

# Call for Papers

## Computer Graphics for Simulation

**Paper Track of Sessions at the Summer Computer  
Simulation Conference 2008 (SCSC '08)  
June 16-19, 2008  
University of Edinburgh  
Edinburgh, Scotland**

Organizer:

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Simulations can consist of focused physical simulations to complex interconnected systems. Simulations can be used to produce numbers. Some simulations can produce theories of human behaviors. Other simulations test security while others investigate industrial control. In some cases the result is just a number or statistic. In many cases, the result is anthropomorphic.

Many simulations use graphics to present the results. Many simulations use virtual objects to represent the input to simulations. In many cases, the simulation must be visualized to reveal useful patterns in processes and models.

This track is designed to elicit papers that present novel results in simulation visualization. The track focuses on several topic areas. The General Computer Graphics topic area is designed to solicit papers that apply state of the art graphics techniques to visualizing simulation results and simulation virtual environments. The Web3D topic area is designed to extract from the research

community, state of the art techniques for visualizing distributed simulations. Many physically based simulations require solutions of complex systems of equations that must have efficient computational grids to produce realistic results with minimal computer resources. The 3-D modeling and animation systems topic is an application topic that asks how mature and existing modeling and animation systems can be integrated into the task of visualizing simulations. The art and esthetics topic invites researchers to present their work on pure art applied to simulation visualization.

Many of the topic areas involve advanced computer graphics techniques and in some cases, art of high caliber. Authors are encouraged to attach high-resolution renderings to their submissions for presentation in an exhibition. Up to 2 renderings can be submitted.

Technical papers are solicited, but not limited to the following topics:

### General Computer Graphics

- Rendering strategies and algorithms for architecture
- Visualizing deformation of mechanical and civil engineering structures resulting from simulations
- Modeling and animation of machinery simulations
- Modeling and animation support for Industrial Processes
- Solid modeling for simulation
- Visualizing gas, explosion and fluid simulation
- Volume visualization for simulation (medical, structural, geological, fluids, gases)
- Visualizing terrain effects on simulations (fluid, telecommunications, transport, security, military)
- Transportation visualization (structures, flight, vehicles, subways, tunnels, construction, security, military)
- Level of detail strategies for simulation visualization
- Massive virtual environments
- Visualization of mathematical objects
- Visualization of chemical and biological Objects
- Visualization of astronomical simulations
- Time and memory complexity of scientific visualizations
- Visualizing and graphing simulation data
- Verifying Accuracy of visualizations against simulation results
- Interaction techniques and haptic devices for simulation
- Visualizing damage to military and civilian transport
- Realistic lighting for simulation

## Web3D for Simulation

- VRML/X3D for simulation
- COLLADA / Game simulations
- Scenegraphs and strategies for simulation visualization optimization
- Collaborative medical simulation
- Data acquisition for simulation
- Distributed military simulation visualization
- Interoperability between military and civilian file formats

## Computational Grids for Simulation

- 2-D and 3-D irregular grids for simulation
- Adaptive grids for simulation
- Parallel algorithms for computational grids
- Grids for very large virtual environments

## 3-D Modeling and Animation Systems use in Simulation

- 2-D and 3-D commercial modeling and animation
- 2-D and 3-D open source modeling and animation
- Use of video to visualize simulation
- Video input to simulations
- 2-D drawing and sketching for use in simulation
- Use of commercial and open source export formats in simulation

## Art and Esthetics in Simulation

- Art and design strategies for simulated objects
- Color
- Simulating art
- Creating realistic textures for simulation visualization
- Art in constructing virtual environments

## Author Guide:

The conference committee will accept three types of papers submitted as a **PDF file** to the conference website (<http://www.softconf.com/scs/SCSC08/>) as listed below. Final version of all the papers **MUST COMPLY** with the [SCS conference format](#). All the submitted papers will be peer reviewed with respect to their quality, originality and relevance. The authors of the accepted paper **MUST** register in advance for inclusion of their paper in the conference proceedings.

1. **Full manuscript:** 8 pages in final conference format. In addition to publication in the conference proceedings, they will be considered for best paper award and for possible inclusion in SCS Simulation Journal. Full papers will be published both in hard copy and CD-ROM.
2. **Work in Progress:** Short papers up to 6 pages in final conference format.
3. **Short Papers:** Papers up to 3 pages with industrial focus, military or government applications in abstract, short paper, or poster format.

Each paper must include the title, authors, affiliations, addresses, references and summary for proper positioning in the conference. Only original papers, written in English, which have not been published previously elsewhere will be accepted. Please indicate which conference topic is most appropriate, listing first and second choices.

### **Final Paper Submission Guidelines:**

Please note that in case of acceptance your final manuscript will need to be submitted electronically as a PDF file to the conference website by May 15, 2008 to guarantee inclusion in the conference CD and final program. Authors of accepted papers are expected to attend the conference, present their work to their peers, transfer copyright, and pay a conference registration fee at the time their camera-ready paper is submitted. All papers will be included in the conference proceedings and archived in digital libraries; Full Papers will be also printed in hard copy.

### **Key Dates:**

Submission of Full Papers	<b>March 30, 2008</b>
Notification of Acceptance	<b>April 27, 2008</b>
Final Camera-Ready Submission and Early Registration	<b>May 15, 2008</b>