

RESEARCH STATEMENT

My research aims to help end user programmers more effectively *author*, *understand*, and *reuse* code and data through the design of new languages and program visualization tools. New programming languages can raise the level of abstraction to focus on relevant domain-specific details. Improved tools can better align with and enrich end user programmers' mental models. Visualizing program state and behavior promotes program understanding, and can proactively surface surprising or incorrect results.

EDUCATION

PHD STUDENT COMPUTER SCIENCE AND ENGINEERING

MS COMPUTER SCIENCE AND ENGINEERING, *June 2016*

Paul G. Allen School of Computer Science & Engineering

University of Washington (UW), Seattle, WA

Advisor: Jeffrey Heer

September 2014 - Present

BS COMPUTER SCIENCE

Harvey Mudd College (HMC), Claremont, CA

Advisor: Ben Wiedermann

August 2010 - May 2014

PUBLICATIONS

Interactive Repair of Tables Extracted from PDF Documents on Mobile Devices.

Jane Hoffswell and Zhicheng Liu. *ACM Human Factors in Computing Systems (CHI)*, 2019.

Conditionally accepted to CHI 2019. <https://doi.org/10.1145/3290605.3300523>

SetCoLa: High-Level Constraints for Graph Layout.

Jane Hoffswell, Alan Borning, Jeffrey Heer.

Computer Graphics Forum (Proc. EuroVis), 2018. <https://doi.org/10.1111/cgf.13440>

Augmenting Code with In Situ Visualizations to Aid Program Understanding.

Jane Hoffswell, Arvind Satyanarayan, Jeffrey Heer.

ACM Human Factors in Computing Systems (CHI), 2018. <https://doi.org/10.1145/3173574.3174106>

Supporting Patient-Provider Collaboration to Identify Individual Triggers using Food and Symptom Journals.

Jessica Schroeder, **Jane Hoffswell**, Chia-Fang Chung, James Fogarty, Sean Munson, Jasmine Zia.

ACM Computer-Supported Cooperative Work (CSCW), 2017. <https://doi.org/10.1145/2998181.2998276>

Visual Debugging Techniques for Reactive Data Visualization.

Jane Hoffswell, Arvind Satyanarayan, Jeffrey Heer.

Computer Graphics Forum (Proc. EuroVis), 2016. <https://doi.org/10.1111/cgf.12903>

Reactive Vega: A Streaming Dataflow Architecture for Declarative Interactive Visualization.

Arvind Satyanarayan, Ryan Russell, **Jane Hoffswell**, Jeffrey Heer.

IEEE Trans. Visualization & Comp. Graphics (Proc. InfoVis), 2016. <https://doi.org/10.1109/TVCG.2015.2467091>

HONOS AND AWARDS

- 2014 Jeff Dean - Heidi Hopper Endowed Regental Fellowship Recipient
- 2014 Harvey Mudd College Computer Science Clinic Poster Award
- 2014 Honorable Mention CRA Undergraduate Research Award Competition
- 2011-2014 Harvey Mudd College Dean's List
- 2010 International Baccalaureate

PROFESSIONAL EXPERIENCE

- Summer 2018
SEATTLE, WA **RESEARCH INTERN, ADOBE RESEARCH**
Interactive Repair of Tables Extracted from PDF Documents on Mobile Devices
Advisor: Leo Zhicheng Liu. Conducted research on the future of dynamic PDF documents and the analysis and reuse of PDF tables for dynamic use cases on mobile devices.
- 2013-2014
CLAREMONT, CA **PROJECT MANAGER, CAPSTONE PROJECT, HMC COMPUTER SCIENCE DEPARTMENT**
Visualizing and Exploring Performance Data alongside VMware
Advisor: Melissa O'Neill. Project Manager for a senior capstone project with VMware. Developed a dashboard for visualizing system performance using D3.js.
- Summer 2013
CLAREMONT, CA **UNDERGRADUATE RESEARCH ASSISTANT, HMC COMPUTER SCIENCE DEPARTMENT**
Visualizing the Graphical Execution of Abstract Program Traces
Advisor: Ben Wiedermann. Modified the UC Santa Barbara JavaScript Abstract Interpreter to output information about the abstract program trace and implemented a tool for visualizing program traces using D3.js.
- Summer 2012
CLAREMONT, CA **UNDERGRADUATE RESEARCH ASSISTANT, HMC COMPUTER SCIENCE DEPARTMENT**
Large Scale, Educational Video Games for Middle School Students
Advisor: Elizabeth Sweedyk. Developed a math-based game for the iPad that teaches children about ratios by taking advantage of the ratio-based behavior of mixing paint.

WORKSHOPS AND PRESENTATIONS

- Spring 2019
GLASGOW, UK **LANGUAGES & VISUALIZATIONS TO ENABLE EFFECTIVE END USER PROGRAMMING.**
Jane Hoffswell. *ACM Human Factors in Computing Systems Extended Abstracts (CHI EA)*, 2019. To appear at CHI 2019. <https://doi.org/10.1145/3290607.3299067>
- Spring 2015
CAGLIARI, ITALY **DEBUGGING VEGA THROUGH INSPECTION OF THE DATA FLOW GRAPH.**
Jane Hoffswell, Arvind Satyanarayan, Jeffrey Heer. *EuroVis Workshop on Reproducibility, Verification, and Validation in Visualization (EuroRV3)*, 2015.
<https://doi.org/10.2312/eurorv3.20151144>
- Spring 2014
SAN DIEGO, CA **VISUALIZING THE GRAPHICAL EXECUTION OF ABSTRACT PROGRAM TRACES.**
Southern California Celebration for Women in Computing.
- Fall 2013
LOS ANGELES, CA **VISUALIZING THE GRAPHICAL EXECUTION OF ABSTRACT PROGRAM TRACES.**
Southern California Programming Languages and Systems Workshop.

TEACHING EXPERIENCE

- 2016-2017
SEATTLE, WA **TEACHING ASSISTANT, UW PAUL. G. ALLEN SCHOOL OF COMPUTER SCIENCE & ENGINEERING**
Professor: Jeffrey Heer. Graded coursework, held office hours, and led tutorial sessions for the graduate (Spring 2016) and undergraduate (Spring 2017) Data Visualization courses.
- Winter 2014
SEATTLE, WA **TEACHING ASSISTANT, UW MASTERS IN HUMAN COMPUTER INTERACTION + DESIGN**
Professor: Jeffrey Heer. Helped to develop the course curriculum. Tutored and graded coursework for students studying User Interface Software & Technology (Winter 2014).
- 2012-2014
CLAREMONT, CA **TUTOR AND GRADER, HMC COMPUTER SCIENCE DEPARTMENT**
Tutored and graded classes on Programming Languages (Spring 2014), Artificial Intelligence (Spring 2014), Software Development (Spring 2013, Fall 2013), and the Principles of Computer Science (Fall 2012).

LEADERSHIP AND VOLUNTEER EXPERIENCE

- 2017-Present **REVIEWER** for Transactions on Visualization and Computer Graphics (TVCG 2018), IEEE Visualization Conference (VIS 2018), ACM Symposium on User Interface Software and Technology (UIST 2018, UIST 2017), and ACM Conference on Human Factors in Computing Systems (CHI 2019, CHI 2017).
- Winter 2018
SEATTLE, WA **HCI VISIT DAYS COORDINATOR, UW COMPUTER SCIENCE & ENGINEERING**
Organized group activities and one-on-one meetings for admitted graduate students.
- Fall 2016
SEATTLE, WA **GRADUATE STUDENT ADMISSIONS VOLUNTEER, UW COMPUTER SCIENCE & ENGINEERING**
Reviewed graduate student admissions applications.
- Fall 2015
SEATTLE, WA **NEW GRADUATE ORIENTATION LEADER, UW COMPUTER SCIENCE & ENGINEERING**
Coordinated talks from current students and faculty for incoming PhD students. Organized activities and lead the two-day orientation.
- Fall 2015
SEATTLE, WA **PROJECT MANAGER, USLI ROCKETRY TEAM, HARVEY MUDD COLLEGE**
Founder and project manager of a NASA sponsored University Student Launch Initiative (USLI) rocketry team that designed and launched a rocket with a scientific payload.