serves to foster the evolution of a strong digital arts community within the international organisation and to promote a dialogue between visual artists and the larger SIGGRAPH community. One of its main projects is the creation of a content-rich interactive Arts Portal, arts.siggraph.org, to provide a central place for artists to share resources, information, artwork, and opportunities, and provide a practical way for all ACM SIGGRAPH members to follow developments in the arts, stay connected, and identify potential collaborators.

For more information, visit: arts.siggraph.org.

External Relations Committee

ACM SIGGRAPH has agreements with a number of organisations and conferences around the world. To see the list of current affiliations or to inquire about what is involved in entering into such a relationship, stop by the ACM SIGGRAPH Membership booth or visit: www.siggraph.org/affiliations.

ACM SIGGRAPH Organisation Overview (continued)

Professional & Student Chapters
Chapters of ACM SIGGRAPH exist in 65 cities in 16 countries around the world. They form an international multi-cultural network of people who develop, share, continue, and extend the work and achievements presented at the annual conference. Chapter members include those involved in research, development, education, art, gaming, visualisation, and entertainment, just to name a few.

For more information about the ACM SIGGRAPH network of chapters, or if you would like to start a Professional or Student Chapter, visit: www.siggraph.org/chapters.

Publications
ACM SIGGRAPH publications provide the world's leading forums for computer graphics research. Our conference series provides the largest source of citations in computer graphics literature.

Publications are available to ACM SIGGRAPH members for substantial discounts.

See: www.siggraph.org/publications

Small Conferences and Symposia
ACM SIGGRAPH helps organise and sponsor focused conferences, workshops, and other symposia around the world on topics related to computer graphics and interactive techniques. These gatherings enable groups with specific interests to get together and exchange information.

To see the list of symposia or find out how to get help for a conference you'd like to organise, stop by the ACM SIGGRAPH Membership booth or visit: www.siggraph.org/conferences.

SIGGRAPH Asia 2008 Video Review (SVR)
SVR is the world's most widely circulated video-based publication. Over 160 programmes document the annual SIGGRAPH Computer Animation Festivals, providing an unequaled opportunity to study state-of-the-art computer graphics techniques, theory, and applications. New releases and recent issues available in DVD format. To purchase the SIGGRAPH Asia 2008 Video Review visit the Merchandise Store at the Suntec Singapore International Convention & Exhibition Centre located in Gallery East, Level 3.

For more information, contact: svrorders@siggraph.org.

SIGGRAPH 2009
Interested in participating in the SIGGRAPH 2009 Conference to be held in New Orleans, Louisiana, 3–7 August 2009 as a presenter or volunteer? Stop by our booth in the SIGGRAPH Village, Hall 401.

www.siggraph.org/s2009

Volunteers
All of the programmes developed by ACM SIGGRAPH rely heavily on volunteer support.

As a member, you are eligible to serve in some of ACM SIGGRAPH's most visible positions, including leading a professional chapter, chairing the annual conference, or serving on the ACM SIGGRAPH Executive Committee. For more information, see: www.siggraph.org/gen-info/volunteerpositions.html.

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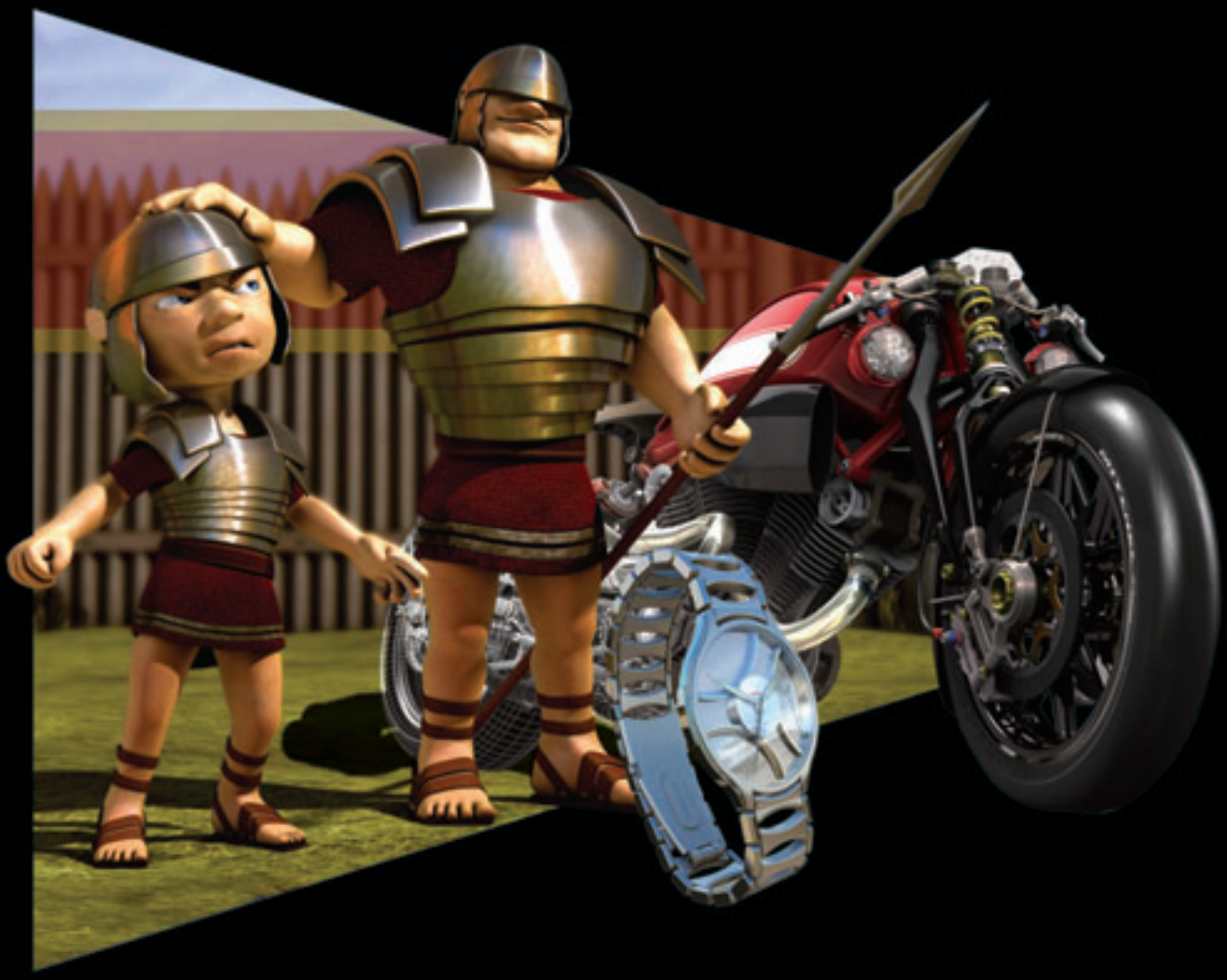

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Get the power, performance and reliability you need to bring your design vision to life by visiting with ATI and its technology partners at ATI Booth #G01.

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AMD

Images produced by Will Burdett at the University of Hertfordshire, ATI & Lumiscaphe.

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Days & Hours

Thursday, 11 December	09:30–18:30
Friday, 12 December	09:30–18:30
Saturday, 13 December	09:30–18:30

LOCATION: HALL 401/402

Exhibition

A diverse, energetic showcase of everything Asia and beyond have to offer in computer graphics and interactive techniques, from hardware and software developers, production studios, and venture capitalists to government pavilions hosting the established and emerging companies that are shaping the future of digital media. Discover all the products and services you need for another year of creative achievement. Try the latest systems, talk with the people who developed them, and get all the information you need to make budget and purchase decisions.

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Digital Cameras
Digital Video Hardware
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Haptic Input Devices
Hardcopy Devices; Photographs/Slides
Head-Mounted Displays
High-Performance Graphics Processors
High-Resolution Technologies
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Monitors and Displays
Motion-Capture Equipment
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Networking Equipment
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Scanners
Storage Devices; Tape/Disk
Terminals, Monitors, and Displays
Video-Effects Equipment
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Services

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Publications

Software

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3D Modelling
Aerospace and Automotive Applications
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Business and Financial Graphics
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Commercial Game Engines
Computer-Video Interfacing
Data Analysis
Desktop Publishing
Desktop Video Production Software
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Unveiling the Secrets Behind 3D Real-Time Virtual Reality

FORUM8 Co., Ltd

Thursday, 11 December
11:00–12:00

UC-win/Road, an award-winning 3D state-of-the-art, real-time virtual reality solution, allows integration of 3D city models with traffic and environmental variations. This session showcases the Digital Phoenix project, an academic research project at Arizona State University, which uses this platform to create a square mile visualisation of downtown Phoenix, integrating more than 500 buildings and 100 intersections in an interactive VR environment. Navigating through the environment enhances one's understanding and allows for improved evaluation and comparison studies. Yoshihiro Kobayashi of Arizana State University shares various modelling tips and techniques, and discusses future applications.

Are limitations on Power, Cooling, Physical Space an issue in your IT Infrastructure ? IBM solves your problem with iDataplex–the next-generation internet-scale computing solution.

IBM Singapore Pte Ltd

Thursday, 11 December
13:30–15:00

In the era of high-definition video and content on demand, the next generation of digital media creators and distributors will require more compute power than ever before. At the same time, the digital media marketplace is becoming more competitive, driving the need for greater efficiency and flexibility. IBM digital media solutions are designed to help the digital media community transcend business and technical challenges and restore creative liberty.

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Conquering Production Challenges With Houdin

Side Effects Software

Friday, 12 December
10:30–12:00

For years, 3D animators, visual effects artists and technical directors have turned to Houdini to tackle a wide range of production challenges. In this technical presentation, David Robert from Side Effects Software shows you how Houdini's recent UI overhaul, world-class particles, powerful integrated dynamics, and interoperability tools like FBX and Python, make Houdini the perfect choice for your CG pipeline. He demonstrates how Houdini has been used in real-life production situations by both Hollywood studios and smaller boutique shops who want to raise their game and produce film-quality effects and animation. You will see for yourself how Houdini's renowned node-based workflow provides a production-savvy approach that gives artists ultimate creative control, while allowing studios to manage costs and meet deadlines.

Developing 3D In-Building Web Applications With Germanium

G Element Pte Ltd

Friday, 12 December
13:15–15:00

With the rapid increase in web mapping applications, users are now able to freely visit cities all over the globe, find places and information, and share information with their friends. However, existing platforms and applications limit users to building exteriors. They do not allow users to enter buildings. Enter Germanium, a new platform for easily creating 3D in-building web applications. Learn how Germanium can help you develop solutions such as building directories, asset-tracking solutions, and building-management solutions, all deployed on the web and rendered in real time 3D within the web browser. This session is intended for anyone interested in creating in-building web applications. It includes a product presentation and a live demonstration.

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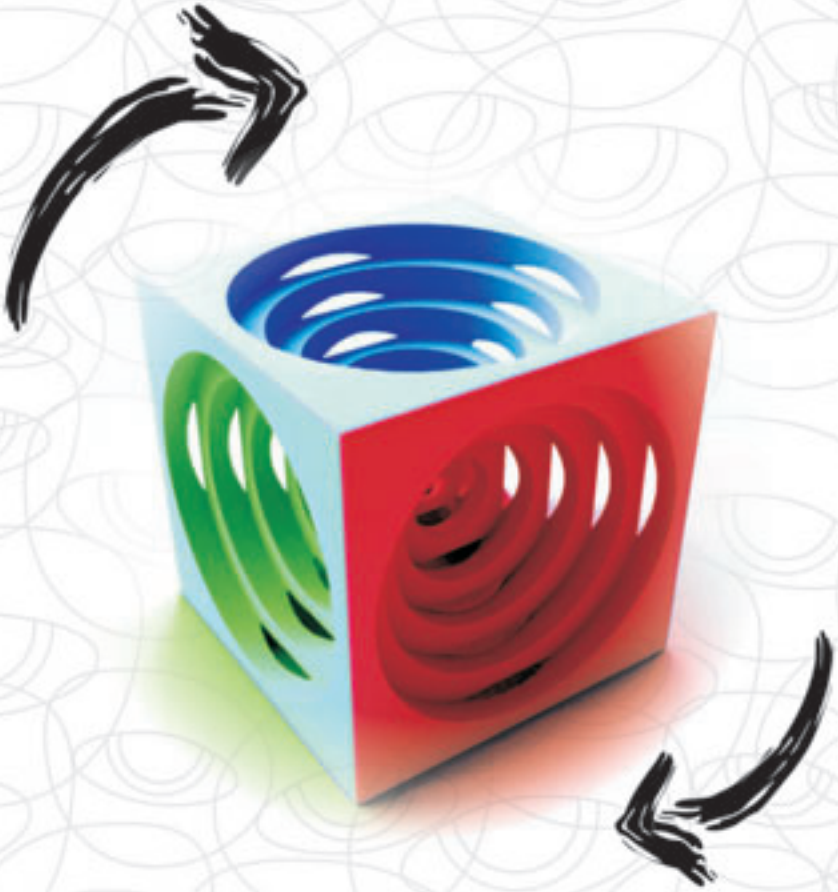

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Exhibitor Sessions

Autodesk Education Summit

Wednesday, 10 December
08:00–12:00
Room 311

Join high-profile industry professionals and Autodesk representatives for an exclusive, half-day event to discuss key industry trends and the best methods to prepare students for success in the professional media industry. The event features a keynote by Barry Weiss, Senior Vice President, Animation and Artist Development, at Sony Pictures Imageworks. Weiss is an animation producer and executive, with extensive experience in feature film, visual effects, and television animation production. His global responsibilities also include developing the studio's next-generation talent base.

Autodesk Professional Excellence (APEX) Launch Event

Friday, 12 December
08:00–09:00
Room 207

Come hear about the exciting launch of Autodesk's new line of programmes for professional instructors. Autodesk Professional Excellence (APEX) provides instructors with a range of opportunities to remain current with 3D software and technology trends. Through APEX, instructors can obtain globally recognized accreditation, connect with peers, receive practical, focused training, and even find new career opportunities. Light breakfast and coffee are served.


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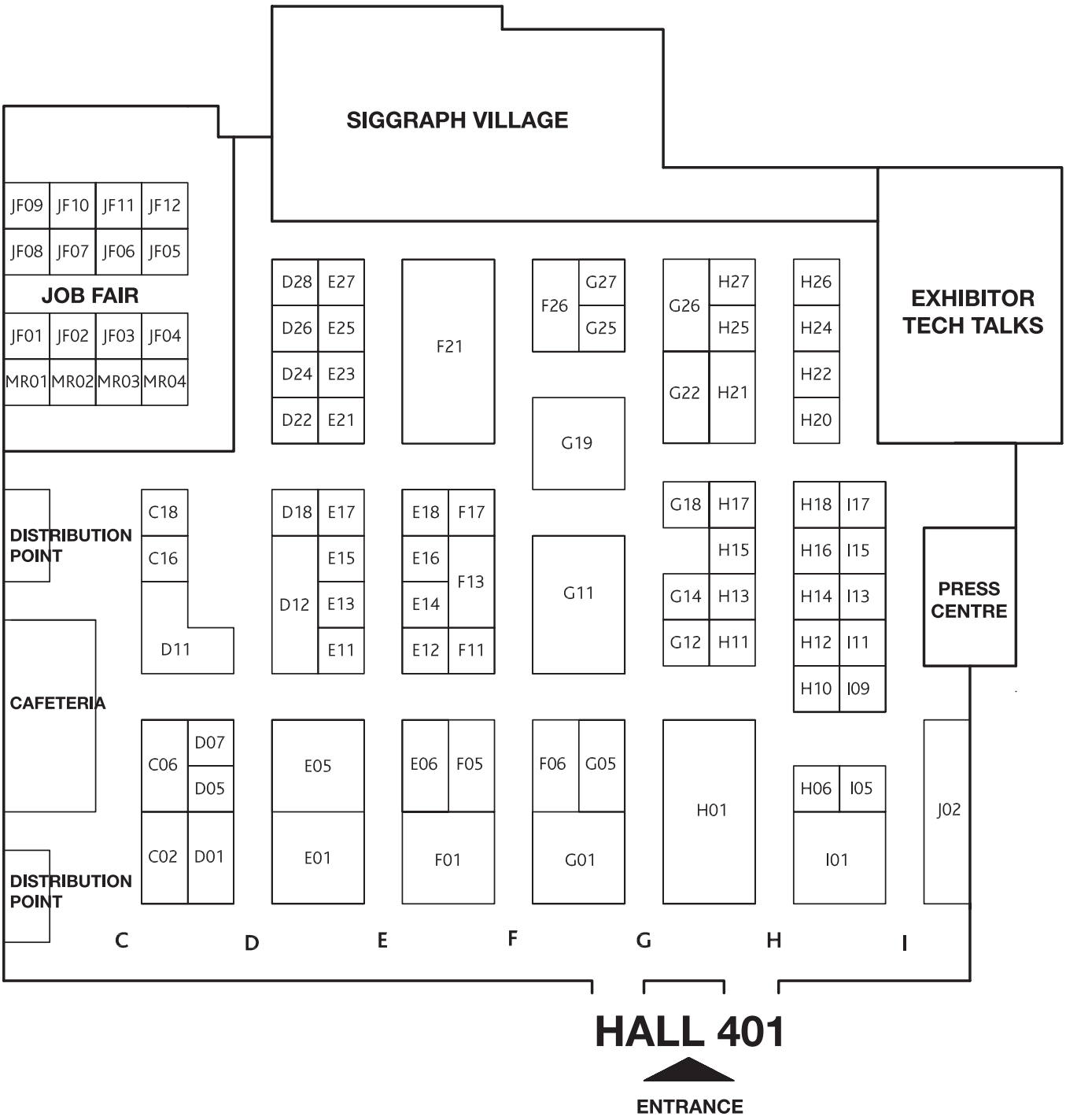
As of 11 November, 2008



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Exhibitor Booth Listing

As of 11 November, 2008

Booth

H13 3D Consortium

E17 3DSense Media School

G19 Academy of Art University

F21 Agency for Science, Technology and Research (A*STAR)

G01 AMD

H24 Animation Magazine Inc.

H25 Animation Reporter

H10 Anya Animation Company

D12 Association of Machinima Arts & Sciences

H01 Autodesk Asia Pte Ltd

H16 B-Digital Co., Ltd.

D05 CGTantra

J02 Chaos Software

E01 Christie Digital Systems USA Inc.

F13 Creative Education Group

E14 Crystal Computer Graphics Pte Ltd

H14 Digidream Co.,Ltd.

H18 E-Media Co., Ltd

E06 ETRI (Electronics and Telecommunications Research Institute)

H11 Forum 8 Co., Ltd

F05 Frameboxx Animation & Visual Effects

F11 Freeform Solution Pte Ltd

D22 Fresbo Pte Ltd

G14 Frontop Digital Technology Co. Ltd.

F17 G Element Pte Ltd

I13 Homerun Entertainment Co., Ltd.

G18 Hong Chek Co Pte Ltd

C06 Hong Kong ACM SIGGRAPH Professional Chapter Ltd

F01 IBM Singapore Pte Ltd

C18 IdN

D11 Imagi Studios

H12 Imagimax Co., Ltd

E18 Imaginit Technologies (S) Pte Ltd

D18 Interactive Digital Centre Asia

E11 Kaleida

H06 Korea National University of Arts

I01 Leadtek Research Inc.

D01 Lightwork Design Limited

G11 Lucasfilm Animation Company Singapore B. V

C02 Lumiscaphe

D12 Media Development Authority of Singapore

H22 Microsoft

E12 MotionElements Pte Ltd

E05 Multimedia Development Corporation (MDeC)

H26 National Yunlin University of Science & Technology

G05 New York University Tisch School of the Arts Asia

H27 Nosco Consultancy

I09 Paragon Studio Co., Ltd

G25 Pearson Education South Asia Pte Ltd

G12 Pixar Animation Studios

F26 SAE Institute

G22 Santoku Corporation

F06 Seoul Business Agency

H17 Shenyang Seven Colour DreamLand Animation Company

G26 Sheridan Global

I15 Siam University

H15 Side Effects Software Inc.

I05 Singapore Tourism Board

H20 Smart Eyes

H21 Stack! Studios

I17 Teapot Studio Co., Ltd.

I11 The Monk Studio Co., Ltd.

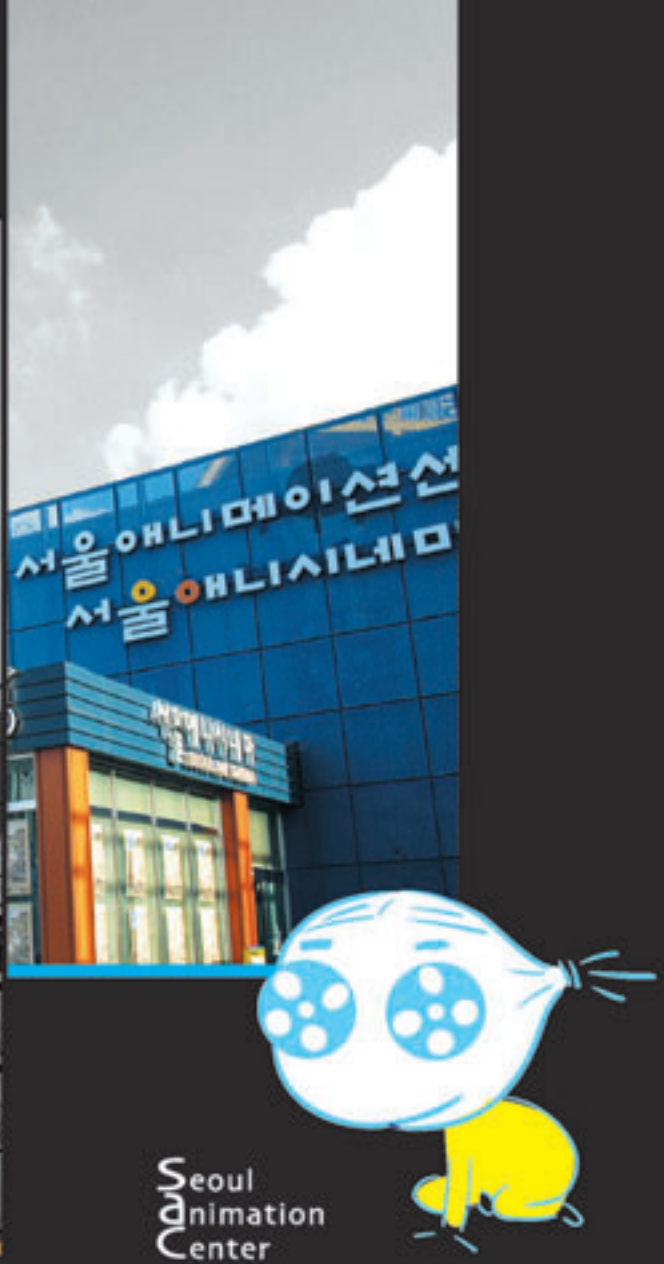
E23 Time Voyager Pte Ltd

D07 Tobii Technology

E21 TQ Global Pte Ltd

C16 United BMEC Pte Ltd

G27 University of Newcastle



Seoul
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THE SEOUL ANIMATION CENTER is an organization operated by the Seoul Business Agency (SBA), and was established by the Seoul Metropolitan Government to support and promote the domestic cartoon, Gaming, Character and Animation Industry.

It is conducting various programs related to the cultural content industry such as planning and operating a variety of educational programs related to cartoons and animation; nurturing new writers and offering production support to generate successes; offering marketing support for advances into overseas markets; operating the Seoul Ani Cinema and library; and hosting various exhibitions and film festivals.

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Exhibitor Description

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Industry organisation to promote stereoscopic display technologies.

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3dsense Media School is ranked by 3D World Magazine as one of the Top 10 computer animation schools outside of the US and the UK. Our graduates' international employment records and award-winning works speak of the quality of our students, curriculum, and pedagogies.

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Established in 1929, Academy of Art University offers accredited degrees online and on campus. Classes include Motion Graphics, New Media, Motion Pictures & Television, Multimedia Communications, and Visual Effects, to name a few.

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Animation Magazine Inc. is the only monthly trade magazine covering the animation and vfx industry around the world and publisher of the Animation Industry Directory.

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Animation Reporter is India's premier magazine devoted to animation, special effects and gaming, and counts as its readers professionals and students associated with these industries.

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Anya Animation is an animation studio with creative and production capabilities to create a new generation of animations. Anya's objective is to combine CG technology with creative talent to create animated series and films with memorable characters and great stories.

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AMAS is a non-profit organisation committed to evangelise the Machinima movement in Asia and identify and groom the next generation of game makers and animators.

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K'ARTS / KNUA

Korea National University of Arts (K'ARTS) is established by Ministry of Culture, Sports and Tourism Republic of Korea. **K'ARTS** is the unique University that is only specialized in art education in entire Asia. **K'ARTS** consists of six independent but correlative colleges: **School of Music, School of Drama, School of Film, TV & Multimedia, School of Dance, School of Visual Arts, and School of Korean Traditional Arts.** Each college only has major subject centered on practical skills and creation of art without any liberal studies.
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U-AT Labs at **K'ARTS** sponsored by the Ministry of Culture, Sports and Tourism Republic of Korea, that is incorporated into Korea's cutting-edge IT technology and infrastructure as contents producing ability and **Art& technology** capacity.
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U-AT labs organize academic cooperation system encouraging communication in art & technology and harmony of 6 colleges as an advance base.

isAT 2008 : Shift to the third space

isAT 2008 held successfully at **K'ARTS, Seoul** on **October 8, 2008.** This international symposium continued last year's success in bringing together internationally renowned scholars, artists, professionals such as **Roy Ascott, Jeffrey Shaw, LynnHershaman, Donald Marinelli** to exchange information on the latest developments in art and technology.
isAT 2008 served as an active forum in which the artists and scientists who sought encounter of art and science-technology, deliberate on such question, sharing and exchanging creative views and thought.

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CGTantra is the largest online community portal of animation, VFX, and gaming from India that caters to the creative and technical needs of professionals and students of the traditional and digital realms alike.

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Chaos Software is the developer of V-Ray for Autodesk 3ds Max. The first release candidate of V-Ray for Autodesk Maya will be out toward the middle of 2009. For information on purchasing Pdplayer, please visit our web site.

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Fresbo develops virtual world technologies and operates its own flash-based virtual world for teens, Fresbo World. It is distributed across most major social networks such as Facebook, MySpace, Friendster, and Bebo.

Frontop Digital Technology Co. Ltd.
G14
F5,F6 Building A,
Wushan Technology Plaza
Wushan Road, Tianhe District
Guangzhou, China
+86 20 8758 7618
frontop2002@126.com
www.frontop.cn

We are a six-year-old professional company that mainly deals with architecture renderings, 3D animations, multimedia, web site design, and virtual reality.

G Element Pte Ltd
F17
15 Jalan Kilang Barat, #04-01
Frontech Centre
Singapore 159357
+65 6270 5605
partnerships@gelement.com
www.gelement.com

G Element aims to make buildings easier to visualise and manage. Our core product is Germanium, a platform for easily creating 3D in building applications.

Homerun Entertainment Co., Ltd.
I13
19/71 Sukhumvit Suite Building, 10th floor
Sukhumvit Road, Wattana
Bangkok 10110 Thailand
+66 2651 1288
sopita@homerun.co.th
www.homerun.co.th

TV Producer (Animation Property: "4 Angies", "Doggadoop"). Animation/ character management. Licensor.

Hong Chek Co Pte Ltd
G18
180 Paya Lebar Road, #09-07
Yi Guang Factory Building
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Hong Kong
+852 2788 5968
hong-kong-chapter@siggraph.org
www.siggraph.org.hk

Hong Kong SIGGRAPH is organised and operated exclusively for educational, scientific, and artistic purposes in the Hong Kong region.

IBM Singapore Pte Ltd

F01

7, Changi Business Park Central 1
The IBM Place
Singapore 486072
power@sg.ibm.com
www.ibm.com/media

In the era of high-definition video, broadband connectivity, and content on demand, the next generation of digital media creators and distributors will require more compute power than ever before. At the same time, the digital media marketplace is becoming more competitive, driving the need for greater efficiency and flexibility. IBM digital media solutions are designed to help the digital media community transcend business and technical challenges, and restore creative liberty.

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C18

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+852 2528 5744
angi@idnworld.com
www.idnworld.com

With 15 years of history devoted to the international design and creative publishing industry, IdN's mission is to amplify and unify the design communities of the world.

Imagi Studios

D11

23/F, Eight Commercial Tower
8 Sun Yip Street
Chai Wan, Hong Kong
+852 3102 0108
info@imagi.com.hk
www.imagi.com.hk

Imagi Studios' mission is to create a library of high-quality CG-animated feature films to entertain global audiences and to build enduring brand franchises.

Imagimax Co., Ltd

H12

373/41 Narathiwasrachnakarin Road
Chongnonsee, Yannawa
Bangkok 10120 Thailand
+66 2674 3111
saksiri@imagimaxstudio.com
www.imagimaxstudio.com

Imagimax is the animation studio in Thailand. We have substantial experience with the domestic and international studios on 2D and 3D animation, CGI games, and VFX.

IMAGINIT Technologies (S) Pte Ltd

E18

3 Lim Teck Kim Road, #13-02
ST Building
Singapore 088934
+65 6226 0880
sewjs@rand.com
www.rand.com/imaginit/sg

IMAGINiT Technologies is the service provider of 3D interactive applications including gaming, design review, visual simulation, e-learning, and product marketing. IMAGINiT will showcase its services through videos, movies, and stories about applications that IMAGINiT can help develop for different industries.

Interactive Digital Centre Asia

D18

21 Tampines Avenue 1
Singapore 529757
+65 6780 5510
vincent.ong@im-innovations.com
senggiap@tp.edu.sg
www.idc-asia.com.sg

Interactive Digital Centre Asia offers innovative 3D content and application development, applied research, training and consultancy services to the various industries in the Asia region.

Kaleida

E11

1003, Bukit Merah Central, #02-06
Redhill Industrial Estate
Singapore 159836
+65 6323 5352
cheung@kaleida.com.sg
www.kaleida.com.sg

Kaleida specialises in 3D animation, video production, and environmental multimedia design. We aim to deliver excellence.

Korea National University of Arts

H06

San, 1-5, Seokgwan-dong, Seongbuk-gu
Seoul 136-716 South Korea
+822 746 9810
sangmokha@gmail.com
www.knuani.net

Korea National University of Arts (K'ARTS) was established by the Ministry of Culture, Sports and Tourism, Republic of Korea, and it is the only University in Asia that is specialised in art education. K'ARTS consists of six independent but related colleges, including the School of Film, TV & Multimedia. eK'ARTS offers a four-year bachelor-degree course and a two-year master-degree course in art while providing a three-year graduation and training programme and special education for gifted young students.

Leadtek Research Inc.
I01
18, No. 166 Chien-Yi Road
Chung Ho City
Taipei 23511 Taiwan
+886 2 8226 5800
contact@leadtek.com
www.leadtek.com

Leadtek Research Inc., with over 20 years experience on high-quality 3D graphics design, is set to cooperate with NVIDIA to present optimised workstation performance of Quadro.

Lightwork Design Limited
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Lucasfilm Animation Company Singapore B.V.
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Tampines Central Post Office
PO Box 178
Singapore 915206
lasrecruiter@lucasfilm.com
www.lucasfilm.com

Working in collaboration with Industrial Light & Magic, Lucasfilm Animation US, and LucasArts, Lucasfilm's studio in Singapore is engaged in creating animation and visual effects for feature films and developing multi-platform games.

Lumiscaphe
C02
Site de Marticot
Cestas 33610 France
+33 5 6364 0162
dieudonne@lumiscaphe.com
www.lumiscaphe.com

Lumiscaphe develops 3D real-time realistic technology to create fabrics and manage light environments in CAD tools.

Media Development Authority of Singapore
D12
3 Fusionopolis Way, #16-22
Symbiosis Singapore 138633
+65 6377 3800
www.smf.sg

Formed in 2003, the Media Development Authority of Singapore (MDA) plays a vital role in transforming Singapore into a Global Media City and positioning it at the forefront of the digital media age. MDA spearheads initiatives that promote development by ensuring clear and consistent regulatory policies and guidelines, and helps to foster a pro-business environment for industry players and increase media choices for consumers.

MotionElements Pte Ltd.
E12
81A Maude Road
Singapore 208355
+65 6296 3742
artists@motionelements.com
www.motionelements.com
MotionElements is the home of Asia's premium royalty-free motion elements.

An online marketplace to buy and sell motion graphics, 3D models, and stock footage.

Multimedia Development Corporation Sdn Bhd. (MDeC)
E05
MSC Malaysia Headquarters
2360 Persiaran APEC, Cyberjaya
Selangor Darul Ehsan, 63000 Malaysia
+603 8315 3000
clic@mdec.com.my
www.mscmalaysia.my/

MSC Malaysia is a national initiative spearheaded by the Malaysian government to promote the national ICT industry. It has attracted global ICT companies to develop and host their leading-edge technologies and support Malaysian ICT SMEs in becoming world-class companies. Driving this initiative is the Multimedia Development Corporation, a unique, high-powered government-owned corporation.

National Yunlin University of Science & Technology
H26
123, Section 3, University Road, Douliou
Yunlin 64002 Taiwan
+886 5534 2601
dmd@yuntech.edu.tw
www.yuntech.edu.tw

The University's main incentive is to upgrade the national level of design education and foster outstanding design specialist, as well as to enhance the quality of instruction, research, and service by integrating on-campus resources with a complement of expertise among related insitutions.

New York University Tisch School of the Arts Asia
G05
3 Kay Siang Road
Singapore 248923
+65 6500 1700
tisch.asia@nyu.edu
www.tischasia.nyu.edu.sg

At New York University Tisch School of the Arts Asia, students learn traditional forms of the art of animation and explore a sandbox of advanced techniques and digital technologies.

Exhibitor Description (continued)

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Ubi TechPark
Singapore 408564
+ 65 6742 5896
kanay@nosco-asia-pacific.com
www.nosco.com.sg

Nosco Consultancy specialises in products and services for 3D visualisation, prototyping, and scanning in the commercial and educational sectors.

Paragon Studio Co., Ltd
I09
45 Soi Ladplao 110 (Sonthiwathana)
Ladplao Road, Wangthonglang
Bangkok 10300 Thiland
+66 2539 0612
paragonvfx@gmail.com

3D animation and CGI.

Pearson Education South Asia Pte Ltd
G25
23/25 First Lok Yang Road, Jurong
Singapore 629733
+65 6319 9388
raymond.chen@pearson.com
www.pearsoned-asia.com

Pearson is the leader in providing effective and innovative curriculum products in digital and print media, assessment for students and teachers, student information systems, and teachers' professional development and certification programmes.

Pixar Animation Studios
G12
1200 Park Avenue
Emeryville, California 94608 USA
+1 510 922 3000
rendermansales@pixar.com
www.pixar.com

Visit the Pixar booth to Learn more about the RenderMan Products, the core rendering technology that make Pixar's films so visually appealing.

For more information about RenderMan products, see the Pixar web site.

SAE Institute
F26
71 Bencoolen Street, #02-01
Singapore 189643
+65 6491 1188
infosingapore@sae.edu
www.sae.edu

SAE Institute , the world's largest media institute with more than 50 colleges internationally, offers various higher educational programs within the fields of multimedia production, digital filmmaking, audio engineering, animation, and games programming.

Santoku Corporation
G22
2nd Floor 3-3-8, Kyobashi, Chuo-Ku
Tokyo 104-0031 Japan
www.san-toku.co.jp/VirtoolsOnlinePage/VirtoolsIndex.htm

Santoku is the seller of the game prototyping software Virtools and VR simulator devices, and is an integrator of VR simulation systems.

Seoul Business Agency (SBA)
F06
514 Daechi-dong Gangnam-gu
Seoul, South Korea
+82 2 34558363
miyoung@sba.seoul.kr
sba.seoul.kr/eng/index.jsp

The Seoul Business Agency is a Seoul Metropolitan Government-funded organisation formed to provide comprehensive and systematic support for small- and medium-sized venture businesses in Seoul.

Shenyang Seven Colour DreamLand Animation Company
H17
312 Building A ONLY Garden Hunnan
Shenyang 110168 China
+86 024 8378 0686
jinjin13@yahoo.com.cn
www.dreamland.com.cn

Located in the heart of Chinese animation production, we are an original animation production company supported by the Chinese government. Abiding by the principles of truth, kindness, and beauty, we create innovative 3D, 2D, FlashTV, animations, and films with Oriental charisma.

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1430 Trafalgar Road
Oakville, Ontario L6H 2L1 Canada
+1 905 815 4071
jen.wilcock@sheridaninstitute.ca
www.sheridananimates.com

Sheridan Global in Singapore is the first international campus to offer reputable animation programmes from Canada's Sheridan Institute of Technology and Advanced Learning.

Siam University
I15
235 Petchkasem Road, Bangwa
Pasichareon 10163 Thailand
+66 2457 0068 ext. 313
angelmagics@hotmail.com
digitalmedia.siam.edu

After two decades of steady growth and development, the university has contributed more than 39,000 graduates to the national manpower in various fields of specialization.

Side Effects Software Inc.
H15
123 Front Street West
Toronto, Ontario M5J 2M2 Canada
+1 416 504 9876
www.sidefx.com

The Houdini family of animation software offers digital artists an unprecedented level of power, flexibility, and control based on award-winning technology. The comprehensive feature set includes: modelling, rigging, animation, particle effects, dynamics, compositing, integrated rendering, and more. All Houdini applications work together seamlessly and are available for the Mac OS X, Linux, and Windows operating systems.

Singapore Tourism Board
I05
1 Orchard Spring Lane, Tourism Court
Singapore 247729
+65 6736 6622
stb_visitsingapore@stb.gov.sg
www.visitsingapore.com

The Mobile Singapore Visitors Centre (SVC) functions as a one-stop tourist information centre that provides destination-related information. At the Mobile SVC, attendees can pick up brochures or speak to the friendly tourist guide for tips on where to shop, wine, dine, and party in Singapore.

Smart Eyes
H20
Första Långgatan 28B
41237 Göteborg, Sweden
+46 76141 4041
Lars.nyvik@smarteye.se
www.smarteye.se

Remote eye tracking.

Stack! Studios
H21
Piazza San Marcellino 6/11
Genoa, Italy
+39 010 869 6500
stack-studios@stack-studios.com
www.stack-studios.com

Stack! Software presents Felix, the first fully online rendering solution.

Teapot Studio Co., Ltd.
I17
55/50 Moo5 Sittharom Village,
Chaengwattana Road, Pakred, Pakred
Nonthaburi 11120 Thailand
+ 668 1915 3622
speraltive@hotmail.com
www.teapot-st.com

Services: Creative and design, 2D and 3D animation, visual effects, game development, new media content.

The Monk Studio Co., Ltd.
I11
23/2 Pattanakarn 17, Pattanakarn Road
Suan Luang
Bangkok 10250 Thailand
+ 66 2717 2075
contact@themonkstudio.com
www.themonkstudio.com

The Monk Studio is a boutique visual effects and animation studio specialising in high-quality CG productions, located in Bangkok, Thailand.

Time Voyager Pte Ltd
E23
6 Raff es Quay, #22-00
Singapore 048580
+86 136 4177 2485
business@timevoyageronline.com
www.timevoyageronline.com

MMORPG and game-engine development.

Tobii Technology
D07
3-4-13 Takanawa
Assorti Takanawa, 4th Floor, Minato-ku
Tokyo 108-0074 Japan
+81 3 5793 3316
susanne.segeblad@tobii.com
www.tobii.com

Tobii Technology is a world leader in hardware and software solutions for eye tracking. Eye tracking enables a computer to tell exactly where a person is looking.

TQ Global Pte Ltd
E21
GameLab Annexe, SCE,
NS01-05-15, Nanyang Avenue
Singapore 650798
+65 6513 7654
brian@tqglobal.com.sg
www.tqglobal.cn

TQ Global is a leading game developer in Asia for online PC and game consoles. Its subsidiary, Institute of Digital Game Technology trains technical artists and programmers for game development.

United BMEC Pte Ltd
C16
2 Kim Chuan Drive #06-01
CSI Distribution Centre
Singapore 537080
+65 6305 2525
wongsn.bmec@uwhpl.com
www.motionanalysis.com

Motion Analysis Corporation is the world's largest manufacturer of high-performance optical mocap systems that measure motion for animation production, movement analysis, and industrial applications.

University of Newcastle
G27
School of Design Communication & IT
University Drive
Callaghan, New South Wales 2308
Australia
+61 24985 4544
brian.regan@newcastle.edu.au
www.newcastle.edu.au

The University of Newcastle provides bachelor, masters, and doctoral degrees in digital media, graphic design, media production, and information technology.

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*BPA Audit statement December 2007

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loufrancis.wee@rbi-asia.com
T: (65) 6780 4305

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Nazir Keshvani
nazir.keshvani@rbi-asia.com
T: (65) 6780 4806
Mobile: (65) 9817 6794

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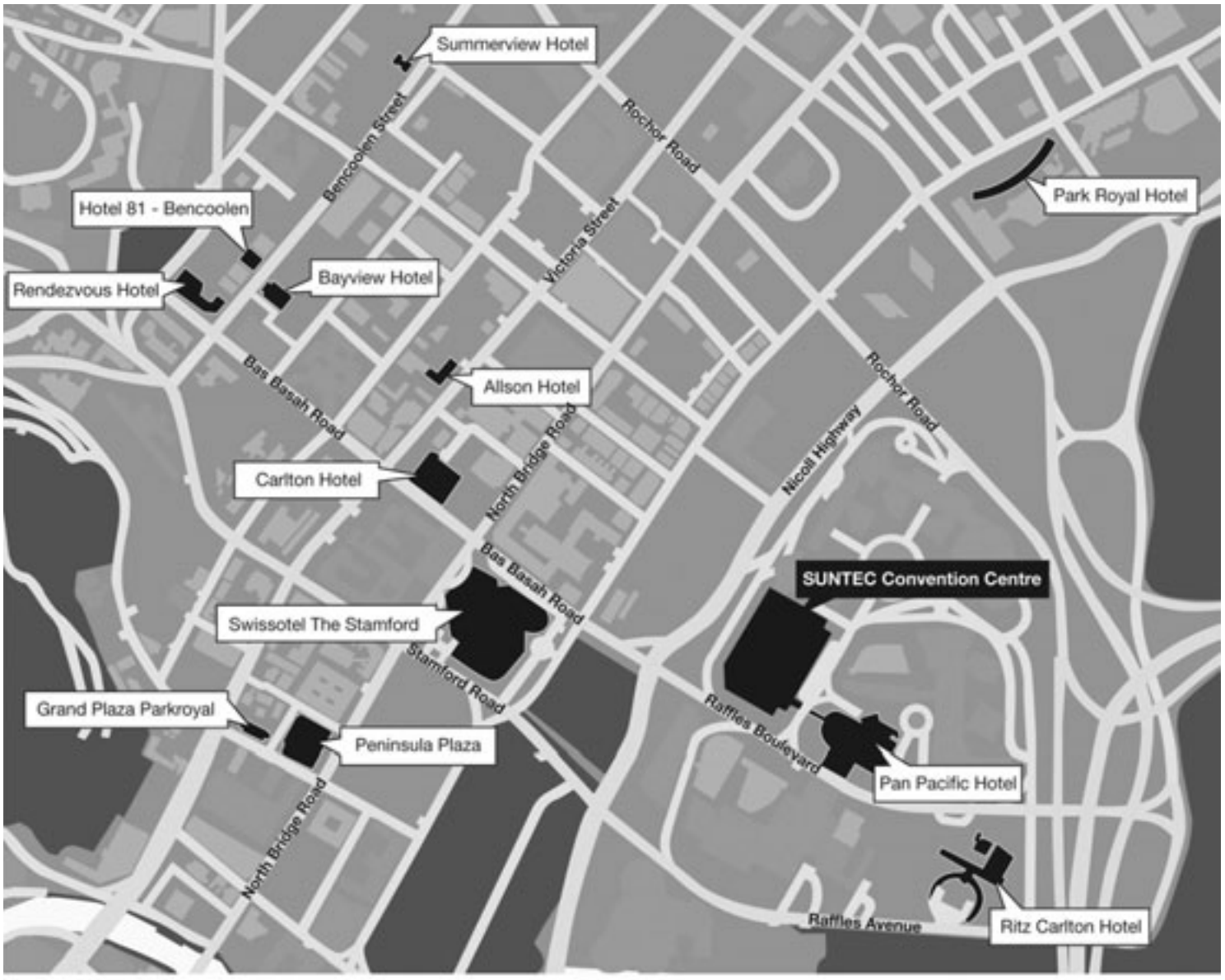
Area Map & Hotels



Singapore Hotels

5 STAR

1. Ritz Carlton, Millennia Singapore
2. Pan Pacific Hotel
3. Swissotel The Stamford Hotel

4 STAR

4. Grand Plaza Park Hotel
5. Carlton Hotel
6. Rendezvous Hotel
7. Parkroyal on Beach Road Hotel
8. Peninsula & Excelsior Hotel
9. Allson Hotel

3 STAR

10. Bayview Hotel
11. Summer View Hotel
12. Hotel 81 - Bencoolen

Area Map & Hotels (continued)

1. **Ritz Carlton, Millennia Singapore**
   7 Raffles Avenue
   Singapore 039799
   T: (65) 6337 8888 F: (65) 6338 0001
   S: S$370.00++ T: S$370.00++

2. **Pan Pacific Hotel**
   7 Raffles Boulevard, Marina Square
   Singapore 039595
   T: (65) 6336 8111 F: (65) 6339 1861
   S: S$330.00++ T: S$330.00++

3. **Swissotel The Stamford Raffles**
   2 Stamford Road
   Singapore 039595
   T: (65) 6336 8111 F: (65) 6339 1861
   S: S$340.00++ T: S$340.00++

4. **Grand Plaza Park Hotel**
   10 Coleman Street
   Singapore 179809
   T: (65) 6336 3456 F: (65) 6339 9311
   S: S$295.00++ T: S$295.00++

5. **Carlton Hotel**
   76 Bras Basah Road
   Singapore 189558
   T: (65) 6338 8333 F: (65) 6339 6866
   S: S$295.00++ T: S$295.00++

6. **Rendezvous Hotel**
   9 Bras Basah Road
   Singapore 189559
   T: (65) 6336 0220 F: (65) 6337 3773
   S: S$280.00++ T: S$280.00++

7. **Parkroyal on Beach Road Hotel**
   7500A Beach Road
   Singapore 199591
   T: (65) 6505 5666 F: (65) 6296 3600
   S: S$250.00++ T: S$270.00++

8. **Peninsula & Excelsior Hotel**
   5 Coleman Street
   Singapore 179805
   T: (65) 6337 2200 F: (65) 6339 3847
   S: S$250.00++ T: S$250.00++

9. **Allson Hotel**
   101 Victoria Street
   Singapore 188018
   T: (65) 6336 0811 F: (65) 6334 0631
   S: S$250.00++ T: S$250.00++

10. **Bayview Hotel**
    30 Bencoolen Street
    Singapore 189621
    T: (65) 6337 2882 F: (65) 6338 2880
    S: S$220.00++ T: S$240.00++

11. **Summer View Hotel**
    173 Bencoolen Street
    Singapore 189642
    T: (65) 6338 1122 F: (65) 6336 6346
    S: S$180.00++ T: S$180.00++

12. **Hotel 81–Bencoolen**
    41 Bencoolen Street
    Singapore 189623
    T: (65) 6336 8181 F: (65) 6338 3316
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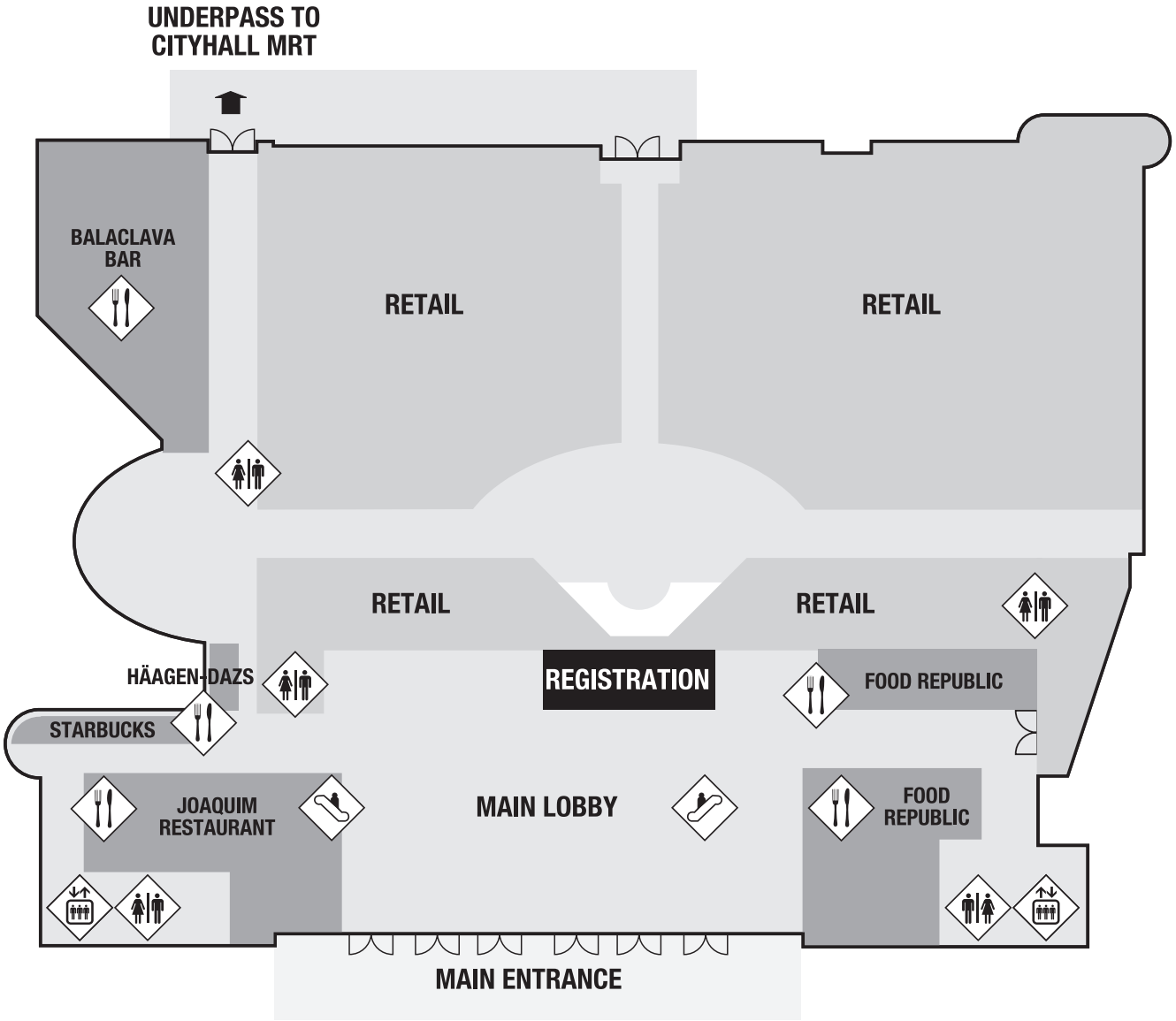
[리뷰] ReeperX For Cinema 4D 10

Suntec Singapore Convention & Exhibition Centre Map

Level 1



Escalator

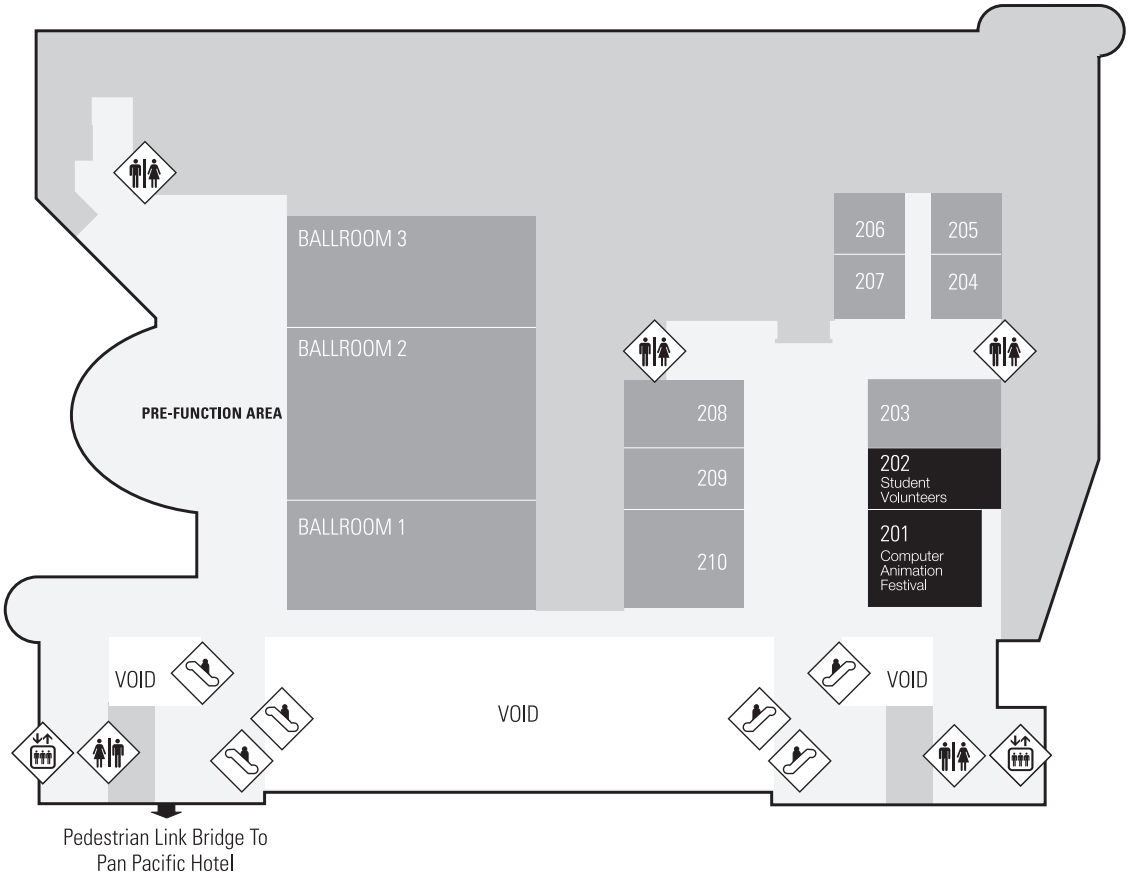
Lift

Restroom

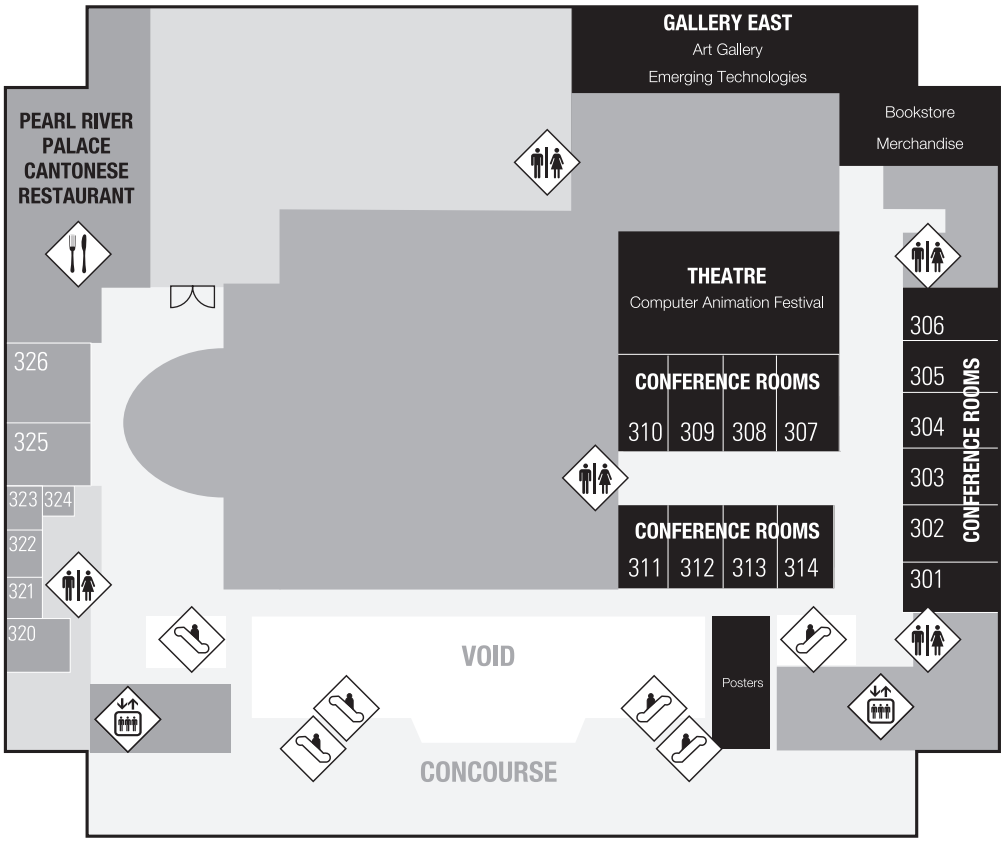
Food & Beverage

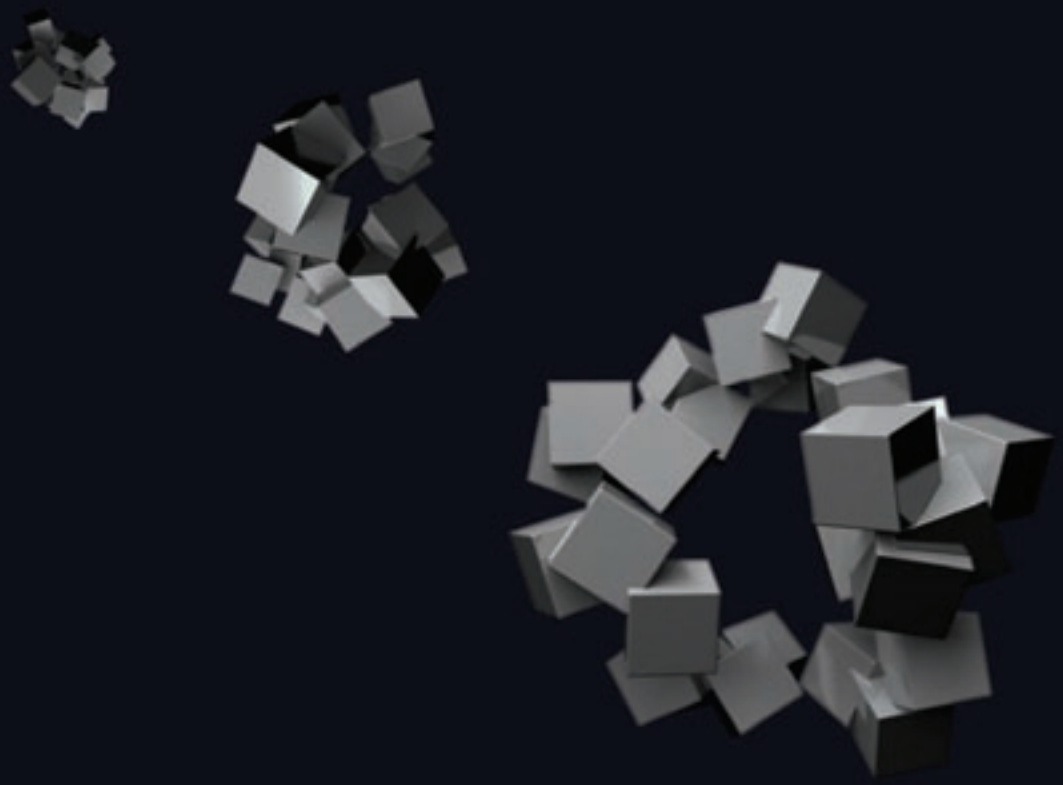
Suntec Singapore Convention & Exhibition Centre Map

Level 2



Level 3





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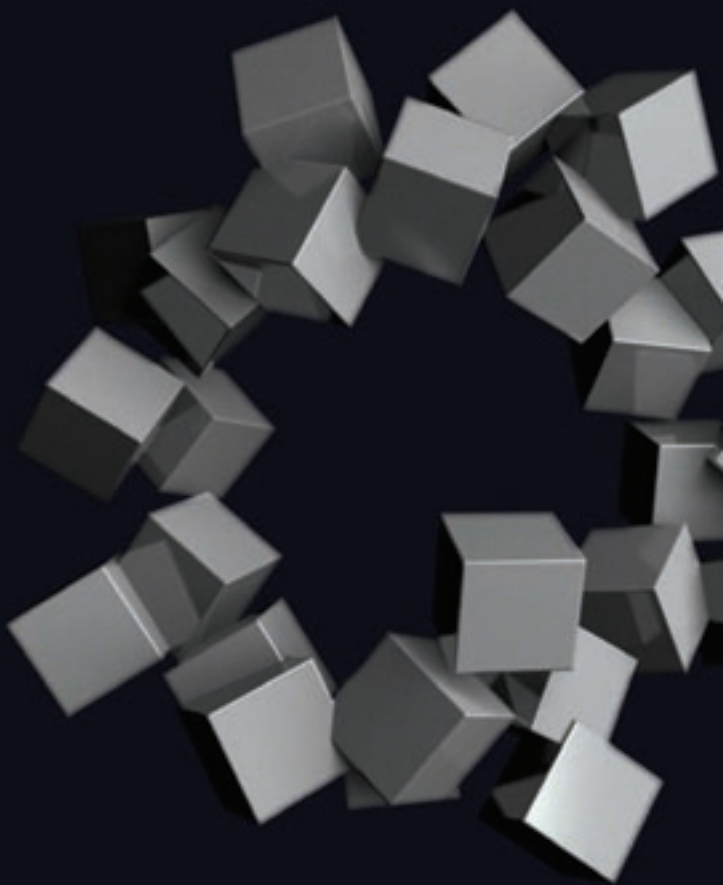

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[CG Magazine] is the most popular monthly magazine in China with professional CG technologies and practical tips, our readers are Film VFX supervisors, commercial producers, animators, game developers, CG fans etc. we have an average monthly circulation of approximately 60,000 copies and have maintained very good reputation in the CG industry. In order to meet the dramatic development of CG industry in China, introduce more works and artists worldwide, we invite you to join and cooperate in the following columns:

- Visual pioneer

In-depth report about the artists and their works all around the world, show creative and technical information.

- People & team

Introduce international companies and their staff, give a comprehensive presentation of the company's business, operating philosophy, excellent works, etc

- Video gallery

A column for showing animation, commercial, MV, film Prologue and the end titles, etc.

- Tutorial

Professional column for tutorials.

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Ballistic Media was formed in 2003, when it became obvious that artists using the web site to post their work were also anxious to see it in print. Our initial success came from publishing the first digital art annual, EXPOSÉ, which has since grown beyond just a collection of digital art to become a focal point for the greater digital art community. Establishing ourselves as a quality boutique publisher has allowed us to diversify our list to include both multiple and single artist titles as well as tutorial books and DVDs.

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