

Sean McKenna

Ph.D. Candidate in Computing

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education

- Ph.D. in Computing: Graphics and Visualization** 2012 – 2017
University of Utah, Salt Lake City UT, Advisor: Dr. Miriah Meyer
Thesis: “The Design Activity Framework: Analyzing the User-Centered Design Process for Data Visualization”
- B.A. in Computer Science & Physics, Minor: Chemistry** 2008 – 2012
Cornell College, Mount Vernon IA, Summa Cum Laude

technical skills

Javascript (ES6, D3) HTML5 & CSS3 Python Java C++ \LaTeX SQL R

professional experience

- Research Assistant, Scientific Computing and Imaging Institute**, Salt Lake City UT Fall 2012 – present
- Crafted and evaluated worksheets to guide students through the visualization design process.
 - Developed a scatterplot technique (R, C++, OpenGL) for exploring correlation of large datasets.
- Visualization Intern, Microsoft Research**, Redmond WA Summer 2016
- Built a Javascript library (ES6, D3) to interactively create scrolling, animated visualizations.
 - Conducted a study on Amazon Mechanical Turk to investigate engagement of visualization stories.
- Visualization Intern, MIT Lincoln Laboratory**, Lexington MA Summer 2014 & Spring 2015
- Created a web dashboard (D3, Bootstrap) to visualize patterns in network activity.
 - Implemented a backend (Python, Bash) for updating the dashboard daily using JSON.
- Research Intern, NASA's Space Telescope Science Institute**, Baltimore MD Summer 2011
- Contributed a web query interface (jQuery, SQL) to a Hubble Space Telescope archival research project.
 - Collaborated with 9 others, including astronomers, to visualize user-marked craters on the Moon.
- Stage Manager for Legally Blonde, Everest Academy for the Arts**, Wausau WI Summer 2012
- Managed a cast and crew of 60 to conduct professional rehearsals and work sessions.
 - Headed technical operation of the crew by consistently calling cues in each production.
- Chair of Appropriations, Student Senate**, Cornell College Spring & Fall 2011
- Monitored and audited a \$250,000 budget distributed over 50 student organizations.
 - Coordinated a streamlined rewrite of the financial by-laws with both finance and executive committees.

teaching experience

- Teaching Assistant, Introduction to Visualization (CS-6630)**, University of Utah Fall 2016
- Created and presented a lecture for a graduate course (65 students).
 - Mentored 13 students through the design process of their cumulative projects.
- Teaching Assistant, Algorithms and Data Structures (CS-2420)**, University of Utah Spring 2016
- Presented 3 lectures for an undergraduate course (175 students).
 - Conceived a final project, wrote the description, and created test cases using Python and Java.
- Teaching Assistant, Introduction to Visualization (CS-6630)**, University of Utah Fall 2013
- Presented 5 lectures for a graduate course (60 students).
 - Rewrote 2 assignments that use Tableau, Java, and the Processing library.

awards & fellowships

Winner , Teapot Rendering Competition, University of Utah	2013
Winner , Challenge at the Human Brain Mapping Hackathon, Allen Institute for Brain Science	2013
Wayne Brown Fellowship (\$30,000), University of Utah	2012
Phi Beta Kappa , Cornell College	2011

service

Program Committee Member , Visualization for Cybersecurity Symposium	2015 – 2016
▸ Examined 7 submissions for publication in an internationally peer-reviewed symposium.	
C.S. Graduate Student Advisory Committee , University of Utah	2013 – 2015
▸ Voted on the retention, promotion, and tenure of professors in the CS department.	

selected publications

journal:

Visual Narrative Flow: Exploring Factors Shaping Data Visualization Story Reading Experiences	2017
S. McKenna, N. Henry Riche, B. Lee, J. Boy, M. Meyer. <i>Computer Graphics Forum (EuroVis)</i> , to appear.	
BubbleNet: A Cyber Security Dashboard for Visualizing Patterns	2016
S. McKenna, D. Staheli, C. Fulcher, M. Meyer. <i>Computer Graphics Forum (EuroVis)</i> , 35(3):281–290.	
s-CorrPlot: An Interactive Scatterplot for Exploring Correlation	2016
S. McKenna, M. Meyer, C. Gregg, S. Gerber. <i>Journal of Computational and Graphical Statistics</i> , 25(2):445–463.	
Design Activity Framework for Visualization Design	2014
S. McKenna, D. Mazur, J. Agutter, M. Meyer. <i>IEEE Transactions on Visualization and Computer Graphics (InfoVis)</i> , 20(12):2191–2200.	

conference:

Unlocking User-Centered Design Methods for Building Cyber Security Visualizations	2015
S. McKenna, D. Staheli, M. Meyer. <i>Proceedings of the Twelfth International Symposium on Visualization for Cyber Security (VizSec)</i> .	
Visualization Evaluation for Cyber Security: Trends and Future Directions	2014
D. Staheli, T. Yu, J. Crouser, S. Damodaran, K. Nam, D. O’Gwynn, S. McKenna, L. Harrison. <i>Proceedings of the Eleventh International Symposium on Visualization for Cyber Security (VizSec)</i> .	

in-progress:

Worksheets for Guiding Novice Students through the Visualization Design Process	
S. McKenna, A. Lex, M. Meyer.	