Samantha Robertson

Ph.D. Candidate @ U.C. Berkeley · Electrical Engineering & Computer Sciences · HCI+AI

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Education

University of California, Berkeley *Berkeley, CA, USA*
Ph.D. Electrical Engineering and Computer Sciences *2019 - Present*
- Advisors: Dr. Niloufar Salehi and Dr. Aditya Parameswaran
- Dissertation title: Building User Trust and Agency in Data Systems
- M.S. awarded May 2021

M.S. Electrical Engineering and Computer Sciences *May 2021*
- Advisors: Dr. Niloufar Salehi and Dr. Moritz Hardt

Stanford University *Stanford, CA, USA*
B.S. Mathematical and Computational Sciences *June 2019*
- Degree awarded with Distinction (top 15%)

Research Highlights

Reliable and Trustworthy Machine Translation *U.C. Berkeley & Google*
Supervised by Dr. Niloufar Salehi *June 2020 - Present*
- Conducted user studies and interviews to understand how people use machine translation in high-stakes domains, e.g. employment and healthcare. Drawing on these findings to design more trustworthy MT systems, leveraging careful data curation and mixed-initiative interaction design.

Understanding Adolescent Menstrual Health through Tracking App Data *U.C. Berkeley*
Supervised by Dr. Kim Harley *August 2021 - Present*
- Analyzed survey responses and tracking app log data from over 10,000 users to explore associations between menstrual cycle characteristics and behavioral factors like stress and sleep. Conducting participatory design workshops to investigate how research with tracking app data could actively engage users to improve research outcomes.

Configuring Student Assignment Algorithms to Meet Community Needs *U.C. Berkeley*
Supervised by Dr. Niloufar Salehi *January 2020 - May 2021*
- Conducted mixed method analysis to understand how families engage with algorithms for assigning students to public schools. Identified tensions between the algorithm's design and real world conditions that create challenges for meeting educational equity goals. This work prompted a long-term collaboration between U.C. Berkeley and San Francisco Unified School District to inform the design of their new assignment system.

Internships

Research Intern, Ethical AI Team *Google*
Supervised by Dr. Mark Díaz *May - Dec 2021*
- Designed and conducted a mixed method user study to understand users' strategies for identifying and recovering from machine translation errors, and when those strategies fall short.

Publications

Conferences

Samantha Robertson, and Mark Díaz. Understanding and Being Understood: User Strategies for Identifying and Recovering From Mistranslations in Machine Translation-Mediated Chat. To appear in *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparency (FAccT 2022)*

Nikita Mehandru, **Samantha Robertson**, and Niloufar Salehi. Reliable and Safe Use of Machine Translation in Medical Settings. To appear in *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparency (FAccT 2022)*.

Daniel J. Liebling, **Samantha Robertson**, Wesley Hanwen Deng, and Katherine Heller. Opportunities for Human-Centered Evaluation of Machine Translation Systems. To appear in *Findings of NAACL 2022*.

Samantha Robertson, Tonya Nguyen, and Niloufar Salehi. 2021. Not Another School Resource Map: Meeting Underserved Families' Information Needs Requires Trusting Relationships and Personalized Care To appear in *Proceedings of the ACM on Human-Computer Interaction, CSCW (CSCW '22)*.

Samantha Robertson, Tonya Nguyen, and Niloufar Salehi. 2021. Modeling Assumptions Clash with the Real World: Transparency, Equity, and Community Challenges for Student Assignment Algorithms. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21)*.

Pavan Mehrotra, Sabar Dasgupta, **Samantha Robertson**, and Paul Nuyujukian. 2018. An open-source realtime computational platform (short WIP paper). In *Proceedings of the 19th ACM SIGPLAN/SIGBED International Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES 2018)*.

Pre-prints

Samantha Robertson, Tonya Nguyen, Kathy Hu, Afshin Nikzad, Catherine Albiston, and Niloufar Salehi. Preference Elicitation as Participation in Algorithmic Decision-Making.

Workshops

Wesley Hanwen Deng, Nikita Mehandru, **Samantha Robertson**, and Niloufar Salehi. 2022. Beyond General Purpose Machine Translation: The Need for Context-specific Empirical Research to Design for Appropriate User Trust. *Workshop on Trust and Reliance in AI-Human Teams*, at *CHI 2022*

Samantha Robertson, Wesley Hanwen Deng, Timnit Gebru, Margaret Mitchell, Daniel J. Liebling, Michal Lahav, Katherine Heller, Mark Díaz, Samy Bengio, and Niloufar Salehi. 2021. Three Directions for the Design of Human-Centered Machine Translation. *HCI + NLP Workshop* at *EACL '21*

Samantha Robertson, Tonya Nguyen, and Niloufar Salehi. 2020. Modeling Assumptions Clash with the Real World: Configuring Student Assignment Algorithms to Serve Community Needs. *4th Workshop on Mechanism Design for Social Good (MD4SG '20).* 🏆 **Best "New Horizons" Paper.**

Samantha Robertson and Niloufar Salehi. 2020. What if I Don't Like Any of the Choices? The Limits of Preference Elicitation for Participatory Algorithm Design. *Workshop on Participatory Approaches to Machine Learning* at *ICML '20*

Awards & Fellowships

2020	**Honorable Mention, Graduate Research Fellowship Program**, NSF
2019	**EECS Excellence Award**, U.C. Berkeley Electrical Engineering & Computer Sciences
	Elected to Phi Beta Kappa, Stanford University
	J.E. Wallace Sterling Award for Academic Achievement, Stanford University, *Awarded to 25 graduating students in the Stanford School of Humanities and Sciences*

Teaching

Fall 2020	**AI for Medicine and Health Policy**, Teaching Assistant, U.C. Berkeley
Spring 2019	**Data Challenge Lab**, Teaching Assistant, Stanford University

Skills

Languages	**R, Python, SQL**, C, C++, HTML/CSS, Java, Javascript
Tools & Packages	Git, Unix, Tidyverse, Jupyter, LaTeX, MongoDB, PyTorch, SciKit-Learn, Qt
Data Visualization	ggplot2, Shiny, seaborn, matplotlib
Research Methods	Interviews, Surveys, Experiment Design, Qualitative Analysis, Exploratory Data Analysis, Applied ML