YIQI XUE

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EDUCATION

University of Southern California (USC) *M.S. in Computer Science* Los Angeles, CA
Courses: Software Engineering, Operating Systems, Distributed Systems, Databases *Exp. May 2025*
University of California - Los Angeles (UCLA) *B.S. in Applied Mathematics* Westwood, CA
Courses: Data Structures, Algorithms, Machine Learning, Web Development *Jun 2020*

WORK EXPERIENCE

Mock.ai Remote, US
Full-Stack Developer Intern *Jan 2024 — Present*

- Helping build a web application for mock interview with LLMs and design **MySQL** database schema.
- Developing **RESTful** Java backend APIs with **Spring Boot** to provide basic functionalities such as user subscription and email list, and aggregated data in **Amazon RDS**.

Huawei Beijing, China
Infrastructure Software Engineer *Mar 2023 — Jul 2023*

- Engaged in development of DB Engine and contributed 2k+ lines of **C++** to openGauss 🎯**600+ stars** codebase.
- Devised and constructed a PL/SQL cache module that cached **1M+ stored procedures** per day and realized concurrency using thread pool, DB locks, and shared memory, optimizing worst case runtime memory occupation rate by **80%**.
- Constructed **Jenkins** CI/CD pipelines to validate test cases and promoted deployment efficiency in cloud environment.
- Debugged 5 performance issues using **profiling tools** such as Perf and FlameGraphs, and diagnosed 10+ memory leak/corruption problems with GNU Debugger (GDB) and Valgrind.

WellinTech Beijing, China
Backend Software Engineer *Sep 2020 — Jun 2022*

- Utilized C++ based **microservices architecture** to develop a **Cloud Native** Data Platform and leveraged Apache **HBase** and **MySQL** clusters to store Terabytes of industrial data from clients.
- Implemented, iterated, and documented backend APIs for data persistence and consistency and lifted test coverage to 90% with GoogleTest.
- Utilized Apache **Kafka** along with **Protobuf** to handle traffic spikes and increased data throughput by **25%**. Designed indexing strategy and rewrited SQL queries, culminating in a **30%** increase in query performance.
- Maintained **ElasticSearch** monitoring cluster and customized Kibana dashboards used by 20+ employees.
- Employed **Docker** and **Kubernetes** to enable auto-scaling and monitoring and accomplished **99.99+% availability** in production environment.

PROJECTS

ViewCrypto | *NFT E-Commerce Web App*
- Deliberated and implemented dynamic web pages such as OAuth login, NFT merchandise showcase, user profile using **Next.js**.
- Utilized **Java Spring Boot** and **Spring MVC** frameworks to construct reliable backend APIs, effectively managing dependencies by **Maven**.
- Developed and integrated a system notification module for user interactions(follows, likes, and comments) functionalities utilizing **Kafka**, while efficiently storing user data in **MongoDB**.
- Deployed the web app to **AWS Elastic Beanstalk** and mapped a domain with **Elastic Load Balancer** for access.

NoteWise | *Mind Map AIGC Web App*
- Developed a web app able to generate well-formed Mind Map using AIGC to compete in HackSC 2023 Hackathon.
- Engineered backend **Flask API** and fine-tuned OpenAI API to process data inputs. Built frontend using **React.js** with Material UI and integrated **Redis** to cache data and deployed to Google Cloud.

TinyKV | *Distributed KV Storage*
- Programmed a **distributed fault-tolerant KV storage** system using **Go** and integrated **Raft** algorithm features, including membership change and leadership change, log garbage collection, and snapshot for log compaction.
- Constructed the multi-version concurrency control (**MVCC**) layer, optimizing transaction management.
- Developed a basic scheduler for centralized node management and timestamp generation, utilizing **Protocol Buffers** over RPC for efficient inter-node communication.

SKILLS

Programming Languages	C++, C, Java, Python, Golang, JavaScript, HTML/CSS, SQL
Cloud & Databases	AWS (Cloud Practitioner CLF-C02), Azure, Postgres, MySQL, MongoDB, Redis, Memcached
Frameworks	Spring Boot, JPA, Hibernate, JUnit, gRPC, React.js, Next.js, BootStrap
Developer Tools	Git, Linux, Docker, Kubernetes, Kafka, RabbitMQ, ELK Stack, Nginx, Jenkins, JIRA, Bitbucket