Zhiyuan Zhang

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EDUCATION

Tufts University   Boston, MA
Master of Science in Computer Science GPA: 3.91   Expected: May 2026
Cornell University   Ithaca, NY
Master of Engineering in Electrical and Computer Engineering GPA: 3.71   Aug 2022-Dec 2023
University of Glasgow   Glasgow, UK
Bachelor of Engineering in Electronics and Electrical Engineering with Information Engineering   Sep 2018 - July 2022
First Class Honors Degree

WORK EXPERIENCE

Nanjing Puhui Hengfeng Information Technology Co, Ltd.   Nanjing, China
Software Developer Intern   Feb 2024 - Jun 2024
- Contributed to a full-stack development team of 8 within the Multidisciplinary Team (MDT) consultation system, enabling healthcare providers to seamlessly collaborate cross-platform and communicate with patients.
- Enhanced front-end with **JavaScript**, **ElementUI**, and **React.js**, improving doctor-patient interaction features and reducing navigation issues by 30%.
- Orchestrated **Java Spring Boot** backend functions and APIs, modernizing expert check-ins and facilitating streamlined consultations, resulting in a 15% improvement in overall consultation workflow efficiency metrics.
- Engineered a multithreaded SMS notification system leveraging Apache **Kafka** for asynchronous message processing; accelerated doctors' response rates by 25% and slashed scheduling delays by 15%, streamlining patient care coordination.
- Developed microservices for an AI chatbot, containerized and deployed on **Kubernetes** with basic load balancing and fault tolerance, validated through load testing under concurrent usage

Hyperlink Technologies Inc (Series A Funded Startup)   San Francisco, CA
Full Stack Software Developer Intern   Jun 2023 - Aug 2023
- Constructed a desktop application utilizing **React.js**, **Electron.js**, and **TypeScript,** offering real-time data visualization for a mining platform
- Constructed a **REST** API using Node.js and Express.js featuring 25+ endpoints; this reduced server response time by 30% and sped up data retrieval across all user dashboards.
- Engineered a robust **OAuth2.0** authentication mechanism supporting logins via Google, Apple, and Facebook which enhanced the security posture of the application.
- Deployed and configured the database of over 10,000+ records on **AWS Aurora**, ensuring high availability, scalability and secure storage.

PROJECTS

Sharded Key-Value Store System
- Engineered a sharded key-value storage solution leveraging **Paxos** consensus within replica clusters, ensuring robust data integrity and consistent command processing despite a 30% chance of network failures.
- Achieved **dynamic shard reallocation** and group membership changes via shardmasters, optimizing load balancing and system flexibility, while ensuring consistent client access amid shard reconfigurations.
- Implemented multi-key transactions with a **two-phase commit** protocol, ensuring linearizability and preventing deadlocks across shards and replica groups.

Technical Interview Preparation platform Github
- Engineered an interview preparation platform utilizing **React**, **Next.js**, **Spring Boot**, and **Redis**, which provides question search, progress tracking, and real-time search;
- Optimized system performance by integrating **Redis** for caching user check-ins and **Elasticsearch** for full-text search, reducing query latency by 50% while maintaining data consistency using MyBatis batch processing.
- Constructed a system using **Caffeine local caching** and **Hotkey detection**, enabling the automatic caching of popular questions, preventing data overload during traffic spikes.

TECHNICAL SKILLS

- Programming languages: Java, Python, TypeScript, JavaScript, OCaml, Matlab, C/C++, SQL
- Technologies : Spring Boot, HTML/CSS, MyBatis, Hibernate, Flask, Redis, Redisson, REST, React, Next, Express, Node, Vue, PostgreSQL, MySQL, MongoDB, Maven, Kafka,Caffeine, Linux, Docker, Kubernetes, Git, Spark,Hadoop