Yuhang(Logan) Song

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EDUCATION

University of Southern California Aug. 2021 - Present

Double Major GPA: 3.91/4.0 Bachelor of Science in **Computer Science**; Bachelor of Science in **Economics/Mathematics**

- **Award and Honor**: Academic Achievement Award, Dean's List
- **Teaching Assistant**: Discrete Methods in Computer Science, Introduction to Computer Systems, and Introduction to Operating Systems

TECHNICAL SKILLS

- **Programming Languages**: Java, Python, C++, Go, C, JavaScript, Dart, Lua
- **Frameworks and Storage**: React, Spring, Spring Boot, FastAPI, Express, Flutter, MySQL, MongoDB, NocoDB, Redis, Kafka
- **Platforms and Tools**: Linux, AWS, Docker, Node.js, Android Studio, Firebase, JUnit, Postman, Grafana, GitHub

WORK EXPERIENCE

Tencent Jun. 2024 – Aug. 2024

Software Engineer Intern | Shenzhen, China

- Worked with the Esports Technology Team at Timi Studio Group, developing in-game live streaming components using **Go, Lua, and C++**.
- Developed a log management module for *Honor of Kings*, to automatically retrieve log from user mobiles and upload them to **Tencent Cloud Object Storage** (similar to **AWS S3**). The module collects user logs based on data analyst requirements and allows them to download logs in specified formats from designated storage, reducing request turnaround time by 70%.
- Developed a feature to add a **mail push interface** to the management system, enabling the operations teams to send targeted emails to *Yuan Meng Star* players. Implemented an asynchronous email push mechanism to handle 30,000+ QPS efficiently and integrated a new MailPush table into **MySQL** schema to track email push task progress.
- Refactored the original user entry and exit management service for live streaming rooms by implementing a **graceful restart mechanism** for long-lived **TCP connections**, enabling seamless server upgrades without triggering client reconnections, reducing 5xx error rate during deployment from 0.5% to 0.01%.
- Implemented uploading of business-critical metrics for in-game streaming rooms and users into **Galileo**, Tencent's self-developed metrics monitoring platform. Configured cgroup to limit CPU and network bandwidth usage of the stats daemon.
- Constructed **integration test suites** for the refactored service using the **Ginkgo** and **Gomega** testing frameworks and conducted memory analysis using the **Drop** platform (based on **Golang pprof**) to optimize memory-usage, reducing it by 15%.

PROJECTS

Meridio Web-Based Math Learning Platform Jan. 2025 - Present

- Full-stack developer on an AI-powered web application developed under the **USC Institute for Creative Technologies**, designed to engage middle school students in math through **LLM-driven conversations** and **game-based simulations**.
- Designed and built an interactive frontend using **React**, and developed backend logic using **Node.js** and **Express**. Utilized **GraphQL** to query and manage player data and room information for optimal real-time performance.
- Used **Phaser** to create engaging, math-based simulations that enhance hands-on learning experiences. Integrated **GPT-4 APIs** to enable dynamic math-related conversations and collaborative problem-solving for students.
- Integrated **CI/CD** pipelines to automate **Docker** image builds and deployments, saving 4 hours of weekly deploy time.

Unideer AI-Powered College Counseling Web Application Dec. 2023 - Present

- Co-founder and leading engineer of an interactive web application offering comprehensive college application management services, dynamic UI interaction, and intelligent school recommendation.
- Developed a user-friendly frontend using **React and Tailwind CSS**, and implemented a **Python FastAPI** backend following **domain-driven design** principles to efficiently process incoming requests.
- Utilized **DeepSeek API** to filter university options based on user preferences, integrated **OpenAI's API** to generate tailored recommendations, and introduced an **AI-powered chatbot** to enhance user experience.
- Implemented **Redis-based** rate limiting to manage API usage per user, preventing throttling of DeepSeek and OpenAI APIs and increasing overall API availability from 97% to 99%.

PromptShare Pro Android Application Sep. 2024 – Dec. 2024

- Built an **Android application** that enables users to search, organize, and share prompts for **Large Language Models (LLMs)**, with features like user authentication, profile management, and advanced filtering capabilities.
- Implemented backend logic in **Java** with **Firebase** integration for real-time database operations and secure data storage.
- Designed and executed comprehensive test cases, utilizing **Espresso** for black-box testing to validate user flows and **JUnit** for white-box testing to verify internal logic, achieving 65% test coverage.

JoesTable Restaurant Search Web Application Oct. 2023 – Dec. 2023

- Developed a web application for users to search restaurants, save preferences, and make reservations.
- Implemented **Java servlets** with **Restful APIs** to handle HTTP requests and responses, using **MySQL** to store user information and restaurant details retrieved from the **Yelp API**. Integrated a **Spring-based** rate-limiting mechanism to ensure QPS stays within the threshold.
- Designed the frontend page by utilizing **AJAX** for asynchronous client-side rendering to ensure smooth interactive experiences.
- Integrated the **Google Maps API** to enhance the accuracy of location services and overall user experience.