Sara Sampson

Portfolio LinkedIn Github sarasampson.sls@gmail.com (408) 887-6826

EDUCATION

University of California, Berkeley – B.S. Bioengineering May 2017
College of Engineering Honors, GPA: 3.76
Recognitions: Dean's Honor List, Cal Alumni Association Leadership Award Scholar, Bioengineering Honors Society
Activities: Statistics Lab Teaching Assistant, Undergraduate Research Apprentice, Artists in Resonance A Cappella

App Academy – Full-Stack Software Engineering April 2020

SKILLS

Programming Languages: JavaScript, Ruby, SQL, R, Python
Web Development: Ruby on Rails, React.js, Redux.js, HTML5, CSS3, Sass, Git, Node.js, Express.js, jQuery, AJAX, Webpack, REST API
Other Proficiencies: PostgreSQL, MongoDB, RSpec, TDD, JMP Pro, ImageJ, SolidWorks

PROJECTS

CO-HABIT - Frontend Lead Live | GitHub
An all-in-one housemates web application built with the MERN stack
- Ensured user privacy and autonomy using frontend (React Router) and backend (Passport.js) authentication measures, allowing logged-in users to only access and make changes to their own household once approved to join
- Implemented chores assignment logic that automatically assigns chores to each housemates and ensures that the workload is distributed evenly using JavaScript promises to fetch & store data asynchronously

Scribbled - Solo Developer Live | GitHub
An online books and documents library inspired by Scribd built with Ruby on Rails
- Utilized CSS media queries to create a fully responsive, device agnostic design
- Integrated React components with Redux's global store by dispatching actions only when sharing information across components and encapsulating data to give the user an uninterrupted experience

Blue JS Demos- Solo Developer Live | GitHub
A series of calming blue animations with tutorials, built using JavaScript and Sass
- Used vanilla JavaScript DOM manipulation, three.js, and Sass, to create a series of relaxing visualizations

Project Vitalize - Software Lead
A low-cost vital signs monitor tailored for resource-limited hospitals
- Partnered with UCSF physicians and health care workers in East Africa to design a low-cost vital signs monitor that addresses barriers to early sepsis detection in resource-limited hospitals
- Developed a functional Arduino-based prototype and a 3D printed form prototype through multiple iterations of the design process
- Presented posters in the final rounds of two international design competitions (2nd place - Big Ideas in Global Health 2017)

WORK EXPERIENCE

Research Associate - Biomechanical Engineering Jul 2017 – Jun 2019
UCSF Orthopedic Bioengineering Laboratories
- Designed, troubleshot, and executed study examining the effect of dynamic loading on nutrient transport through the cartilage endplate (CEP); performed statistical analyses and published findings in the *Journal of Biomechanics*
  Sampson SL, Sylvia M, et al. Effects of dynamic loading on solute transport through the human CEP. *J Biomech*. 2019;83:273-9. PMID: 30554819.
- Evaluated the effect of novel enzymatic and mechanical cartilage matrix modification strategies on disc cell viability
  Wong J, Sampson SL, et al. Nutrient supply and nucleus pulposus cell function. *Osteoarthritis Cartilage*. 2019;27(6):956-64. PMID: 30721733.
- Wrote scripts to automate and standardize confocal microscopy 3D image processing used to calculate levels of gene expression
- Developed and validated new lab protocols: applying constant static or dynamic pressures with automatic fluid loss adjustments, quantifying solute transport through cartilage, matching local permeability variations to FTIR maps of cartilage composition

Biodesign Fellow Summer 2016 & 2017
UC Berkeley Bioengineering - Summer Biodesign Internship
- Completed training as a protégé in 2016; returned as a fellow to lead the 2017 program and mentor a group of 7 protégés
- Compiled a database of 1500 unmet needs and co-authored over 300 pages of technical reports to serve as the basis of future capstone design projects