Sara Lim Sampson | Software Engineer

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TECHNICAL SKILLS

Languages: *proficient* — JavaScript (ES6), Ruby, SQL; *prior experience* — Python, R
Web Development: React, Redux, HTML5, CSS3, Sass, Ruby on Rails (MVC), Node.js, npm, AJAX, Webpack, Heroku, RESTful APIs
Databases: RDBMS — PostgreSQL, SQLite3; NoSQL — MongoDB
Tools: Git, Postman, Visual Studio Code, RStudio, JMP Pro, SolidWorks

EDUCATION

University of California, Berkeley — B.S. Bioengineering *2013 – 2017*

- Graduated with Honors from the College of Engineering — **GPA:** 3.75
- **Recognitions:** Dean's Honor List (2 semesters), Bioengineering Honor Society, Cal Alumni Association Leadership Award Scholar
- **Activities:** Undergraduate Researcher at UCSF, Statistics Lab Teaching Assistant, Calculus Tutor, Artists in Resonance A Cappella

App Academy — Full Stack Software Engineering *2019 – 2020*

PROJECTS

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

RESONANCE — *An ambient noise mixer for improving productivity* **Live** | **GitHub**

- Independently built website from scratch using vanilla JavaScript DOM manipulation (ES6), Webpack, npm, HTML5, and 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 — *An all-in-one housemates web application built with the MERN stack* **Live** | **GitHub**

- *Backend* — Node.js, npm, MongoDB, Express, JWT, Heroku; *Frontend* — React, Redux, Axios, Sass
- Designed and built an intuitive user interface for housemates to manage chores, split shared bills, and schedule events
- Implemented chores CRUD functionality and automatic assignment logic that ensures evenly distributed workload amongst housemates; leveraged JavaScript promises to fetch household data and store chores data asynchronously
- Worked with a team of 3 to identify the root causes of bugs and potential fixes; used Git to manage branches and features

SCRIBBLED — *An online books library inspired by Scribd* **Live** | **GitHub**

- *Backend* — Ruby on Rails, PostgreSQL, BCrypt, Heroku; *Frontend* — React, Redux, AJAX, CSS3
- Created website that recreates the UI/UX of Scribd, including a modal that allows users to toggle between registration and login forms
- Implemented frontend and backend (BCrypt, React Router) authentication measures, allowing only logged-in users to access and make changes to their own reading lists

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 (SolidWorks) through multiple design process iterations
- 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

- 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 (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.
- Improved reproducibility and efficiency of in situ hybridization analysis by writing ImageJ scripts to automate 3D image processing
- Performed statistical analyses using JMP Pro and R; generated publication-quality data visualizations in KaleidaGraph
- Successfully developed and validated several new lab 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 interns conducting needs-finding research; previously interned as an undergraduate 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