

Rachel Rose

(formerly Rachel Heck)

heckr@cs.wisc.edu

5039 California St.

San Francisco, CA 94118

(415) 379-4497

Education

- 2003-2007 University of Wisconsin-Madison, *Madison, Wisconsin*. Doctor of Philosophy, 2007. Field: Computer Science (focused on Computer Graphics).
- 2001-2003 University of Wisconsin-Madison, *Madison, Wisconsin*. Master of Science, 2003. Field: Computer Science
- 1997-2001 Grinnell College, *Grinnell, Iowa*. Bachelor of Arts, 2001. Majors: Computer Science with Honors and English

Honors: Grinnell Trustee Honor Scholarship; Dean's List; Phi Beta Kappa; Member of the Grinnell College Mathematics and Computer Science Student Educational Policy Committee; Meritorious Rating in the Mathematical Contest in Modeling in 1999; Lynn Smith Prize for Excellence in Mathematics; Robert N. Noyce Technology Senior Student Award; UW Computer Science Summer Research Fellowship; Selected Alumni Member of the Grinnell Online Communities Advisory Committee; Grinnell Alumni Scholar

Significant Course Work: Algorithms; Animation; Automata, Formal Languages, and Computational Complexity; Combinatorics; Compilers; Computer Graphics; Computer Vision; Cryptography; Differential Geometry; Programming Languages; Rendering; Software Design; Stage Lighting; Studies in Shakespeare

Relevant Employment

- 9/2007-present *Research and Development Engineer, Industrial Light and Magic*
Develop and implement computer software for visual effects and video games.
- 1/2007-5/2007 *Teaching Assistant, University of Wisconsin-Madison*
Help students in Computer Game Technology with homework assignments. Help professor design the curriculum and grade assignments.
- 1/2002-8/2007 *Research Assistant, University of Wisconsin-Madison*
Specific research topic described below.
- 7/2006-9/2006 *Animation Programming Intern, Rockstar Games – San Diego*
Help develop new human animation technology for next generation Rockstar video games.
- 6/2005-9/2005 *Research and Development Associate, Rockstar Games – Vienna*
Help develop new human animation technology for next generation game consoles.
- 08/2001-12/2001 *Teaching Assistant, University of Wisconsin-Madison*
Instructor for the Introductory Programming Course (taught in Java).
- 05/2000-05/2001 *Head Research Assistant, Grinnell College*
Supervise up to thirteen undergraduate researchers. Specific research topic described below.
- 08/1999-05/2001 *Tutor in Computer Science, Grinnell College*
Tutor students who are taking Introductory Computer Science I and II.
- 08/1999-05/2001 *User Consultant, Grinnell College*
Help students, faculty, and staff in campus computer labs with computer and printer problems.
- 08/1998-05/2001 *Teaching Assistant, Grinnell College*
Help students in Introductory Computer Science I, II, and Compilers with labs and homework

assignments. Help professor grade Compilers homework assignments.

01/1998-05/2001 *Research Assistant, Grinnell College*
Specific research topics described below.

Research

Controlling Human Gaze, University of Wisconsin-Madison

I researched ways to control human gaze using an example-based approach that is highly informed by existing biomechanical literature.

Parameterized Motion Graphs, University of Wisconsin-Madison

I researched how to blend human motions from a motion collection in a controllable way by building graph structures that combine the features of parameterized motions with those of current graph-based motion transition techniques.

Motion Splicing, University of Wisconsin-Madison

I studied ways to reliably generate high-fidelity motion by splicing the upper-body action of one motion onto the lower-body locomotion of another.

Virtual Videography, University of Wisconsin-Madison

VV is a system for automatically producing production quality video of lectures from static camera data. In particular, I developed a model for a student's attention and a 2D virtual camera system that uses this attention model and the rules and heuristics of classroom videography to decide on a set of shots for the final video.

Clio, Grinnell College

I worked on a Web-based system called Clio that tracks and analyzes paths that students take through the Web.

HyperPass, Grinnell College

I helped develop a Web-based system for adding private, group, and public annotations to Web pages. HyperPass is intended for classroom use.

Blazer, Grinnell College

I worked on a Web-based system for creating and viewing a trail, a series of Web pages meant to be viewed in order. The system is intended for use in the classroom.

Independent Project

Plans

During my senior year of college, I independently designed and implemented an online community system for the Grinnell College community. This system has similarities to the "finger" program found on many operating systems and is also similar to a blog. The system was originally written in perl. Due to its popularity, it has been rewritten in PHP by the current maintainers and was moved to a private server. My Plans system is used by over 3000 current students, alumni, faculty, and staff.

Shipped Titles

May 2006 – Rockstar Games Presents Table Tennis (Research and Development 6/2005-9/2005)

Professional Activities

Paper Reviewer for SIGGRAPH, ACM Transactions on Graphics, Eurographics, IEEE Transactions on Visualization and Computer Graphics, and The Visual Computer Journal

Computer Languages

- Fluent: C, C++, Java, HTML, Perl, and Scheme
- Confident: Javascript, SQL, Python, and Lua
- Familiar: Multiple Assembly Languages, Prolog, and ML

Peer-Reviewed Papers and Videos

Heck, Rachel and Michael Gleicher. "Parametric Motion Graphs." **Proceedings of Symposium on Interactive 3D Graphics and Games 2007**, April 2007.

Heck, Rachel, Michael Wallick, and Michael Gleicher. "Virtual Videography." **ACM**

Transactions on Multimedia Computing, Communications, and Applications,
February 2007.

- Heck, Rachel, Michael Wallick, and Michael Gleicher. "Virtual Videography: A Video Demonstration." **Proceedings of ACM Multimedia 2006: Video Program**, October 2006.
- Heck, Rachel, Lucas Kovar, and Michael Gleicher. "Splicing Upper-Body Actions with Locomotion." **Proceedings of Eurographics 2006**, September 2006, (Acceptance Rate: 42/246 or ~17%). *Second Best Paper Award*.
- Wallick, Michael, Rachel Heck, Michael Gleicher. "Marker and Chalkboard Regions." **Proceedings of Mirage 2005**, March 2005.
- Gleicher, Michael, Rachel Heck, Michael Wallick. "A Framework for Virtual Videography." **Proceedings of SmartGraphics 2002**, June 2002.
- Glynn, Corinne, Rachel Heck, Sarah Luebke, Weichao Ma, Hilary Mason, Erin Nichols, Eleanor Raulerson, Izabela Staicut, Samuel A. Rebelsky. "Blazing Trails on the World-Wide Web." **Proceedings of Ed-Media 2000**. Vol. 1. p. 335-340. *Outstanding Paper Award*.