

## ADAM RULE

Oregon Health & Science University  
3181 SW Sam Jackson Park Rd  
Mail Code: BICC  
Portland, OR 97239-3098

rulea@ohsu.edu  
adamrule.com

## RESEARCH INTERESTS

Human-Computer Interaction, Human-Centered Data Science, Computational Notebooks, Cognitive Science, Health Informatics, Electronic Health Records

My research focuses on the design and use of data analysis software. I study how analysts currently document and perform their work and aim to make interactive documentation systems that encourage analytic and collaborative best practices.

## EDUCATION

- 2013 - 2018 University of California, San Diego  
PhD, *Cognitive Science*  
Advisor: Jim Hollan  
Committee: Gloria Mark, Brad Voytek, Bill Griswold, Philip Guo, Robert El-Kareh
- 2011 - 2013 University of Washington, Seattle  
MS, *Human Centered Design & Engineering*
- 2008 - 2011 University of Illinois, Urbana-Champaign  
BS, *Industrial Engineering* — HIGHEST HONORS

## AWARDS, HONORS

### AWARDS

- 2018 Honorable Mention, CHI 2018 — top 5% of all submissions  
2016 Outstanding Teaching Award, Cognitive Science Department, Winter 2016  
2012 Honorable Mention, HRI 2012 — top 5% of all submissions  
2012 Microsoft Design Expo — Best Presentation


### FELLOWSHIPS

- 2019 - PRES National Library of Medicine Postdoctoral Training Grant  
2014 - 2017 National Library of Medicine Predoctoral Training Grant — 3 years tuition & stipend

## CONFERENCE PUBLICATIONS

- C5 **Adam Rule**, Isaac Goldstein, Michelle Hribar, Michael Chiang. Clinical Documentation as End-User Programming. *In Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, (To Appear) 2020
- C4 **Adam Rule**, Aurélien Tabard, Jim Hollan. Exploration and Explanation in Computational Notebooks. *In Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, 2018 – **HONORABLE MENTION, TOP 5% OF SUBMISSIONS**



- C3 **Adam Rule**, Steven Rick, Michael Chiu, Phillip Rios, Shazia Ashfaq, Alan Calvitti, Wesley Chan, Nadir Weibel, Zia Agha. Validating free-text order entry for a note-centric EHR. In *Proceedings of the American Medical Informatics Association Annual Meeting (AMIA)*, 2015
- C2 **Adam Rule**, Aurélien Tabard, Karen Boyd, Jim Hollan. Restoring the Context of Interrupted Work with Desktop Thumbnails. In *Proceedings of the Cognitive Science Society Annual Meeting (CogSci)*, 2015
- C1 **Adam Rule**, Jodi Forlizzi. Designing interfaces for multi-user, multi-robot systems. In *Proceedings of the ACM Conference on Human Robot Interaction (HRI)*, 2012 —  
 **HONORABLE MENTION, TOP 5% OF SUBMISSIONS**

### JOURNAL PUBLICATIONS

- J6 Brad Henriksen, Isaac Goldstein, **Adam Rule**, Abigail Huang, Haley Dusek, Austin Igelman, Michael Chiang, Michelle Hribar. Electronic Health Records in Ophthalmology: Source and Method of Documentation. *American Journal of Ophthalmology*, (In Press) 2019
- J5 **Adam Rule**, Michelle Hribar, Michael Chiang. Using Electronic Health Record Audit Logs to Study Clinical Activity: A Systematic Review of Aims, Measures, and Methods. *Journal of the American Medical Association (JAMIA)*, (In Press) 2019
- J4 Michelle Hribar, **Adam Rule**, Abigail Huang, Haley Dusek, Isaac Goldstein, Bradley Henriksen, Wei-Chun Lin, Austin Igelman, Michael Chiang. Redundancy of Progress Notes for Serial Office Visits. *Ophthalmology*, (In Press) 2019
- J3 **Adam Rule**, Amanda Birmingham, Cristal Zuniga, Ilkay Altintas, Shih-Cheng Huang, Rob Knight, Niema Moshiri, Mai H. Nguyen, Sara Brin Rosenthal, Fernando Pérez, Peter W. Rose. Ten Simple Rules for Writing and Sharing Computational Analyses in Jupyter Notebooks. *PLoS Computational Biology*, 15(7): e1007007, 2019
- J2 **Adam Rule**, Ian Drosos, Aurélien Tabard, Jim Hollan. Aiding Collaborative Reuse of Computational Notebooks with Annotated Cell Folding. *Proceedings of the ACM, Human-Computer Interaction*, 1(CSCW), 2018
- J1 **Adam Rule**, Aurélien Tabard, Jim Hollan. Using Visual Histories to Reconstruct the Mental Context of Suspended Activities. *Human-Computer Interaction*, 32(5-6), 2017

### DOCTORAL CONSORTIUM, WORKSHOP & POSTER PUBLICATIONS

- W1 **Adam Rule**, Aurélien Tabard, Jim Hollan. Traces: A Flexible, Open Source Activity Tracker for Workplace Studies. *Workshop on the Quantified Workplace at the ACM Conference on Computer Supported Cooperative Work (CSCW)*, 2017
- P3 **Adam Rule**, Erin Gillespie, Nadir Weibel, Todd Pawlicki. Design Thinking in Radiation Oncology. *Human Factors and Ergonomics Society Healthcare Symposium*, 2016
- P2 **Adam Rule**, Aurélien Tabard, Jim Hollan. Thinking in 4D: Preserving and Sharing Mental Context Across Time. In *Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing Companion (CSCW)*, 2016

- P1 Karen Boyd, **Adam Rule**, Aurélien Tabard, Jim Hollan. Human Values in Tracking and Sharing Computer-Mediated Activity at Work. In *Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing Companion (CSCW)*, 2016
- D1 **Adam Rule**. Visualizing Computer Activity to Support the Resumption of Long-term Creative Work. In *Proceedings of the SIGCHI Conference on Creativity & Cognition*, 2015

## DISSERTATION

- 2018 The Design and Use of Computational Notebooks  
Adam Rule  
*Cognitive Science*, UC San Diego

## MENTORING & ADVISING

- 2019-Present OREGON HEALTH & SCIENCE UNIVERSITY  
Haley Dusek (MD)  
Jimmy Chen (MD)  
Michael Aaby (BS)
- 2013 - 2018 UNIVERSITY OF CALIFORNIA, SAN DIEGO  
Azeem Ghumman (MS Thesis) — Software Engineer @ Zoon  
Rizwan Ahmad (MS Thesis) — Sr. Software Engineer @ Notebowl  
Jonas Kemper (MS) — Software Engineer @ McKinsey Dig. Labs  
Kendall Youngstrom (BS Thesis) — UX Researcher @ Google  
Ram Dixit (BS Thesis) — MS Student @ University of Texas, Houston  
Karen Boyd (BS) — PhD Student @ University of Maryland  
Adam Powers (BS) — Information Developer @ Tealium  
Regina Cheng (BS) — PhD Student @ University of Washington  
Nathan Hassanzadeh (BS)  
Katya Noble (BS) — UX Design Intern @ Axos Bank  
Allison Reiss (BS) — Software Engineer @ Kiran Analytics  
Evan Schmitz (BS) — UX Researcher @ Microsoft

## TEACHING EXPERIENCE

- Summer 2019 BMI 510 — Human Computer Interaction in Biomedicine  
*Mentored Teaching with Michelle Hribar and Michael Chiang, OHSU*
- Spring 2018 COGS 10 — Cognitive Consequences of Technology  
*Teaching Assistant with Jim Hollan, UC San Diego*
- Winter 2017 DSGN 1 — Design of Everyday Things  
*Teaching Assistant with Jim Hollan, UC San Diego*
- Winter 2016 CSE170/COGS 120 — HCI Design - Outstanding Teaching Award  
*Teaching Assistant with Scott Klemmer, UC San Diego*  
**HEAD TA OF 8 TEACHING ASSISTANTS**

- Winter 2015 COGS 102b — Cognitive Ethnography  
*Teaching Assistant with Melanie McComsey, UC San Diego*
- Spring 2014 COGS 102c — Cognitive Design Studio  
*Teaching Assistant with Jim Hollan, UC San Diego*

## PROFESSIONAL EXPERIENCE

- 2019 - Present Oregon Health & Science University  
*Postdoctoral Scholar*  
Advisors: Michael Chiang, Michelle Hribar  
Researching design and use of electronic health records
- 2013-2018 University of California San Diego, Design Lab  
*Research Assistant*  
Advisors: Jim Hollan  
Researched design and use of computational notebooks and electronic health records
- Summer 2012 Amazon  
*UX Research Intern*  
Conducted usability studies of shopping interfaces for clothing and home goods
- Summer 2012 PATH  
*UX Research Intern*  
Evaluated usability of inventory software for medical equipment
- Fall 2011 University of Washington, CHILL Lab  
*Directed Research Group*  
Conducted interviews informing design of BabySteps development tracking app
- Summer 2011 Carnegie Mellon University, QoLT Center  
*Research Intern*  
Conducted research on the design of interfaces for controlling robot teams
- Summer 2010 Intel Research  
*User Research Intern*  
Conducted research on the design of home assistive robot

## SERVICE

### REVIEWING

CHI (2016,19,20), CSCW (2019), IUI (2019), AMIA (2015,16,19), Ophthalmology (2019), Applied Clinical Informatics (2019)

### OTHER SERVICE

- 2019 AMIA Student Paper Competition Committee
- 2019 EXITO Career Panel — Research Diversity program at Portland State University

## INVITED TALKS

Composition of Clinical Documentation  
*Oregon Health & Science University, Casey Eye Institute, June 2019*

The Design and Use of Computational Notebooks  
*University of Washington, Interactive Data Lab, Dec 2018*  
*Oregon Health & Science University, Medical Informatics, Nov 2018*

Field Methods in Human Computer Interaction  
*Guest Lecture, COGS 13 (Field Methods) UC San Diego, May 2018*

Exploration and Explanation in Computational Notebooks  
*UC Berkeley, Data Science Institute, Dec 2017*

Cognitive Science & Design  
*Guest Lecture, COGS 1 (Intro to Cognitive Science) UC San Diego, Nov 2016*  
*Guest Lecture, COGS 1 (Intro to Cognitive Science) UC San Diego, Oct 2015*