Ryan Zhao

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Education

University of California, Berkeley | *Class of 2023*
Major: Computer Science, Minor: Math, GPA: 4.00

Relevant Coursework: Machine Learning, Computational Genomics, Database Systems, Efficient Algorithms, Computer Architecture, Probability Theory, Discrete Math, Linear Algebra

Skills

Languages: Java, Go, C, Python, C++, JavaScript, TypeScript, SQL

Frontend: HTML, CSS, Angular, React, React Native
Backend: Amazon Web Services, Express, Django, MapReduce, Apache Solr, PostgreSQL, Cassandra, MongoDB, Spring, Guice

Experience

UC Berkeley RISE Lab | Research Assistant **August 2021 - Present**
- Designed novel benchmark for distributed database systems using a probabilistic workload generated from industry query distributions
- Developed drivers in C++ to run workload on 4 distributed database systems and evaluated performance
- Worked under Audrey Cheng, supervised by Ion Stoica and Natacha Crooks

Amazon (AWS) | Software Development Intern **May 2021 - August 2021**
- Built IOPS canary for AWS Elastic File System (EFS) to detect regressions in promised IO throughput
- Designed a multithreaded poller to perform block-level file operations and push loads of up to 300 MiB/s
- Managed proper inode metadata to durably track allocated blocks and prevent memory leakage
- Engineered custom build and deployment process using Apache Ant and internal Amazon tooling

RiskIQ | Developer through Berkeley Codebase **August 2020 - December 2020**
- Developed MapReduce pipeline for RiskIQ to parallelize the extraction and aggregation of SSL server configurations from the world's ~2 billion hostnames, improving previous scan times by 85%
- Worked with RiskIQ engineers to analyze hosts for vulnerabilities such as poodle, beast, and drown
- Scanned hosts using zgrab2, stored data in Apache HBase, and created indexed search with Apache Solr

DataStax | Developer through Berkeley Codebase **January 2020 - May 2020**
- Built fault-tolerant database migration service to transfer existing Cassandra databases to the cloud
- Designed and created a multithreaded Go proxy that parsed Cassandra's binary protocol to direct reads/writes during migration for zero user downtime
- Implemented custom communication channel between migration and proxy to coordinate operations

Lockheed Martin | Software Engineer Intern **July 2019 - August 2020**
- Developed for Digital Academy, Lockheed's internal education platform used by over 23,000 employees
- Helped transform Digital Academy from a MEAN site with an Express backend into a serverless application built with AWS Lambda and NodeJS, reducing operational costs by 23% and allowing for zero downtime deployments
- Created full-stack AWS serverless applications using NodeJS, Angular, and DynamoDB for Lockheed's rapid prototyping team and implemented OpenID authentication for WordPress sites

Leadership

Berkeley Codebase | Project Manager **January 2021 - Present**
- Designed and developed distributed tracing protocol using AWS X-Ray for the health-tech company Ginger to track the execution flow of requests to their internal API
- Managed team of 6 developers over 15 weeks, communicated daily with Ginger managers and engineers
- Led professional development mentorship sessions for developers to break into the SWE industry