Christopher Johnson

CONTACT
INFORMATION

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EDUCATION

The University of Tennessee, Knoxville, TN

Ph.D. Computer Science, August 2009
- ► Dissertation: Enhancing User Queries in Scientific Visualization with Distribution Information
- ► Advisor: Professor Jian Huang

M.S. Computer Science, December 2005

University of Northern Iowa, Cedar Falls, IA

B.S. Computer Science, May 2003, *summa cum laude*
- ► Completed two years as English double major
- ► Recipient of Science, Math, and Technology Symposium full-tuition scholarship

TEACHING
EXPERIENCE

Associate Professor   August 2020–present
James Madison University   Harrisonburg, VA
- ► Teach courses on full-stack web development, programming languages, and computer graphics

Associate Professor   August 2016–May 2020
Assistant Professor   August 2011–August 2016
University of Wisconsin, Eau Claire   Eau Claire, WI
- ► Taught courses on programming languages, mobile applications, game development, web systems, computer graphics, architecture, and introductory programming
- ► Investigate problems at the intersection of art and design, biology, communication disorders, and computer science with undergraduate researchers

Erskine Fellow   January–June 2019
University of Canterbury   Christchurch, New Zealand
- ► Taught post-graduate course on mobile computing using modern Android tooling like Kotlin

Instructor   Summers 2018–2019
Carleton College   Northfield, Minnesota
- ► Directed three-week summer camp on computational music and electronics for high schoolers

Lecturer   August 2008–May 2011
Iowa State University   Ames, IA
- ▸ Managed 10+ teaching assistants per semester
- ▸ Directed departmental residential learning community
- ▸ Met prospective students and led outreach exhibits and workshops

Adjunct Faculty   June–November 2006
William Penn University   Ames/Des Moines, IA
- ▸ Instructed students in College for Working Adults program in course on office software

Teaching Assistant   August 2003–December 2004
University of Tennessee   Knoxville, TN
- ▸ Directed recitation and lab sessions for courses on introductory C programming, graduate/undergraduate computational theory, and MATLAB

RESEARCH
EXPERIENCE

Visualization Researcher   January 2005–July 2009
University of Tennessee   Knoxville, TN
- ▸ Developed software for interactive exploration of scientific data
- ▸ Constructed scripting language for custom frequency-based feature queries

Predoctoral Associate   February 2007–August 2008
Ames Laboratory   Ames, IA
- ▸ Maintained interactive chemistry graphics software
- ▸ Incorporated stereo support and molecular construction tools

Visualization Intern   May–August 2004
Oak Ridge National Laboratory   Oak Ridge, TN
- ▸ Built tools for visualization of large-scale supernova simulation
- ▸ Scripted suite of tools for management of large display walls

OTHER WORK
EXPERIENCE

Game Engineer   April 2018–present
Filament Games   Madison, WI
- ▸ Developed learning games in an agile environment with teams of game designers, artists, and UX designers

iOS Intern   May 2013–August 2013
JAMF Software   Eau Claire, WI
- ▸ Engineered mobile apps to manage enterprise-scale OS X and iOS resources

Web Developer   September 2002–June 2003
Dyton Media, Inc.   Cedar Falls, IA
- ▸ Automated processing of textbook publishers' content into web-ready format

Resident Assistant   August 2000–May 2001
University of Northern Iowa   Cedar Falls, IA
- ▸ Mentored academically and socially a house of 50 residents
- ▸ Designed house programs and assisted in operation of hall affairs

PEER-
REVIEWED
PUBLICATIONS

- ▸ Monica M. McGill, Chris Johnson, James Atlas, Durell Bouchard, Chris Messom, Ian Pollock, and Michael James Scott. If memory serves: Towards designing and evaluating a game for teaching pointers to undergraduate students. In *Proceedings of the 2017 ITiCSE Conference on Working Group Reports*, ITiCSE-WGR '17, pages 25–46, New York, NY, USA, 2017. ACM.
- ▸ Chris Johnson and Adrian Abundez-Arce. Toward blocks-text parity. In *2017 IEEE 41st Annual Computer Software and Applications Conference*, volume 01, pages 413–419, July 2017.
- ▸ Chris Johnson. Toward computational making with Madeup. In *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education*, SIGCSE '17, pages 297–302, New York, NY, USA, 2017. ACM.
- ▸ Heather R. Buhr, Jerry K. Hoepner, Hannah Miller, and Chris Johnson. Aphasiaweb: development and evaluation of an aphasia-friendly social networking application. *Aphasiology*, 31(9):999–1020, 2017.
- ▸ Chris Johnson, Monica McGill, Durell Bouchard, Michael K. Bradshaw, Víctor A. Bucheli, Laurence D. Merkle, Michael James Scott, Z Sweedyk, J. Ángel Velázquez-Iturbide, Zhiping Xiao, and Ming Zhang. Game development for computer science education. In *Proceedings of the 2016 ITiCSE Working Group Reports*, ITiCSE '16, pages 23–44, New York, NY, USA, 2016. ACM.
- ▸ Chris Johnson and Peter Bui. Blocks in, blocks out: A language for 3d models. In *Blocks and Beyond Workshop, 2015 IEEE*, pages 77–82, Oct 2015.
- ▸ Hannah Miller, Chris Johnson, Heather Buhr, and Jerry Hoepner. Aphasiaweb: A social network for individuals with aphasia. In *Proceedings of the 14th international ACM SIGACCESS conference on Computers and accessibility*, ASSETS '12, pages 287–288, New York, NY, USA, 2012. ACM.
- ▸ Kate Sanders, Marzieh Ahmadzadeh, Tony Clear, Stephen H. Edwards, Mikey Goldweber, Chris Johnson, Raymond Lister, Robert McCartney, Elizabeth Patitsas, and Jaime Spacco. The Canterbury QuestionBank: Building a repository of multiple-choice CS1 and CS2 questions. In *Proceedings of the final reports on Innovation and technology in computer science education 2012 working groups*, ITiCSE-WGR '13, pages 33–52, New York, NY, USA, 2013. ACM.
- ▸ Chris Johnson. Madeup: A Mobile Development Environment for Programming 3-D Models. In *Proceedings of Programming Mobile and Touch*, ProMoTo 2013, September 2013.
- ▸ Chris Johnson, Anson Call, and Steve Herrnstadt. Learning elsewhere: tales from an extracurricular game development competition. In *Proceedings of the 18th ACM conference on Innovation and technology in computer science education*, ITiCSE '13, pages 70–75, New York, NY, USA, 2013. ACM.

- Barry Burd, João Paulo Barros, Chris Johnson, Stan Kurkovsky, Arnold Rosenbloom, and Nikolai Tillman. Educating for mobile computing: addressing the new challenges. In *Proceedings of the final reports on Innovation and technology in computer science education 2012 working groups*, ITiCSE-WGR '12, pages 51–63, New York, NY, USA, 2012. ACM.
- Paul Wagner and Chris Johnson. MOBILE: a MOBile Instructional Laboratory Environment for hands-on information technology education. In *Proceedings of the 13th annual conference on Information technology education*, SIGITE '12, pages 115–120, New York, NY, USA, 2012. ACM.
- Chris Johnson. Speccheck: automated generation of tests for interface conformance. In *Proceedings of the 17th ACM annual conference on Innovation and Technology in Computer Science Education*, ITiCSE '12, pages 186–191, New York, NY, USA, 2012. ACM.
- C. Ryan Johnson, Markus Glatter, Wesley Kendall, Jian Huang, and Forrest Hoffman. Querying for feature extraction and visualization in climate modeling. In *ICCS 2009: Geo Computation*, volume 5545 of *Lecture Notes in Computer Science*, pages 416–425. Springer, 2009.
- C. Ryan Johnson and Jian Huang. Distribution driven visualization of volume data. *IEEE Transactions on Visualization and Computer Graphics*, 15(5):734–746, 2009.
- Robert Sisneros, C. Ryan Johnson, and Jian Huang. Concurrent viewing of multiple attribute-specific subspaces. In *Proceedings of EuroVis Conference*. Eurographics Association, 2008.
- Jinzhu Gao, Jian Huang, C. Ryan Johnson, Scott Atchley, and James Arthur Kohl. Distributed data management for large volume visualization. In *Proceedings of IEEE Visualization*, pages 183–189, Minneapolis, MN, October 2005. IEEE Computer Society.

GRANTS AND AWARDS

- Excellence in Teaching Award, University of Wisconsin Eau Claire, 2017
- Partnering with K-12 Teachers to Turn 3D Printing into 3D Thinking, Nordson Foundation Grant, Fall 2017–Spring 2018, $6250
- Automating Animation with Machine Learning, UWEC Office of Research and Sponsored Programs Faculty-Student Research Collaboration Grant, Summer 2017, $4600
- Coding in Space: Analyzing Programmer Behaviors in a 3D Modeling Context, UWEC Center for Excellence in Teaching and Learning Scholarship of Teaching and Learning Grant, Summer 2017, $6900
- ACM Inroads Haiku Contest, Honorable Mention, June 2017
- Madeup: A Programming Language for Making Things Up, UWEC Office of Research and Sponsored Programs Faculty-Student Research Collaboration Grant, Fall 2015–Spring 2016, $1998
- Madeup: A Programming Language for Making Things Up, Kickstarter, 2015
- Lab Renovation Grant, Jamf Software, 2015, $17000
- ESEA Title II-B Mathematics and Science Partnership, Wisconsin Department of Public Instruction, 2014–2017, $220,770

- ▸ Wisconsin Teaching Fellowship, University of Wisconsin System, 2014–2015
- ▸ Keystrokes: A System for Capturing Textual Development in Video-based Learning, SIGCSE Special Projects grant, Spring 2013–Spring 2014, $5000
- ▸ Visualization and Analysis of Niobium Tin and Other Superconducting Materials, UWEC Office of Research and Sponsored Programs Faculty-Student Research Collaboration Grant, Fall 2013–Spring 2014, $2800
- ▸ An Aphasia-Aware Social Network, UWEC Office of Research and Sponsored Programs Faculty-Student Research Collaboration Grant, Fall 2012–Spring 2013, $2500
- ▸ Buster: a Budged-minded Cluster for Classroom Computation, UWEC Office of Research and Sponsored Programs Faculty-Student Research Collaboration Grant, Fall 2012–Spring 2013, $2800
- ▸ Reader-animated Storybooks, UWEC Office of Research and Sponsored Programs Faculty-Student Research Collaboration Grant, September 2011–May 2012, $2800
- ▸ Analysis of Fish Media Using Computer Vision, UWEC Office of Research and Sponsored Programs Faculty-Student Research Collaboration Grant, September 2011–May 2012, $2800
- ▸ Iowa State University Game Development Competition, Motorola Foundation Innovation Generation grant, July 2010–June 2011, $50,000, Acceptance rate: 23%
- ▸ Modeling Reality: Bringing Market Relevance to an Undergraduate Curriculum in Interactive 3-D Gaming and Computer Graphics, Iowa State University Miller Faculty Fellowship, July 2010–June 2011, $10,000
- ▸ Not Just Nerds: Reintroducing Computer Science with Collaboration and Creativity, Iowa State University women's enrichment mini-fund grant, April 2010–May 2011, $3300

POSTERS, WORKSHOPS, AND PRESENTATIONS

- ▸ Direct Manipulation for Computational Making. Talk at SPLASH-E 2020. November 2020.
- ▸ Direct Manipulation and SVG: Creating and Adjusting Graphics Programmatically and Visually. Talk at FabLearn 2020. October 2020.
- ▸ Learning Music Theory Through Code with Deltaphone. VOICES 2019. September 2019.
- ▸ Computational Making With Madeup. Workshop at STEM in Education 2018. Brisbane, Australia. November 2018.
- ▸ Computational Making With Madeup. Demo at FabLearn 2017. Palo Alto, CA. October 2017.
- ▸ Coding in Three Dimensions. Summer camp for middle schoolers at L.E. Phillips Public Library. Eau Claire, WI. Summer 2017.
- ▸ Coding in All the Dimensions. Exhibit at Mini-Maker Fair. St. Paul, MN. June 2017.
- ▸ Mixing Code and 3D Printers with Madeup. Workshop at SIGCSE 2016. Memphis, TN. March 2016.

- ► Computing in the Third Dimension. Invited talk in UWEC Ask a Scientist Series. Acoustic Cafe, Eau Claire, WI. April 2016.
- ► Madeup: A Language for Making Things Up. Poster at SIGCSE 2015. Kansas City, MO. March 2015.
- ► AphasiaWeb: Development and Evaluation of an Aphasia-Friendly Social Networking Application. Poster at ASHA Convention. Chicago, Illinois. November 2013.
- ► Lessons Learned from an Extracurricular Game Development Competition. Presentation at International Digital Media and Arts Association Conference. Savannah, GA. October 2011.
- ► SpecCheck: Automated Generation of Tests for Interface Conformance. Presentation at Iowa Undergraduate Computer Science Consortium. Ames, IA. April 2011.
- ► Triangles: A 3-point Talk. Invited talk in Relationships: Drawn, Analog to Digital exhibit at Iowa State University Museums. Ames, IA. October 2010.
- ► Interactive Electronic Programmable Art. Workshop for Program for Women in Science and Engineering's Taking the Road Less Traveled conferences. Ames, IA. April, October 2010; April 2011.
- ► Computer Dissection. Workshop for OPPTAG Investigation Series. Ames, IA. March 2010.
- ► Programming LEGO Mindstorms Using Java. Exhibit at First LEGO League Regional Competition. Marshalltown, IA. December 2010.
- ► Wii-powered Virtual Ribbon Cutting. Technical demo for Farrington Innovation Center grand opening. Ames, IA. November 2009.
- ► RingPong—Pong over a circular network. Interactive exhibit at VEISHEA. Ames, IA. April 2009.

TECHNICAL SERVICE
- ► Reader. Advanced Placement Computer Science Principles. June 2017.
- ► Member. McIntyre Library Makerspace Task Force. March 2017–present.
- ► Reviewer. ACM ITiCSE Conference. 2017–present.
- ► Open-source contributor. Blockly. September 2016–present.
- ► Member. Chippewa Falls School District Technology Advisory Board. December 2015–present.
- ► Reviewer. UWEC Office of Research and Sponsored Programs Faculty-Student Research Collaboration Grant. Fall 2013–Fall 2015.
- ► Member. ACM SIGCSE. August 2010–present.
- ► Reviewer. International Conference on Computational Science. 2012 and 2013.
- ► Reviewer. ACM SIGCSE Conference. 2012–present.
- ► Reviewer. IEEE Computer Software and Applications. July 2010.
- ► Reviewer. IEEE Pacific Visualization. March 2010.
- ► Reviewer. IEEE VisWeek. 2006, 2007, and 2009.
- ► Open-source contributor. wxWidgets. December 2007–July 2008.