Sara Sampson

Portfolio LinkedIn Github sarasampson.sls@gmail.com

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, Python, R
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 using 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
- Implemented chores assignment logic that automatically assigns chores to each housemates, ensuring that the workload is distributed evenly using JavaScript promises to fetch household data and store chores 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 blue JavaScript animations with tutorials
- Used vanilla JavaScript DOM manipulation, Three.js, and Sass, to create a series of 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