Zihao (Jack) Liu

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EDUCATION

Northeastern University - Boston, MA **Sep 2022 - Dec 2024**
- Master of Science in Information Systems GPA: 3.7/4.0

Northeastern University - Boston, MA **Sep 2020 - Apr 2022**
- Master of Science in Corporate and Organizational Communication

University of Oregon - Eugene, OR **Sep 2016 - Jun 2020**
- Bachelor of Science in General Science

TECHNICAL SKILLS

Programming Languages: Java, JavaScript, Kotlin, Golang, Python, SQL, Swift, MatLab, C, C++, C#
Databases and Cloud: MySQL, PostgreSQL, MongoDB, AWS Lambda/EC2, Google GCE, Google GAE, Amazon RDS, OpenAI API
Web/Mobile Development: Spring, Java Servlet, AngularJS, Node.js, jQuery, HTML & CSS, React JS, Redux, Android, Linux

WORK EXPERIENCE

Northeastern University - Boston, MA **Jan 2024 – Present**
Lead Graduate Teaching Assistant
- Guided 700 junior software engineers and 20+ instructional leads, focusing on full-stack development to enhance their understanding of complex concepts in **object-oriented programming** and practical applications.
- Provided in-depth assistance with **Java Swing**-based projects using Apache NetBeans and GitHub version control, empowering junior software engineers to tackle course projects, labs and assignments effectively.
- Mentored development team members and instructional leads by designing detailed Java Swing lab sessions and project guidelines, enhancing collaboration and reinforcing practical skills through real-world projects.
- Assisted in analyzing and grading complex code projects, leading to a 20% improvement in overall project quality.
- Facilitated regular workshops and Q&A sessions, improving junior software engineers' comprehension by breaking down complex programming concepts and fostering an inclusive learning environment where they felt comfortable asking questions.
- Utilized OneDrive's data analytics to track video replay patterns, enabling faculty to identify areas where students struggled and adjust instructional strategies, improving accessibility and learning experience with auto-generated chapters and subtitles.

PROJECT EXPERIENCE

Rhythmo: A Kotlin-Based Spotify Favorites App with Optimized Performance and Enhanced Interaction
- Designed a **Kotlin**-based Spotify favorite app utilizing **Android Jetpack Library** and **Hilt Dependency Injection**, which streamlined app performance and maintenance.
- Implemented BottomBar & App Navigation using **Jetpack Navigation** component, improving user navigation efficiency.
- Created a mock **RESTFUL Api** using **json-server** and utilized **Retrofit** to manage API requests.
- Built the feed/album/favorite UI in **Jetpack Compose** following **MVVM** architecture, enhancing UI responsiveness and user interaction.
- Enabled local cache ability for favorite features using **Room Database**.
- Integrated **Google Exoplayer** for global music playback, improving playback stability and user satisfaction,achieving over 95% crash-free sessions.

SnapAI: an AI based Social Network
- Designed and implemented a social network web application using **React JS**, enhancing user interface responsiveness and aesthetics.
- Integrated **OpenAI's Dall-E 3** to assist users in creating and updating visually rich posts, enhancing user engagement and content creativity.
- Improved the authentication process by implementing a token-based registration/login/logout flow using **React Router v4** and server-side user authentication with **JWT**, strengthening security and user experience.
- Launched a scalable web service using **Go**, handling user posts efficiently, and deployed it to **Google Cloud (Google App Engine)** to ensure high availability and performance.
- Utilized ElasticSearch, deployed on **Google Compute Engine (GCE)**, to provide advanced search functionalities, allowing users to effortlessly search for recent posts and retrieve personal post histories.

DineEasy: A Spring Boot based online food ordering web application
- Developed **CRUD REST APIs** using Spring Controllers, encompassing functionalities such as registration, menu searching, ordering, and checkout.
- Leveraged **Spring Data JDBC** and repositories to interface with a **PostgreSQL** database hosted on **AWS RDS**, handling data related to menus, restaurants, and more.
- Implemented application authentication via **Spring Security**, employing session-based authentication mechanisms.
- Architected the project with a clear separation of concerns into controller, service, and repository layers, utilizing dependency injection for enhanced maintainability.
- Constructed the frontend using **ReactJS** and **Ant Design**, providing users with the ability to seamlessly add items to their shopping cart and place orders.
- Containerized the build and pushed image to **AWS ECR**, successfully deployed it to **AWS App Runner** for streamlined scalability and accessibility.