

Patrick E. Carlson

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Education

Iowa State University

PhD Candidate, Cumulative GPA: 3.68/4.0

Major: Human-Computer Interaction (HCI)

Ames, Iowa

2008–present

Simpson College

Bachelor of Arts, cum laude, Cumulative GPA: 3.715/4.0

Majors: Computer Science and Psychology

Indianola, Iowa

2003–2008

Experience

Research.....

Iowa State University

Improving Socialization in Large Open Source Communities (HCI Thesis Topic) *2010 - present*

Apply data mining in the development of algorithms and tools to improve the socialization of new developers in large Open Source communities. Under direction of Dr. Judy Vance.

Ames, Iowa

Bimanual Haptics for Virtual Assembly Tasks (Research Assistant)

2009 - present

Designed and analyzed studies examining various bimanual haptic device configurations and learning transfer for virtual assembly tasks. Under direction of Dr. Judy Vance.

Mentor/Support REU Students

Summer 2010

Helped coordinate three undergraduate REU students whose project entailed creating a physical mockup of a shopping cart which was then used in a virtual reality user study. Under direction of Dr. Judy Vance.

University of New Mexico

Research Experience for Undergraduates (REU)

Learned the basics of machine learning and worked on applying this to improving the routing of packets in a dynamic network. Under direction of Dr. Terran Lane.

Albuquerque, New Mexico

Spring 2006 - Fall 2007

Simpson College

Usability and Appeal of the Linux Desktop (Psychology Capstone)

Constructed and performed an experiment empirically contrasting usability and appeal of a 2D versus 3D Linux desktop.

Indianola, Iowa

Spring 2007 - Fall 2008

Origins of Human Cooperation and Altruism

Fall 2005 - Fall 2006

Simulated the evolution of cooperation/altruism using game theory techniques and genetic algorithms. Presented work at Argonne National Laboratory.

Teaching and Other.....

Iowa State University **Ames, Iowa**
ME/WLC 484/584: Technology, Globalization, and Culture (Teaching Assistant) *Fall 2013*
Graded homework, facilitated online class discussions

HCI/Psych 522: Scientific Methods in HCI (Teaching Assistant) *Spring 2013*

CS 309: Software Development Practices (Teaching Assistant) *Spring 2009*
Graded homework, helped students with documenting development

CS 207: Programming I (Teaching Assistant) *Fall 2008*
Assisted students with homework and basic programming concepts

Simpson College **Indianola, Iowa**
Student Technician *Nov 2005 - May 2006*
Helped students and faculty connect to the Internet and troubleshoot network issues

Mounds Park Academy **St. Paul, Minnesota**
Computer Technician *Summer 2002 - 2005, 2008*
Conducted laptop repair and software setup for 60 freshman students
Imaged and configured multiple computer labs

Professional Organizations

- Special Interest Group on Human-Computer Interaction (Student Member)
- Association for Computing Machinery (Student Member)

Groups and Activities

Iowa State University Badminton Club	2009 - present
Computational Design Synthesis: Summer Camp (Munich, Germany)	August 1-5, 2011
ISU Human-Computer Interaction Student Group Vice President	2010 - 2011
ISU Badminton Club Webmaster	2009 - 2012
Simpson College Math Club	2006 - 2008
Simpson College Computer Club	2003 - 2008

Honors

Outstanding Senior in Computer Science (Simpson College)	May 2008
Honorable Mention in the Mathematical Contest in Modeling (MCM)	2006, 2007, 2008
Floyd S. Doft Memorial Scholarship (Simpson College)	2007 - 2008
Psi Chi National Honor Society in Psychology	March 2007

Poster Presentations

- Carlson, Patrick & Vance, Judy M. (2013, April). *Who Should I Contact?: Helping New Developers Find Experts*. Poster presented at the Emerging Technologies Conference, Ames, IA. ***Awarded most interesting research project***

- Vance, Judy M. & Gilbert, Stephen & Oren, Michael & Pavlik, Ryan & Carlson, Patrick. (2012, July). *GOALI: A Hybrid Method to Support Natural Interaction of Parts in a Virtual Environment*. Poster presented at the NSF Engineering Research and Innovation Conference, Atlanta, GA.
- Peters, Anicia & Carlson, Patrick & Gilbert, Stephen & Vance, Judy M. (2012, April). *A Hybrid Method to Support Natural Interaction of Parts in a Virtual Environment*. Poster presented at the Emerging Technologies Conference, Ames, IA. ***Awarded most interesting research project***
- Carlson, Patrick & Vance, Judy M. & Nguyen, Tien & Blankenship, Kevin. (2011, April). *Social Technical Congruence: The Link Between Social Science and Technology*. Poster presented at the Emerging Technologies Conference, Ames, IA.
- Carlson, Patrick & Vance, Judy M. (2010, May). *An Evaluation of Asymmetric Interfaces for Bimanual Virtual Assembly With Haptics*. Poster presented at the ASME World Conference on Innovative Virtual Reality, Ames, IA.
- Carlson, Patrick. (2008, May). *Usability and Appeal of a 2D versus 3D Linux Operating System*. Poster presented at the Midwestern Psychological Association, Chicago, IL.

Publications

2012: Mike Oren, Patrick Carlson, Stephen Gilbert, and Judy M. Vance, Puzzle Assembly Training: Real World vs. Virtual Environment, In *Proceedings of the IEEE 2012 Virtual Reality Conference*, pages 1–4, Orange County, California, IEEE.

2012: Patrick Carlson and Nan Xiao, Experience and Recommendations for Distributed Software Development, In *Proceedings of the International Conference on Software Engineering (ICSE) Workshop on Collaborative Teaching of Globally Distributed Software Development*, pages 1–4, Zurich, Switzerland, ACM.

2011: Judy M. Vance, Stephen B. Gilbert, Michael Oren, Ryan Pavlik, and Patrick Carlson, GOALI: A Hybrid Method to Support Natural Interaction of Parts in a Virtual Environment, In *NSF Engineering Research and Innovation Conference Proceedings*, pages 1–4, Atlanta, Georgia.

2011: Patrick Carlson, Carl Kirpes, Ryan A. Pavlik, Judy M. Vance, Livien Yin, Terrence Scott-Cooper, and Troy Lambert, Comparison of Single-Wall Versus Multi-Wall Immersive Environments to Support a Virtual Shopping Experience, In *Proceedings of the ASME 2011 World Conference on Innovative Virtual Reality (WINVR2011)*, pages 1–5, Milan, Italy, ASME.