

Samantha Robertson

PH.D. STUDENT @ U.C. BERKELEY · ELECTRICAL ENGINEERING & COMPUTER SCIENCES · HCI+AI

✉ samantha_robertson@berkeley.edu | 🏠 srobert4.github.io | 📷 srobert4

Education

University of California, Berkeley

PH.D. ELECTRICAL ENGINEERING AND COMPUTER SCIENCES

- Advisors: Dr. Niloufar Salehi and Dr. Moritz Hardt
- M.S. awarded May 2021

Berkeley, CA, USA

2019 - Present

Stanford University

B.S. MATHEMATICAL AND COMPUTATIONAL SCIENCES

- Degree awarded with Distinction (top 15%)

Stanford, CA, USA

2015 - 2019

Research

Configuring Student Assignment Algorithms to Meet Community Needs

ADVISOR: DR. NILOUFAR SALEHI

- 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.

U.C. Berkeley

January 2020 - Present

A Human-Centered Approach to Machine Translation

ADVISORS: DR. NILOUFAR SALEHI AND DR. MARK DÍAZ

- Conducted a survey to understand how users assess the quality of machine translation (MT). Developed an interactive system to help users improve their input to a translation model by suggesting rephrasings based on the training data.
- **Google Research Intern (Ethical AI Team), Summer 2021:** Conducting a mixed method user study to understand the extent to which dominant evaluation methods for MT capture meaningful errors in conversational settings.

U.C. Berkeley & Google

June 2020 - Present

LiCoRICE: A Open-source Realtime Computational Platform for Systems Neuroscience

ADVISOR: DR. PAUL NUYUJUKIAN

- Developed a visualization interface using C and Python to specialize a custom real-time open source software for systems neuroscience experiments. Conducted a user study to validate the system by simulating a realistic neural decoder.

Stanford University

2017-2019

Measuring Racial Discrimination in Nationwide Traffic Stop Data

ADVISOR: DR. SHARAD GOEL

- Applied data visualization and statistical discrimination tests using R to measure racial discrimination in a large traffic stop dataset. Reflected on the limitations of the analysis from statistical and legal perspectives.

Stanford University

Fall 2018

A Graphical User Interface for Lumped Parameter Cardiovascular Modeling

ADVISOR: DR. ALISON MARSDEN

- Designed and implemented a drag-and-drop interface in C++ with Qt to extend an open source cardiovascular modeling software for rapidly building and simulating simple models using electrical circuit components.

Stanford University

Summer 2018

Publications

CONFERENCES

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)*.

WORKSHOPS

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*

UNDER REVIEW & IN PREPARATION

Samantha Robertson, Tonya Nguyen, and Niloufar Salehi. 2021. Not Another School Resource Map: Meeting Underserved Families' Information Needs Requires Trusting Relationships and Personalized Care. Under revision for CSCW 2022.

Samantha Robertson, Wesley Hanwen Deng, Timnit Gebru, Margaret Mitchell, Daniel J. Liebling, Michal Lahav, Katherine Heller, Mark Díaz, Samy Bengio, and Niloufar Salehi. TranslatorBot: Supporting Users to Craft Better Inputs for Machine Translation. In preparation for CHI 2022.

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*

Presentations & Invited Talks

Transparency, Equity, and Community Challenges for Student Assignment Algorithms

Spring 2021 **Invited Talk, Center for Applied Data Ethics Speaker Series**, University of San Francisco
Guest Lecture, Algorithms & Society, University of Michigan

Fall 2020 **Guest Lecture, Market Design and Resource Allocation in Non-Profit Settings**, Stanford

Teaching Experience

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, seaborn, matplotlib, Shiny

Research Methods Interviews, Surveys, Experiment Design, Qualitative Analysis, Exploratory Data Analysis, Applied ML