Patrick E. Carlson

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Education

Iowa State University	**Ames, Iowa**
PhD, Cumulative GPA: 3.68/4.0	*2008 - 2015*
Major: Human-Computer Interaction (HCI)	
Simpson College	**Indianola, Iowa**
Bachelor of Arts, cum laude, Cumulative GPA: 3.715/4.0	*2003 - 2008*
Majors: Computer Science and Psychology	

Experience

Sandia National Labs   **Albuquerque, New Mexico**

Data Scientist   *2017 - present*

Data analysis, software development, data virtualization, Tableau visualization, and UX reviews.

Renaissance Learning   **Wisconsin Rapids, Wisconsin**

User Experience Analyst   *2016 - 2017*

Perform remote usability testing on software prototypes, help with UI design, and develop and analyze survey data.

Iowa State University   **Ames, Iowa**

Improving Open Source Software Development (Dissertation Topic)   *2010 - 2015*

Apply data mining in the development of algorithms and tools to improve developer understanding of technical and social structure in large Open Source communities. Under direction of Dr. Judy Vance.

Bimanual Haptics for Virtual Assembly Tasks (Research Assistant)   *2009 - 2015*

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 Research Experience for Undergraduate (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   **Albuquerque, New Mexico**

Research Experience for Undergraduates (REU)   *Spring 2006 - Fall 2007*

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.

Simpson College   **Indianola, Iowa**

Usability and Appeal of the Linux Desktop (Psychology Capstone)   *Spring 2007 - Fall 2008*

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

Teaching and Other

Engineering/LAS Online Learning (Graduate Assistant)	*Fall 2014*
ME/WLC 484/584: Technology, Globalization, and Culture (Teaching Assistant)	*Fall 2013*
HCI/Psych 522: Scientific Methods in HCI (Teaching Assistant)	*Spring 2013*
CS 309: Software Development Practices (Teaching Assistant)	*Spring 2009*

CS 207: Programming I (Teaching Assistant) *Fall 2008*

Groups and Activities

Iowa State University Badminton Club *2009 - 2015*

ISU Human-Computer Interaction Student Group Vice President *2010 - 2011*

Simpson College Math Club *2006 - 2008*

Simpson College Computer Club *2003 - 2008*

Honors

Iowa State University Research Excellence Award *Spring 2015*

Outstanding Senior in Computer Science (Simpson College) *May 2008*

Honorable Mention in the Mathematical Contest in Modeling (MCM) *2006, 2007, 2008*

Psi Chi National Honor Society in Psychology *March 2007*

Recent 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***

○ 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***

Recent Publications

2016: Patrick Carlson, Judy M. Vance, and Meisha Berg, An evaluation of asymmetric interfaces for bimanual virtual assembly with haptics, *Virtual Reality*, pages 1–9.

2015: Patrick Carlson, Anicia Peters, Stephen Gilbert, Judy M. Vance, and Andy Luse, Virtual Training: Learning Transfer of Assembly Tasks, *IEEE Transactions on Visualization and Computer Graphics*, 21(6):770–782.

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.