Sara Lim Sampson

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TECHNICAL SKILLS

Languages: *proficient* — JavaScript (ES6), Ruby, SQL; *prior experience* — Python, R
Web Technologies: Ruby on Rails, React, Redux, Node.js, jQuery, Express, AJAX, Axios, Webpack, HTML5, CSS3, Sass
Software: VS Code, RStudio, JMP, SolidWorks
Databases: PostgreSQL, MongoDB
Other: Git, Jest, RSpec, Data Structures & Algorithms, RESTful APIs

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

PROJECTS

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

RESONANCE — *An ambient sounds mixer website for improving productivity* — Live | GitHub
- Independently built website from scratch using vanilla JavaScript DOM manipulation, Node.js, Webpack, HTML5, Sass
- 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
- Leveraged CSS media queries and grid layouts to create a fully responsive design

CO-HABIT — *A MERN stack web app for housemates to manage chores, split shared bills, and schedule events* — Live | GitHub
- *Backend* — Node.js, MongoDB, Express, Passport.js; *Frontend* — React, Redux, Axios, Sass
- 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

SCRIBBLED — *An online books library inspired by Scribd* — Live | GitHub
- *Backend* — Ruby on Rails, PostgreSQL, BCrypt; *Frontend* — React, Redux, AJAX, SCSS
- 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

VITALIZE — *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)

WORK EXPERIENCE

Staff Research Associate — 2017 – 2019
University of California, San Francisco — Orthopedic Bioengineering Laboratories
- 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 journals (lead author of 1 article, co-authored 2 articles and 3 abstracts)
  - 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.
- Generated publication-quality data visualizations in KaleidaGraph; performed statistical analyses using JMP Pro and R
- Successfully developed and validated several new methods including a testing protocol used to determine the rate of nutrient transport through human cartilage under static or cyclic loading with automated fluid loss adjustments

Biodesign Fellow — Summer 2017
University of California, Berkeley — Department of Bioengineering
- Managed a group of 7 undergraduate interns conducting needs-finding research; previously completed training as an intern in 2016
- Ensured quality of team deliverables; compiled a database of over 1500 unmet clinical needs and 500 pages of technical reports to serve as the basis of future capstone design projects