

# Brian Hsu

SOFTWARE ENGINEER

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## Work Experience

### LiveRamp

San Francisco, California

SOFTWARE ENGINEERING INTERN, DATA MANAGEMENT BACKEND

May 2019 - Aug 2019

- Worked with a variety of big data systems, helping **add to, segment, and process petabytes of customer data** to enable data-driven marketing.
- Developed and owned a backend service, including a **new big data pipeline**, for a new product. Worked under and met a tight deadline to meet client demands, unlocking \$12 million in at-risk revenue.
- **Containerized applications** using Docker and Kubernetes, increasing development velocity, enabling scalability, and improving fault tolerance.
- **Optimized performance** of mission-critical applications, and increased visibility into errors by adding **fault-detection** logic.
- Collaborated across teams, **implementing new endpoints to enable easier access** to my team's systems.
- Migrated several applications from an on-premises data center to **Google Cloud Platform** as part of a company-wide shift to the cloud.

### Algorithms for Computing and Education (ACE) Lab

Berkeley, California

RESEARCH ASSISTANT, UC BERKELEY

May 2018 - Present

- Worked with PhD student Nate Weinman, under Professor Armando Fox, to **research and develop novel computer science practice problems** to make computer science more accessible and easier-to-learn for beginning and intermediate students.
- Collaboratively designed and implemented an **interactive web application** allowing students to solve Parsons Problems, enabling a 80+ student study.
- Developed a system for automatically **grading student submissions at scale** safely and efficiently, using multiple workers coordinated using Redis/RQ.
- Analyzed and visualized data, providing insights into the learning efficacy of Parsons Problems.

## Education

### University of California, Berkeley

Berkeley, CA

B.A. IN COMPUTER SCIENCE, MINOR IN ENGLISH

Aug. 2016 - Dec. 2019 (Expected)

- **Major GPA: 3.78, Cumulative GPA: 3.63**

#### Selected Coursework:

Introduction to Database Systems

Efficient Algorithms and Intractable Problems

Operating Systems

Computer Security

Introduction to Artificial Intelligence

Data Structures

Structure & Interpretation of Computer Programs

Machine Structures

Discrete Math & Probability Theory

Principles & Techniques of Data Science

Concepts in Computing with Data

## Skills

**Programming Languages:** Java, Python, JavaScript, C, Go, SQL, R, HTML/CSS, RISC-V Assembly

**Technologies:** Docker, Kubernetes, MapReduce, Google Cloud Platform, React, Terraform, Git, jQuery, Flask, Redis, UNIX

**Languages:** Fluent in both English and Chinese

## Projects

### bDocs

- A single-page web application for collaborative, real-time, in-browser rich text and code editing.
- Supports synchronized text editing across multiple users, along with importing text documents, synchronized settings (language, font size) and titles, and displaying recently accessed documents.
- Built using **React** and **Semantic UI**. Backed by a **Firebase** Realtime Database.

### PaperJS Parsons

- A fully-featured web application, providing an interface to solve practice Parsons Problems. Used to help teach students Paper.js, a library for graphics scripting/drawing on HTML5 canvases.
- Allows users to run and see the effects of their code in-browser, and displays interactive examples for users to compare the results of their submissions with.
- Developed collaboratively as part of a preliminary stage of research into the efficacy of Parsons Problems, a new type of practice problem introduced to improve computer science education.
- Informed future studies, laying the groundwork for improvements in computer science education both within Berkeley and without.
- Written in **HTML** and **JavaScript**, using the Bootstrap, jQuery, and Paper.js libraries.