Jared Hoberock

Contact Information

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Professional Interests

The novel application of parallel architectures to all aspects of rendering

Education

University of Illinois Urbana-Champaign, Urbana, Illinois
Ph.D., Computer Science, August 2008

University of Missouri-Columbia, Columbia, Missouri
B.S., Computer Engineering, 2002, *Summa Cum Laude*

Professional Experience

NVIDIA Corporation, Santa Clara, California
Research Scientist **October 2008 - Current**
Member of the NVIDIA Research team:

- Development team member of OptiX, a software platform for parallel ray tracing
- Co-developer of Thrust, a codified approach to programming massively parallel processors

University of Illinois Urbana-Champaign, Urbana, Illinois
Research Assistant in Computer Graphics **August, 2002 - August, 2008**
Developed novel parallel algorithms for rendering global illumination.

NVIDIA Corporation, Santa Clara, California
Research Intern **May 2007 - August 2007**
Worked with the NVIDIA Research team:

- Investigated unique applications of massively parallel processors to ray tracing
- Researched techniques for eliminating incoherent behavior unique to graphics applications

NVIDIA Corporation, Berkeley, California
Film Team Intern **May 2006 - August 2006**
Worked with the Gelato Final Frame Renderer team:

- Investigated new GPU-assisted production quality rendering techniques
- Developed new GPU-based fast render preview features

Honors and Awards

NVIDIA Fellowship Recipient, 2007

NVIDIA Fellowship Recipient, 2005

National Merit Scholar, 1998

Publications

J. Hoberock and J. C. Hart. Importance Sampled Metropolis Light Transport, January, 2008.

J. Hoberock and Y. Jia. High-Quality Ambient Occlusion, GPU Gems 3, August, 2007.

N. Carr, J. Hoberock, K. Crane, and J. C. Hart. Rectangular Multi-chart Geometry Images, Eurographics Symposium on Geometry Processing, June, 2006.

N. Carr, J. Hoberock, K. Crane, and J. C. Hart. Fast GPU Ray Tracing of Dynamic Meshes using Geometry Images, Graphics Interface, June, 2006.

S. Hornus, J. Hoberock, S. Levebvre, and J. C. Hart. ZP+: Correct Z-Pass Stencil Shadows, ACM Symposium on 3D Graphics and Games, April, 2005.

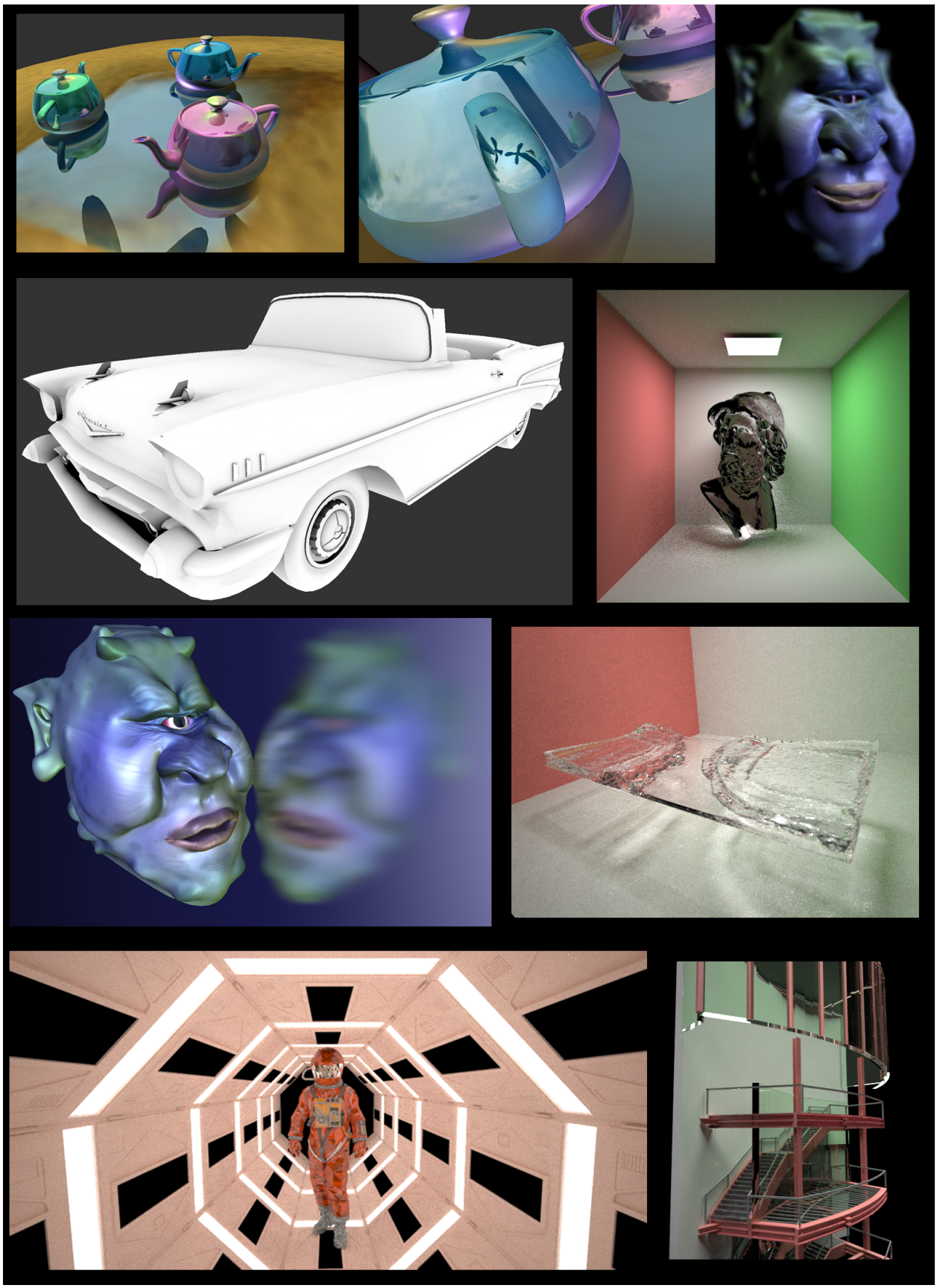

Figure 1: **Selected Images. Top**: Interactive GPU ray tracing of dynamic objects. **Upper middle**: Interactive ambient occlusion and unbiased light transport on the GPU. **Lower Middle**: Glossy reflections on the GPU and caustics synthesized with Metropolis light transport. **Bottom**: Noise-aware Metropolis light transport.