High Performance Graphics 2011
Call For Participation

Introduction

We are pleased to announce High-Performance Graphics 2011. High Performance Graphics is the leading international forum for **performance-oriented graphics systems** research including **innovative algorithms**, **efficient implementations**, and **hardware architecture**. The conference brings together researchers, engineers, and architects to discuss the complex interactions of massively parallel hardware, novel programming models, efficient graphics algorithms, and innovative applications. High Performance Graphics was founded in 2009 to synthesize and expand on two important and well-respected conferences in computer graphics:

- **Graphics Hardware:** an annual conference focusing on graphics hardware, architecture, and systems since 1986; and

- **Interactive Ray Tracing:** an innovative symposium begun in 2006 focusing on the emerging field of interactive ray tracing and global illumination techniques.

By combining and expanding these two communities, we bring to authors and attendees the best of both fields and a conference covering a broad range of interactive 3D graphics systems and algorithm research.

Conference Info

Sponsored by ACM SIGGRAPH and Eurographics (pending)

The program features three days of paper and industry presentations, with ample time for discussions during breaks, lunches, and the conference banquet.

The conference, which will take place on August 5—7, is co-located with ACM SIGGRAPH 2011 in Vancouver, Canada.

The conference website is located at http://www.highperformancegraphics.org/

Papers Track

We invite original and innovative performance-oriented contributions from all areas of graphics, including hardware architectures, rendering, physics, animation, AI, simulation, and data structures, with topics including (but not limited to):

- Interactive rendering pipelines (hardware or software)
    - Visibility algorithms (ray tracing, rasterization, transparency, anti-aliasing, …)
    - Shading architectures
    - Spatial acceleration data structures
    - Surface representations and tessellation algorithms
    - Reconfigurable rendering pipelines
    - Texturing and compression/decompression algorithms
- Interactive rendering algorithms (hardware or software)
    - Illumination algorithms (shadows, global illumination, …)
    - Adaptive rendering algorithms that robustly respond to dynamic scenes and reduce content creation costs
    - Image sampling strategies and filtering techniques
- Graphics hardware and systems
    - Novel fixed-function hardware design
    - Graphics hardware simulation, optimization, and performance measurement
    - Novel display technologies
- Languages and compilation
    - Programming models and APIs for graphics
    - Shading language design and implementation
    - Run-time code generation for graphics
    - Compiling for massively parallel graphics architectures
- Parallel computing for graphics
    - Scalable algorithms for parallel rendering and large data visualization
    - Physics and animation
    - Computer vision

- GPU computing
- Mobile graphics (**new for 2011**)
  - Hardware design for mobile, embedded, integrated, and low-power devices
  - Algorithms, rendering engines, and applications for mobile graphics
  - Innovative visual computing applications for mobile devices

Papers Length and Format

There is no fixed maximum length for a paper. However, the magnitude of the contribution must be proportional to the length of the paper. Papers longer than ten typeset pages in the final format must make a very significant contribution to be accepted. Papers of four or fewer pages will be held to a less strict standard of citation and description of related work (comparison to the strongest alternative techniques is still important, but an exhaustive review is not necessary). All accepted papers are treated equally, i.e., included in the proceedings and presented at the conference. At least one paper author must attend the conference to present an accepted paper. The proceedings will be published in full color and archived in the ACM and Eurographics Digital Libraries.

Paper Submission Info

Authors are invited to upload papers electronically in Adobe PDF format by visiting http://www.highperformancegraphics.org/submissions.html. Note that submissions are not anonymous, and authors should include their names on the papers. Video sequences in QuickTime, MPEG, or AVI format may be submitted using the electronic submission system. Dual submission is not allowed; any paper submitted to another venue and under consideration during the HPG review cycle will be rejected. Papers should conform to the style for "Conferences sponsored by ACM SIGGRAPH" described in http://www.siggraph.org/publications/instructions; we recommend using the templates given there.

For further information please contact: papers@highperformancegraphics.org

Hot 3D Systems Track

We invite vendors in the graphics industry to present their latest and greatest 3D chips, high-performance software, and system designs.

Presentations should be 20 minutes long, should be technical rather than marketing-oriented, and should focus on real products. Hot 3D presentations are not considered archival publications for the purposes of future submission to peer-reviewed venues.

The deadline for Hot 3D applications will be in mid-June allowing submission of late-breaking work.

For further information please contact: hot3d@highperformancegraphics.org

Posters

We also invite the submission of posters describing on-going or late-breaking work. In addition to traditional posters, this year's session will be enhanced to provide opportunities for paper authors to present implementation details or hands-on demonstrations.

Poster submissions will be accepted on a rolling basis, beginning Wednesday, 1 June and running through Friday, 1 July. Notification of acceptance will follow within 10-14 days of submission.

To submit a poster, please:

- Prepare an extended abstract (one page maximum) that summarizes the work using the paper format described above.
- Prepare a high-quality version of the final poster.
- Send both items (in PDF format) to posters@highperformancegraphics.org

Additional information:

- Posters will be exhibited in the break areas throughout the conference. For each poster, we will attempt to make space available for interactive demonstrations (if necessary and only upon request).
- Poster authors will be responsible for printing the poster, bringing it to the conference, and putting it up. Easels will be provided.

For further information please contact: posters@highperformancegraphics.org

Important Dates

All deadlines are at 11:59 pm Pacific Daylight Time (GMT-7).

Friday, April 22	Deadline for **OPTIONAL** paper abstract submissions
Friday, April 29	Deadline for paper submissions
Sunday, May 29	Notification of paper acceptance
Sunday, June 5	Revised papers due
Friday, July 1	Deadline for poster and Hot3D submissions
Sunday, July 10	Notification of poster and Hot3D acceptance
Friday-Sunday, August 5-7	Conference

Best Paper Award

An award of $500 will be given to the authors of the most outstanding paper presented at the event. The award is based on the accuracy, originality, and importance of the technical concept, the quality and readability of the manuscript, as well as the content and delivery of the verbal presentation. To qualify for this award, one or more of the authors must attend the conference and present the paper. The winner will be chosen by the organizing committee based on audience feedback and will be announced at the end of the conference.

Demonstrations

Presenters and participants are invited to bring prototypes and products for demonstration at the event. Demonstrations will be held during breaks and before and after the sessions. We highly encourage paper authors and industry presenters to demonstrate their systems. Please contact the organizing committee by email at general@highperformancegraphics.org to arrange for space or electrical connections that may be required for your demonstration.

Organization

General Chairs:
John Owens (University of California at Davis, USA)
Matt Pharr (Intel)

Program Chairs:
Carsten Dachsbache (Universität des Landes Baden-Württemberg, Germany)
Bill Mark (Intel)
Jacopo Pantaleoni (NVIDIA)

Papers Chairs:
Kurt Akeley (Microsoft Research)
Aaron Lefohn (Intel)
David Luebke (NVIDIA)

Poster Chairs:
Christiaan Gribble (Grove City College, USA)
Jens Kruger (Universität des Saarlandes, Germany)

Local Arrangements Chair:
Alexandra Fedorova (Simon Fraser, Canada)
Justin Hensley (AMD)

Publicity Chair:
Josh Steinhurst (Bucknell University, USA)

Treasurer:
Anselmo Lastra (University of North Carolina, USA)
Steve Molnar (NVIDIA, USA)