



2017 Summer Simulation Multi-Conference (SummerSim 2017)

49th Summer Computer Simulation Conference (SCSC 2017)

July 9-12, 2017 | Bellevue, Seattle Suburb, Washington, USA

COMPUTER GRAPHICS FOR SIMULATION (CGS'17)

TRACK CHAIRS

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AIMS AND SCOPE

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 results are 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 paper track is designed to elicit papers that present novel results in simulation interoperability and visualization. The paper 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 / WebGL / HTML5 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.

Many of the topic areas involve advanced computer graphics techniques and in some cases, art of high caliber. Authors are encouraged to attach supplementary high-resolution renderings to their submissions for presentation in an exhibition at the conference [Fame and Glory is the reward]. WebGL, GPGPU computing and HTML5 are now established hot topics in Computer Graphics heavily promoted at SIGGRAPH 2014 and previous Web3D, Graphics and SIGGRAPH conferences.

TOPICS

General Computer Graphics

- DEVS, simulation methodologies and computer graphics
- Rendering strategies and algorithms for architecture
- 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
- Time and memory complexity of scientific visualizations
- Interaction techniques and haptic devices for simulation
- Visualizing damage to military and civilian transport
- Realistic lighting for simulation

Web3D / WebGL / HTML5 for Simulation

- VRML/X3D for simulation and WebGL for distributed simulations
- COLLADA / OSG / KML / Game simulations / DEVS and CG / Coupled DEVS and CG
- SceneGraphs and strategies for simulation visualization optimization



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- Collaborative medical simulation
- Data acquisition for simulation
- Distributed military simulation visualization
- Interoperability between military and civilian file formats
- NVIDIA CUDA, OpenCL [Open Compute Language for CPU/GPU Scheduling]

Computational Grids for Simulation / GPGPU Computing 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
- Mimetic methods

SUBMISSION GUIDELINES

For submission guidelines go to <http://scs.org/authorskit/>. Papers should be submitted through the following link: <http://www.softconf.com/sim/SCSC17/>.