Kevin Egan

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EDUCATION

Fourth year Ph.D. Candidate in the Computer Science Department at Columbia University
Advisors: Ravi Ramamoorthi and Eitan Grinspun

MS in Computer Science from Columbia University, 2007

Sc.B. in Computer Science from Brown University, 2003

AWARDS

- **NSF Graduate Research Fellowship, awarded for Computer Graphics.**

MOVIE CREDITS

- ***The Chronicles of Narnia: The Lion, The Witch, and The Wardrobe*** **- Software Engineer.**

EMPLOYMENT

- **Research Intern, Pixar Animation Studios:** Emeryville, CA. 2009
  Evaluated current and experimental shadow algorithms for Pixar's next generation of lighting tools.
- **Rendering Software Engineer, Rhythm & Hues Studios:** Los Angeles, CA. 2004 - 2006
  Worked on new techniques, enhancements, and bug fixes for the software renderer as part of a five person team. My applied research for shadows and subsurface scattering has been used in films and commercials.
- **Intern Software Engineer, Neoptica:** San Francisco, CA. 2007
  Implemented shadowing and other effects on top of Neoptica's proprietary software for the Playstation 3.
- **Research Assistant, Rensselaer Polytechnic Institute:** Troy, NY. 2003 - 2004
  Worked on new techniques for multi-rigid-body problems.
- **Teaching Assistant, Brown University:** Providence, RI. 2000 - 2003
  Six semesters as a teaching assistant. Twice for Andy van Dam's computer graphics class. Head TA for John F. Hughes's graduate level computer graphics class.

PUBLICATIONS

(additional information and images are available on my website)

- **Frequency Analysis and Sheared Reconstruction for Rendering Motion Blur, SIGGRAPH 2009**
  A spacetime frequency analysis of motion blur leads to a novel sheared reconstruction filter.
- **A Precomputed Polynomial Representation for Interactive BRDF Editing with Global Illumination, Transactions on Graphics 2008**
  A new technique for editing complex materials in real-time with up to four bounces of global illumination.
- **Ray Tracing Depth Maps Using Precomputed Edge Tables, SIGGRAPH Sketches 2005**
  Optimized earlier soft shadow technique by Agrawala et al. in a sketch presented at SIGGRAPH 2005.
- **Fast, Practical and Robust Shadow Volumes, Technical Report 2003**
  Added new techniques for efficient shadow volume rendering in a paper published on NVIDIA's website.
- **Modeling Nonconvex Constraints Using Linear Complementarity, Technical Report 2003**
  Introduced a new technique for modeling any polyhedron within a LCP rigid body simulator.

SOFTWARE PROJECTS

- **Metropolis Light Transport:**
  Implemented the path generation and mutation algorithm for the global illumination algorithm. As a teaching assistant I implemented a modular system for students to incrementally complete the software project.
- **Operating Systems Lab:**
  Wrote a basic Unix operating system that included a kernel, virtual file system, disk file system, and virtual memory system. Wrote a multi-processor version of the kernel as a side-project.