Sara Fridovich-Keil

sfk@eecs.berkeley.edu

https://people.eecs.berkeley.edu/~sfk

Education

University of California, Berkeley 2018-pres.

- Degree Program: Doctor of Philosophy (PhD) in Electrical Engineering and Computer Sciences
- Advisor: Benjamin Recht
- GPA: 4.00
- Coursework: Randomness and Computation, Robust Statistics, Mathematics of Data Science, Convex Optimization Theory, Optimization Algorithms, Theoretical Statistics, Linear System Theory, Inverse Problems in Medical Imaging

Princeton University (Class of 2018) 2014-2018

- Degree: Bachelor of Science in Engineering (BSE) in Electrical Engineering, *summa cum laude*
- Advisor: Peter J. Ramadge
- GPA: 3.98
- Certificates (Minors): Applications of Computing, Robotics and Intelligent Systems

Honors and Awards

- NSF GRFP 2019
- EECS Excellence Award, UC Berkeley 2018
- G. David Forney, Jr. Prize for communication sciences, systems and signals at Princeton 2018
- Tau Beta Pi Prize for service to Princeton's School of Engineering and Applied Science 2018
- Barry M. Goldwater Scholarship 2016
- Shapiro Prize for Academic Excellence – awarded to top ~2% of each Princeton class 2015, 2016
- Society of Women Engineers Fran O'Sullivan Women in Lenovo Leadership Scholarship 2014

Publications

Conferences

- V. Shankar, A. Fang, W. Guo, **S. Fridovich-Keil**, L. Schmidt, J. Ragan-Kelley, and B. Recht, "Neural Kernels Without Tangents," *ICML*, 2020.
- R. Roelofs*, **S. Fridovich-Keil***, J. Miller, V. Shankar, M. Hardt, L. Schmidt, and B. Recht, "A Meta-Analysis of Overfitting in Machine Learning," *NeurIPS*, 2019.
- **S. Fridovich-Keil** and P. J. Ramadge, "Contact Surface Area: A Novel Signal for Heart Rate Estimation in Smartphone Videos," *IEEE GlobalSIP*, 2018. Based on senior thesis archived at http://arks.princeton.edu/ark:/88435/dsp01wh246v881.

Workshops

- R. Roelofs*, **S. Fridovich-Keil***, J. Miller, V. Shankar, M. Hardt, L. Schmidt, and B. Recht, "A Meta-Analysis of Overfitting in Machine Learning," *Understanding and Improving Generalization in Deep Learning (at ICML)*, 2019.
- **S. Fridovich-Keil** and B. Recht, "Choosing the Step Size: Intuitive Line Search Algorithms with Efficient Convergence," *OPT (co-located with NeurIPS)*, 2019.

Provisional Patents

- Measuring Vital Signs via Video May 2018
  - US Provisional Patent, EFS ID: 32565408
- Measuring Heart Rate and Other Vital Signs via Video, Remotely and Near Real-Time June 2017
  - US Provisional Patent, EFS ID: 29412038

Experiences

- Google Software Engineering Internship (Mountain View) 2018
  - Signal processing with sensor data as part of the Android team
- Google Software Engineering Internship (Mountain View) 2017
  - Project combining computer vision and graphics for use on the Geo team
- Microsoft Imagine Cup (World Finalist, team Pulse Pal) 2017
  - API to estimate heart rate and heart rate variability from a face video
- Junior Independent Research (Princeton University) 2016-2017
  - Algorithm to estimate heart rate from a face video, advised by Prof. Paul Cuff
- Google Engineering Practicum Internship (New York City) 2016
  - Designed and developed a desktop application for developer workflow
- Sophomore (Fall) Independent Work at Princeton University 2015
  - Optimized efficiency of organic LED via refractive index tuning of MoO_3-PEDOT:PSS, advised by Prof. Barry Rand
- Project X Internship at Princeton University 2015
  - Grew and characterized thin-film ZnO, advised by Prof. Barry Rand

Teaching

- Graduate Student Instructor, Statistical Learning Theory (Berkeley EECS 281) Fall 2019
  - Hold weekly office hours, prepare homework and exams
- Teaching Assistant, Building Real Systems (Carlab) 2018
  - Assist students with designing and building circuitry and programming control algorithms
- McGraw Center Head Tutor, Mathematics 2015-2018
  - Tutor peers in multivariable calculus and linear algebra at Princeton

Outreach and Service

- WiCSE Outreach Co-Chair 2019-pres.
  - Organize mentoring events for Berkeley EECS undergraduates and first-year PhD students, as well as lab tours for girl scouts
- Bay Area Scientists in Schools (BASIS) 2018-pres.
  - Teach electrical engineering lessons to elementary school classes
- Princeton Engineering Education for Kids (PEEK, Co-Leader) 2014-2018
  - Lead hands-on engineering activities with students at local elementary and middle schools
- Engineering Council (ECouncil, President) 2015-2017
  - Oversee Princeton ECouncil committees and events, including annual Excellence in Teaching Awards based on student voting
- School of Engineering Interactor 2016-2017
  - Mentor incoming engineering students, and help them choose courses

Professional Societies

- IEEE Signal Processing Society joined 2018
- Phi Beta Kappa (early induction) joined 2017
- Tau Beta Pi Engineering Honor Society joined 2016
- Sigma Xi Scientific Research Society joined 2016
- Society of Women Engineers joined 2014

Skills

- Programming: I use Python and LaTeX regularly. In the past, I've used MATLAB, Java, C, JavaScript, Elm, R, Verilog, Mathematica, GLSL, and C++
- Languages: English (native), Spanish