ADAM RULE

Oregon Health & Science University

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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 - 2021	National Library of Medicine Postdoctoral Training Grant
2014 - 2017	National Library of Medicine Predoctoral Training Grant

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

J7   Christine Sinsky, **Adam Rule**, Genna Cohen, Brian Arndt, Tait Shanafelt, Christopher Sharp, Sally Baxter, Ming Tai-Seale, Sherry Yan, You Chen, Julia Adler-Milstein, Michelle Hribar. Metrics for assessing physician activity using electronic health record log data. *Journal of the American Medical Association (JAMIA),* (In Press) 2020

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) 2020

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) 2020

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,* 127(1), 2020

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 @ Zoox
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 (2015-16,19-20), JAMIA (2019-20), Ophthalmology (2019-20), 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