Sara Sampson

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SKILLS

Programming Languages: *proficient* — JavaScript, Ruby, SQL; *prior experience* — Python, R, C++
Web Development: Ruby on Rails, React, Redux, Node.js, jQuery, Express, AJAX, Axios, Webpack, HTML5, CSS3, Sass, RESTful APIs
Other Proficiencies: Git, PostgreSQL, MongoDB, RSpec, VS Code, RStudio, JMP, ImageJ, SolidWorks

PROJECTS

Portfolio website made with jQuery, HTML5, and CSS3 — *see for further project details*   sarasampson.com

RESONANCE   Live | GitHub
An ambient noise mixer for improving productivity
- Leveraged CSS media queries and grid layouts to create a fully responsive design
- Optimized site performance on mobile and desktop devices through testing with Chrome DevTools and implementing lazy loading; obtained a 100% Lighthouse score for performance, best practices, and SEO
- Utilized: vanilla JavaScript DOM manipulation (ES6), Node.js, Webpack, Sass, Chrome DevTools

CO-HABIT — Frontend Lead   Live | GitHub
An all-in-one housemates web application built using the MERN stack
- Implemented chores assignment logic that automatically assigns chores to each housemate, ensuring that workload is distributed evenly using JavaScript promises to fetch household data and store chores data asynchronously
- Ensured user privacy and autonomy using frontend (React Router) and backend (Passport.js) authentication measures, allowing only approved, logged-in users to access and make changes to their own household
- Utilized: *backend* — Node.js, MongoDB, Express, Passport.js; *frontend* — React, Redux, Axios, Sass; Heroku, Git team workflow

Scribbled   Live | GitHub
An online books and documents library inspired by Scribd, built with React/Rails
- 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
- Utilized: *backend* — Ruby on Rails, PostgreSQL, BCrypt; *frontend* — React, Redux, AJAX, SCSS; Heroku

Project Vitalize — Software Lead
A low-cost vital signs monitor designed to address barriers to early sepsis detection in resource-limited hospitals
- Developed a functional Arduino prototype and a 3D printed form prototype through multiple iterations of the design process
- Selected to present in the final rounds of two international design competitions (2nd place — Big Ideas in Global Health 2017)
- Utilized: Arduino, SolidWorks, 3D printing, user needs assessment, prototyping

EMPLOYMENT

Staff Research Associate — UCSF Orthopedic Bioengineering Laboratories   Jul 2017 – Jun 2019
- Improved reproducibility and efficiency of in situ hybridization analysis by writing ImageJ scripts to automate 3D image processing
- Designed and executed studies examining the role of the cartilage endplate in intervertebral disc health and back pain; published findings in peer-reviewed scientific journals
  - Sampson SL, Sylvia M, et al. Effects of dynamic loading on solute transport through the human CEP. *J Biomech.* 2019;83. PMID: 30554819.
  - Wong J, Sampson SL, et al. Nutrient supply & nucleus pulposus cell function. *Osteoarthritis & Cartilage.* 2019;27(6). PMID: 30721733.
- Produced publication-quality data visualizations in KaleidaGraph; performed statistical analyses using JMP Pro and R
- Developed and validated new methods; wrote and maintained documentation on experimental protocols

Biodesign Fellow — UC Berkeley Bioengineering   Summer 2016 & 2017
- Completed training as a protégé in 2016; returned as a fellow to lead the 2017 program and mentor a group of 7 interns
- Led needs-finding research and ensured quality of team deliverables; generated a database of over 1500 unmet clinical needs and 500 pages of technical reports to serve as the basis of future capstone design projects

EDUCATION

University of California, Berkeley — B.S. Bioengineering   May 2017
Graduated with Honors from the College of Engineering — GPA: 3.75
Recognitions: Dean's Honor List (2 semesters), Cal Alumni Association Leadership Award Scholar, Bioengineering Honor Society

App Academy — Full-Stack Software Engineering   April 2020