Brian Hsu

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Work Experience

Meta
Production Engineer

Menlo Park, California
Feb 2020 - Present

- Senior engineer on the Resource Allowance System team, **designing and implementing capacity allocation workflows** for **thousands of customers** across **millions of machines**, providing the foundation for **Meta's internal cloud**.
- Helped develop **IaaS Experimentation**, a system for users to acquire hardware, run containers, and apply custom automation for the purpose of testing different workloads on different hardware. Onboarded and supported customers, designed and implemented features, and came up with new projects for other team members.
- Designed and implemented systems to **automatically distribute and reclaim servers** from customers, providing them with necessary fault-tolerance buffer.
- Worked on a system to move servers between customers while maintaining proper capacity accounting, helping us solve tough problems like fleet maintenance, fleet spread, and hardware scheduling.
- **Mentored junior members** of my team and came up with a large variety of projects to aid in their engineering development.

LiveRamp
Software Engineering Intern, Data Management Backend

San Francisco, California
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.
- **Containerized applications** using Docker and Kubernetes, increasing development velocity, enabling scalability, and improving fault tolerance.
- Collaborated across teams, **implementing new endpoints** to enable easier access to my team's systems. **Developed and owned a new back-end service** and big data pipeline.

Algorithms for Computing and Education (ACE) Lab, UC Berkeley
Research Assistant

Berkeley, California
May 2018 - Present

- Worked with PhD student Nate Weinman, advised by 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** to solve Parsons Problems, enabling a 80+ student research study, along with a **parallelized autograding** system.

Education

University of California, Berkeley
B.A. in Computer Science, Minor in English. Major GPA 3.80, Cumulative GPA 3.65

Berkeley, CA
Aug. 2016 - Dec. 2019

Skills

Programming: Rust, C++, Python, Java, JavaScript, Go, C, SQL
Technologies: Containerization, IaaS, Kubernetes, MapReduce, Pub/Sub, React, Git, Thrift, UNIX, Distributed Systems

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 web application used as an interface to solve practice Parsons Problems. Used to help teach students Paper.js, a graphics scripting library.
- Allows users to run and see the effects of their code, 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.
- Written in **HTML** and **JavaScript**, using the Bootstrap, jQuery, and Paper.js libraries.