

# Samir Akre

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Based in Santa Clara, California

## Education

B.S. Biomedical Engineering

(GPA: 3.56/4.0)

University of California, Davis Class of 2018

## Work Experience

Software Developer at Stanford University School of Medicine (Oct 2018 - Present)

- Creating front end of data portal to allow analysis sites across nation to upload multi-omics data
- Developing a cloud based epigenetics analysis and quality control pipeline

Assistant Bioinformatician at Dr. Mills Lab - UC Davis (Jan 2017 - Jun 2018)

- Developed Bash and Python scripts to help in the analysis of microbial metagenomic data.
- Created a JavaScript (Angular2) application to create scalable gene figures from GenBank files for use in academic papers and posters.
- Presented at the 2017 and 2018 UC Davis Undergraduate Research Conference

Computer Vision Researcher at UC Davis Coffee Center (Oct 2017 - Jun 2018)

- Creating a method to quantify roast quality of beans using cell phone cameras and image analysis techniques. Coded in MatLab
- Developing new industry standards for roasting and lower the price barrier for entering precision coffee roasting

Algorithm Development Intern at Lumo Bodytech (Jun 2017 - Sep 2017)

- Developed algorithms to discriminate between the quality of form for certain exercises based on pelvic displacement and tilt angle.
- Created motion capture setup, experiment design, and data acquisition protocol, Python analysis.

Freelance Website Developer (Jun 2014 - Sep 2016)

- Developed websites for clients ranging from full web applications to personal home pages utilizing Django, Flask, AngularJS, CakePHP, Javascript, HTML5, CSS3, SQLite
- Debugged and cleaned wordpress sites through PHP editing for several clients

## Patents and Publications

- **“System and Method for Personalized Exercise Training and Coaching”** Andrew Robert Chang, Chung-Che Charles Wang, Daniel Le Ly, Ray Franklin Cowan, Rebecca Shultz, Samir Akre  
*Lumo Bodytech LLC., Patent Number: US20180133551A1 , Priority Date: 11/16/2018*
- **“Bifidobacterial Dominance of the Gut in Early Life and Acquisition of Antimicrobial Resistance”**  
Diana H. Taft, Jinxin Liu, Maria X. Maldonado-Gomez, Samir Akre, M. Nazmul Huda, S. M. Ahmad, Charles B. Stephensen, David A. Mills  
*mSphere Sep 2018, 3 (5) e00441-18; DOI: 10.1128/mSphere.00441-18*
- **“A high fat meal alters the oxylipin profile in triglyceride-rich lipoprotein to modulate endothelial inflammation”** Anita Rajamani, Kamil Borkowski, Samir Akre, Andrea Fernandez, John W. Newman, Scott I. Simon, Anthony G. Passerini.  
*Submitted Manuscript to Scientific Reports 12/12/2018*

## Volunteer Experience

### Wearable Device Development, Biomedical Senior Design (Sep 2017 - Jun 2018)

- Created entire wearable device to monitor factors associated with overuse injury in athletes
- Designed and manufactured custom circuitry to lower profile of device and reduce failure modes
- Created NodeJS Bluetooth Low Energy (BLE) protocol for data transmission to mobile devices
- Documented entire process according to FDA specifications and industry best practices
- Won 1st place for Best Senior Capstone project at UC System Wide Bioengineering Symposium

### Biomedical Researcher at Dr. Passerini Lab UC Davis (Sep 2015 - Jun 2018)

- Designed a microfluidic chip to align endothelial cells using columns of collagen.
- Conducted human cell culturing, ELISA assays, flow cytometry, and data analysis in python.
- Aided in pathway enrichment analysis and visualization with Cytoscape

### Genetic Engineer at UC Davis iGEM (Mar 2016 - Nov 2016)

- Designed a service to help build international scientific collaborations for the competition helping connect over 50 international teams using the site
- Designed synthetic plasmids for protein expression which were used to genetically modify E. Coli and with the goal of implementing in Bacillus Subtilis
- Won a gold medal at the international competition in Boston

### Coordinator of Logistics for UC Davis Pre-Medical Conference (Nov 2014 - Nov 2015)

- With 7 interns under us coordinated the feeding of \$300,000 worth of food to over 10,000 people.
- The quality of food was rated the best it has been in all thirteen years of conference history.

## Honors and Awards

- Best Senior Capstone Project at UC System Wide Bioengineering Symposium 2018
- First Place UC Davis Entrepreneurial Fund Spring 2017
- Ashoka Youth ChangeMakers Winner 2016
- Gold Medal international Genetically Engineered Machines Jamboree 2016
- Deans Honor's List Winter 2015

## Programming Languages

- Python – Main Language
- Bash (Unix Systems)
- JavaScript
- MatLab
- HTML5/CSS3
- Angular/Node/React
- SQL
- PHP
- Swift (iOS)
- C

## Presentations

- 2018 – Undergraduate Research Conference
- 2017 – Apps4Change Demo
- 2017 – YouthTechHealth, SF
- 2017 – Undergraduate Research Conference
- 2016 – Undergraduate Research Conference
- 2016 – Stanford International Medical Conference ( MedX )

## Affiliations

- Tau Beta Pi Engineering Honors Society (TBP)
- Tau Kappa Epsilon Fraternity (TKE)
- UC Davis Biomedical Engineering Society
- Order of Omega Greek Honors Society