Samantha Robertson

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Education

SEPTEMBER 2015 - PRESENT

Stanford University – *B.S. Mathematical and Computational Science (Expected June 2019)*

GPA: 4.05 / 4.00 . Coursework in probability, statistical inference, data science and deep learning; multivariate calculus, linear algebra and discrete math; systems and web programming.

Winner, J.E. Wallace Sterling Award for Scholastic Achievement - Awarded to the top 25 graduating seniors majoring in a Program or Department in the School of Humanities and Sciences.

Experience

SEPTEMBER 2018 - DECEMBER 2018

Stanford Computational Policy Lab; Stanford, CA – *Undergraduate Researcher*

Analyzed nationwide police traffic stop data for racial bias using raw data visualization and the veil of darkness test proposed by Grogger & Ridgeway in 2006. Assessed the strengths and limitations of the test from an applied statistics perspective.

JUNE 2018 - AUGUST 2018

Stanford Cardiovascular Biomechanics Computation Lab; Stanford, CA – *Undergraduate Researcher*

Designed and implemented a graphical user interface in C++ with Qt for lumped parameter cardiovascular modeling in the open source cardiovascular modeling software SimVascular.

JUNE 2017 - PRESENT

Stanford Brain Interfacing Lab; Stanford, CA – *Undergraduate Researcher*

Developed real time visualization capabilities in C and Python to specialize a custom real-time open source software for systems neuroscience research. Implemented a Kalman filter neural decoder and ran a trial with seven human participants to validate the system.

Short-Term Research Projects

FALL 2018

Prediction and Inference with California Eviction Data – *"Small" Data: Prediction, Inference, Causality Class Project (Ongoing)*

Using data from the Eviction Lab at Princeton University to explore the eviction rate in cities across California. Building and evaluating predictive models in R and exploring the potential for inference with this data.

SPRING 2018

Automated Segmentation of Stroke-Induced Lesions - *Convolutional Neural Networks for Visual Recognition Class Project*

Applied computer vision using convolutional neural networks developed in TensorFlow to detect lesions in brain MRIs of stroke survivors. Implemented techniques directly from recent research using a dataset for which no published baseline model existed at the time.

SPRING 2018

Exploring Racial Disparities in American Education - *Data Challenge Lab Class Project*

Visualized and modeled longitudinal and geographic trends in the relationship between racial and socioeconomic inequality and educational outcomes in R, using data from the Stanford Education Data Archive.

Leadership & Community Engagement

SEPTEMBER 2018

Computing Research Association-Women - *Grace Hopper Celebration Research Scholar*

Attended the 2018 Grace Hopper Celebration with a fellowship from the Computing Research Association-Women. Engaged with research-oriented events and programming.

SEPTEMBER 2017 - JUNE 2018

Stanford Vice Provost for Teaching and Learning - *Resident Computer Consultant*

Worked with a team of six undergraduates and two Resident Fellows to lead and manage a residence of over 80 first year students. Was responsible for all residential computing resources and spaces, and provided personal IT support for residents.

SEPTEMBER 2017 - JUNE 2018

VMWare Women's Leadership Innovation Lab; Stanford, CA - *Seeds of Change Mentor*

With a co-leader, mentored a group of seven local high-school girls interested in STEM, focusing on critical leadership skills and the gendered challenges facing women in STEM fields. Collected ethnographic data for the improvement of the pilot program.

Publications

Sabar Dasgupta*, **Samantha Robertson***, Bianca Yu, Stephen Spears, and Paul Nuyujukian. *An open-source platform for systems neuroscience.* In preparation.

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.

Presentations

Samantha Robertson, Sabar Dasgupta, and Paul Nuyujukian, October 2018. *Using LiCoRICE to Conduct Closed-Loop Neural Simulations with People* . Poster at Stanford Neurosciences Institute Symposium poster session.

Samantha Robertson, and Alison Marsden, August 2018. *A Graphical User Interface for Lumped Parameter Cardiovascular Modeling in SimVascular.* Poster at Stanford Bioengineering REU poster session.

Samantha Robertson, and Rohun Saxena, June 2018. *Automated Segmentation of Stroke-Induced Lesions.* Poster at CS 231N: Convolutional Neural Networks for Visual Recognition class project poster session.

Samantha Robertson, Sabar Dasgupta, and Paul Nuyujukian, August 2017. *Deploying Realtime Linux with Python for Applications in Systems Neuroscience.* Poster at Stanford Bioengineering REU and Stanford Bio-X Symposium poster sessions.