

Linyue Song

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EDUCATION

University of California, Berkeley
MS in Electrical Engineering and Computer Sciences

GPA: 3.96

August 2021 - May 2022

University of California, Berkeley
BA in Computer Science

GPA: 3.88

August 2017 - May 2021

SKILLS

- Programming Languages: Python, Java, JavaScript, Typescript, C, Go, R, Risc-V asm, x-86 asm.
- Other skills: Bazel, CI/CD, Docker, AWS, Jenkins, Redis, SQL, MongoDB, GRPC, PyTorch, GCP, HTML/CSS/JS, Flask.

EXPERIENCE

Backend Framework Engineer, Asana Inc

June 2022 - Present

- Modernizing and improving Asana's in-house **distributed asynchronous task system** using **MySQL**, **Redis**, and **Kubernetes**, enhancing the platform's scalability and reliability.
- Architecting the migration of mutation systems at Asana to **GraphQL**, streamlining API architecture for future scalability and improved developer experience.
- Led an in-depth **performance** investigation of Asana's CSV import process, identifying bottlenecks and optimizing the system. Successfully reduced import time by 50%, significantly enhancing data processing efficiency and improving overall user experience.
- Developed an internal email record lookup page for Asana using **React**, **gRPC**, and **Flask**, streamlining internal workflows and providing a fast, user-friendly interface for efficient email record retrieval.
- Built a **GitHub Action** metrics framework using **AWS lambda** webhooks to automate data collection to **Datadog**, eliminating manual reporting and setup, and improving monitoring accuracy for seamless code migrations.
- Led **TypeScript** conversion initiatives, converting 95% of Asana's backend JavaScript into TypeScript, improving codebase readability and type safety.
- Modernizing Asana's **serialization** framework to improve data serialization efficiency and reduce deserialization errors, leading to smoother data operations.
- Host biweekly onboarding sessions on the asynchronous task framework to accelerate new hire integration and ensure smooth onboarding.

ML researcher, Dartmouth College

June 2024 - Present

- Researching methods to preserve **safety**-alignment in pre-trained **LLMs** during fine-tuning, ensuring robustness against adversarial manipulation.

ML Researcher, UC Berkeley

August 2020 - June 2022

- Conducted research on **Federated Learning** focusing on backdoor attacks in both **Computer Vision** and **LLM** settings, including the GPT model. Collaborated with scholars to develop novel defense mechanisms against these attacks, leading to a paper published at the top conference, **ICML**.

Software Development Assistant, Lawrence Berkeley National Laboratory

February 2020 - December 2020

- BTrDB API (OOP)
 - Built a **Python API** for a **non-relational database** BTrDB to better support **Pandas** development.
 - Implemented an **HTTPS web application** with user authentication using **Flask**, as well as a client script for easy usage. The accounts info were stored in a **Sqlite3 relational database**.
 - Developed a **watchdog** to monitor the status of the database and send reports to admin when necessary.
- Framework for Multi Layer Control (OOP)
 - Assisted in developing a **framework for control applications**, which handled the **parallelization, timing/triggering, data logging, and error handling** of multiple controller modules.
 - Wrote and deployed a **GitHub Action script** for **unit testing**, as well as the testing scripts.

Software Engineer Intern, Picovoice Inc

June 2019 - August 2019

- Designed and implemented Akita, an **offline speech recognition program** based on a wake word detection engine. It was capable of detecting multiple keywords from long audio files with leading speed and accuracy in the industry. It also **extracted audio snippets** for review and provided a user-friendly **Qt GUI**.
- By utilizing **multiprocessing**, it analyzed **6 hour of LibriSpeech audio within 25 minutes** on a 4 core machine.