ALBERT YE

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Professional Experience

Full-Stack Intern @ Amazon – Boston, MA June 2024 – August 2024

- Developed a metadata registry web app to enhance data accessibility and management within Alexa's data lake, streamlining infrastructure for data-driven analysis.
- Automated an internal data-search process into a scalable customer-facing tool using cloud services and integrating both backend and frontend components, resulting in reduction of response time from 2 days to seconds.

Teaching Assistant @ UC Berkeley – Berkeley, CA January 2024 – December 2024

- Held weekly discussion sections with 66 registered students, presenting concepts taught during lecture.
- Held multiple office hours a week, where I helped reinforce conceptual questions and debug coding projects.
- Analyzed multiple large codebases per office hours session and worked with students to find and resolve bugs.

Instructor @ X-Camp Academy – San Jose, CA July 2022 – Present

- Taught data structures/algorithms topics such as binary search, graph traversals, and dynamic programming in preparation for USACO competitions.
- Facilitated student discussions to foster a collaborative and productive environment.

Education

University of California, Berkeley August 2022 – May 2025

Bachelor of Arts (B.A.) in Computer Science. Cumulative GPA: 3.95/4.0

- Relevant Coursework: Computer Architecture, Computer Security, Operating Systems, Compilers, Probability and Random Processes, Optimization Models, Internet Architecture, Communication Networks
- Activities: Upsilon Pi Epsilon, Berkeley Math Tournament Test Organizer, CALICO Informatics Competition Officer, Open Computing Facility DeCal Head, ACM-ICPC Berkeley Gold (2022 PacNW)
- Awards: USACO Platinum (US Open 2021), Dean's List, 5x AIME Qualifier

Projects

MapReduce Nov 2024

- Implemented a MapReduce coordinator in Rust to distribute map and reduce tasks to workers.
- Ensured thread and memory safety to allow for effective parallelization.

Physics Engine Dec 2023

- Wrote a game based on the mechanics of Suika Game in Rust using the Bevy game engine.
- Created a physics engine from scratch to handle gravity and its effect on collisions between rigid circles of varying sizes inside of an enclosure.

Secure File Storage and Sharing System Nov 2023

- Designed a secure file storage and sharing system in Go to ensure security in the presence of an untrusted server, using cryptography to protect against tampering and unauthorized access.
- Developed key features including user authentication, secure file storage/retrieval, file sharing via invitations, and access revocation, all while detecting data tampering and ensuring stateless, atomic operations.

Skills

Languages: C, C++, Java, Python, Rust, Go, Javascript, TypeScript, Assembly (RISC-V and x86)

Frameworks: React, AWS (Lambda, DynamoDB, API Gateway), Amazon CDK (CloudFormation), Kubernetes, Docker