

Educators Program Fact Sheet

Chair: Ayumi Miyai, Computer Graphic Arts Society

Conference: Wednesday 16 December – Saturday 19 December

Exhibition: Thursday 17 December – Saturday 19 December

The Facts

- The Educators Program is a place where people from all levels and disciplines, from academia and industry, can share their research, methods, and opinions about the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning computer graphics and interactive techniques in all areas of education, and for integrating them into various areas of education.
- The Educators Program presents Education Papers, Workshops, and Talks that cover a wide range of exciting topics.
- There are 17 education paper presentations, from nine different countries all over the world. The 17 top-quality papers were selected out of 43 submissions after a vigorous reviewing process by peer reviewers and a jury. They cover a wide range of exciting topics, for example animation, game, design, arts, VR, Visualization and etc. Also, we hold Japanese presentation sessions by Japanese authors.
- Filmakademie, Shigeru Araki, Mits Kaneko, SEGA and Premium Agency will conduct workshops in both English and Japanese.
- There are also talks on education for different ages, including children, junior high school students and senior citizens.

A Quote from the SIGGRAPH Asia 2009 Educators Program Chair:

"This year, I believe the standard of the Education papers and authors is higher than ever before because of our vigorous reviewing process. We have been invited to prepare a special issue of Computers and Graphics Education section with selected, extended versions of papers from SIGGRAPH Asia 2009 Educators Program.

The theme of the Education Workshop is "Bridging the Gap: Academic Education and Real World". I firmly believe that these workshops will be able to narrow the gaps that currently exist in the academic world.

The Education Talks will demonstrate the breadth and flexibility of education methods that target not just university students and professionals but also ordinary citizens of all ages. I believe attendees will walk away with a lot of fresh ideas on new teaching and learning methods."

SIGGRAPH Asia 2009 Education Papers highlights include:

- **Educating Technophile Artists: Experiences from a highly successful computer animation undergraduate programme**

Peter Comninou & Leigh McLoughlin

Bournemouth University

Eike Anderson

Coventry University

In the past few decades, the arts have become increasingly dependent on and influenced by the development of computer technology. In the 1960s, pioneering artists experimented with the emergent computer technology, and more recently the majority of artists have come to use this technology to develop and even to implement their artifacts.

The traditional divide between art and technology has been breaking down to the extent that many artists consider themselves technophiles. In truth, this divide has never existed. Throughout history, artists have always used and exploited available technology and frequently led the development of new technology that would allow them to express their creativity. For instance the ancient Greek word for art was "techni", the root for the word "technology".

The artificial and harmful divide between the arts and sciences was introduced in the western educational system in the 19th century, and it is high time that it was bridged or removed altogether. To this end, the National Centre for Computer Animation at Bournemouth University has pioneered a number of university degrees that aim to blur the difference between artists and scientists and technologists. This paper explores the design of such courses and shares experiences, successes, and trials and tribulations in implementing degrees in computer animation, games, and digital effects.

- **An innovative game creator upbringing project in the Asian region**

Motonobu Kawashima

Premium Agency Inc.

In recent years, there has been a shortage of talented game creators in Asia, because game development requires complex collaboration among visual artists, game programmers, and game designers (planners). Students need to acquire a high level of computer and creative skills, and learn how to combine technical and artistic processes. This paper introduces Digital Content

Creation Camp, a program that uses console-game production technologies cultivated in Japan to expand development of game creators throughout the Asia-Pacific region.

- **An Educational Method for VR Content Creation using Groupwork
Feeling before knowing: form-making with the use of digital simulations**

Kazunori Miyata

Japan Advanced Institute of Science and Technology

VR content creation is a complex activity, and it requires a variety of skills, from sensing technology and computer graphics techniques to aesthetic design and storytelling. A groupwork-based project is a suitable approach for creating a VR application, because individual members can exert their full powers in their special fields by collaborating with each other.

This paper introduces and demonstrates the advantages of an educational method for creating virtual reality content through groupwork.

- **Dynamics-based tools: an unusual path to design integration**

Andrzej Zarzycki

New Jersey Institute of Technology

Design, and creativity in general, is as much an intellectual or deliberate act as an intuitive and imaginative process. While most designers naturally recognize this characterization, the digital tools used for design reflect the difference between these two modes of creativity rather than mitigate it. The tools are a collection of narrow and fragmented capabilities, rather than a unified platform for creativity. Consequently, designers are presented with a wide range of tools that often serve a very limited set of problems and stop short of carrying creative ideas throughout the life of a project.

In an architectural context, the challenge designers and educators face is how to integrate conceptual design tools with architectural building information (production) software. Interesting early designs are not always feasible architectural structures, while straightforward and buildable structures often fail to capture clients' imaginations.

This paper looks specifically at the applicability of special effects software in architectural design. Dynamics-based tools such as inverse kinematics, soft/rigid dynamics, cloth simulations, and particles can and should be used to

develop an architectural form. The dynamics-based tools not only introduce generative quality into design by facilitating explorative and accidental form-making, but they also can validate design decisions through the use of simulations and the introduction of physically based parameters, such as shear or tension forces, into design. From an academic perspective, dynamics-based tools enhance the conceptual or visceral understanding of architecture through interactive shaping of a form. Furthermore, these interactive simulations translate into a visually inspired, virtual hands-on experience for students and interns by helping them to develop an intuitive knowledge of architecture.

SIGGRAPH Asia 2009 Education Workshops highlights include:

- **Animation at Filmakademie Baden-Württemberg**

Sabine Hirtes

Filmakademie Baden-Württemberg, Institut für Animation, Visual Effects und digitale Postproduktion

This workshop introduces the structure and history of Filmakademie Baden-Württemberg and how studies are organized, then shows examples of student work. Filmakademie Baden-Wuerttemberg was founded in 1991. Animation was a part of the curriculum right from the beginning. Today, over 500 students are enrolled for practical education in film, television, and new media. Future film animators, editors, screenwriters, film music composers, camera operators, media designers, film producers, directors, actors, sound designers, and production designers learn how to make films by making them under the supervision of guest instructors and in close cooperation with all of Filmakademie's other departments.

- **SEGA Corporation's Training Program**

Iljun Kang, Kazuhiro Fumoto, Tomoyuki Tsukishima

SEGA Corporation

An introduction to SEGA Corporation's training programs for new employees, designed to help them acquire basic knowledge of game-development technologies. Training is required because technologies are evolving so rapidly. The workshop summarizes training in several areas, such as real-time shaders for artists, how to initiate effective animation, and continuous skill development.

- **Mime and Physical Theatre workshop for CG animators and directors**

Shigeru Araki

ACTVIRT CO. LLC

Mime uses simple, logical rules to create illusions of objects, space, and weight, which are all important in 3D animation. This workshop, which has been presented for major game developers and schools since 1998, is designed to help animators and other 3D specialists improve their character-creation skills. It also introduces some drama exercises, such as “Status”, which is one of the most effective exercises for understanding how to create drama by focusing on a character’s time and space.

SIGGRAPH Asia 2009 Education Talks highlights include:

- **Educational Activity Using A Photograph Mapping System**

Hidenori Watanabe

Tokyo Metropolitan University, Photon, Inc.

This talk summarizes a photograph mapping system that uses geocoding and GPS to support visualization of the sakura (cherry-blossom) front as it moves across Japan in the spring, fieldwork in suburban areas, and interactive questionnaires in museums. The system has been used in events and workshops for suburban residents, elderly persons, students, and internet users. It is very effective for learning about everyday events and interactive technologies.

- **WiiRemote Programming: development experiences of interactive techniques that can be applied to education for young engineers**

Akihiko Shirai, *Ecole Nationale Supérieure d'Arts et Métiers, National Science Museum (Miraikan)*

This case study presents results from a project that uses WiiRemote, the consumer video game controller, to teach interactive techniques in engineering schools and technical colleges. The project is based on findings from earlier attempts to use WiiRemote to motivate learning among middle-school students.