Bingsong Zeng

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EDUCATION

University of Southern California, Los Angeles, CA — August 2022-December 2024
Master of Science in **Computer Science** — GPA: **4.00**

The University of Texas at Austin, Austin, TX — August 2020-May 2022
Master of Arts in **Chemistry** — GPA: **3.89**

Lafayette College, Easton, PA — August 2016-May 2020
Bachelor of Science in **Mathematics** and **Biochemistry** (Honors) — GPA: **3.91** (***summa cum laude***)

WORK EXPERIENCE

Software Development Engineer Intern — May 2023-August 2023
Wuhan KM Information Technology Co., Ltd. — Wuhan, China

- Engineered comprehensive enterprise full-stack **PLM** platform integrating **DevOps** tools with **Vue.js** and **Spring Boot**
- Led compact team of 3 developers and collaborated with multiple departments, ensuring timely delivery of core features
- Slashed network requests from some client actions by **95%** by creating management features utilizing batch operations
- Spearheaded development of automated, personalized pipeline development in **Jenkins** through user-friendly interfaces
- Designed reliable document data extraction feature, curtailing time for inputting datafiles to company network by **97%**
- Streamlined synchronization among multiple platforms, boosting **workflow efficiency** while maintaining data consistency
- Authored first-ever comprehensive **SonarJava** documentation with **2600+** lines, expediting **SonarQube** rule development

Backend Software Engineer Intern — December 2022-May 2023
dodo world — Berkeley, CA

- Constructed **Nest.js** backend with **MySQL** and **MongoDB** for social media app, gaining **3000+** users within 4 months
- Participated in code reviews and collaborated with frontend and marketing teams to enhance user experience
- Architected efficient cache store with **Redis** for user sessions and information, improving session lookup speed by **150%**
- Decreased cache queries for verification codes by **50%** by optimizing storage structure and crafting lazy update scheme
- Eliminated performance bottleneck by redesigning backend with **Kafka** and refactoring **WebSocket** into **microservice**

PROJECT EXPERIENCE

Multithread Rate-Limiting Message Queue System — August 2023-September 2023

- Implemented **multithreaded** message queue in **C** with **token bucket** design, providing effective rate-limiting functionality
- Integrated **mutex**es and signal-catching thread to ensure data integrity and facilitate graceful error handling
- Leveraged conditional variables to manage thread sleep during idle states, maximizing resource efficiency
- Validated system's high efficiency in simulations, achieving total operation time within 2 sec of theoretical minimum

Student Performance Lookup System — March 2023-May 2023

- Created lookup system using **sockets** in **C++** with parallel client-server connections and multi-process server architecture
- Established **TCP**-based client-server communication and **UDP**-based inter-server communications
- Architected recommendation algorithm on servers to suggest partners to students based on similarity in performance

Event Browser (https://eventbrowser30789.wl.r.appspot.com/) — March 2023-April 2023

- Developed event browsing website with **Angular** as frontend and **Node.js** as backend, hosted on **Google Cloud Platform**
- Created **RESTful** web APIs in backend to process data from Google Maps, Spotify, and Ticketmaster databases

MTT Biological Assay Data Processing Tool — August 2021-January 2022

- Designed a data processing tool with GUI in **Python** for data files generated by microplate reader in MTT assays
- Achieved data extraction by **NumPy**, sigmoidal curve fitting with **SciPy**, and generation of graphical summary
- Slashed data processing time from **2 hours to 5 minutes**, eventually prompting all lab members to switch to this tool

TECHNICAL SKILLS

Programming Languages: TypeScript, JavaScript, HTML, CSS, Python, Java, C++, C, SQL, PL/SQL, Bash
Frameworks/DBs: Nest.js, Node.js, React.js, React Native, Angular, Vue.js, Spring Boot, Django, MongoDB, Redis, MySQL
Software/Tools: Git, Docker, Apache Kafka, Maven, SonarQube, Jira, Jenkins, AWS, GCP, Wolfram Mathematica