QIU Yilun

Mobile: +65-80844526 | E-mail: qiuyilun@u.nus.edu | GitHub | LinkedIn
Career Directions: Software Engineer, R&D Engineer, Full Stack Developer, and Back End Developer

Educational Background

National University of Singapore (NUS) 08/2024-ongoing
Master of Computing - Computer Science Specialisation
- Core courses: Distributed Systems, Advanced Computer Networks, Database Security, etc.

Southern University of Science and Technology (SUSTech) 09/2020-07/2024
Bachelor of Engineering - Computer Science and Technology
- GPA: 3.74/4.0 (90.02/100)
- Core courses: Computer System Design and Application, Data Structures and Algorithm Design, Principles of Database Systems, Object-oriented Analysis and Design, Software Engineering, Operation Systems, etc.

Internship Experience

Roumai Medical Co., Ltd. 12/2023-06/2024
R&D Engineer (Intern)
Engaged in developing and debugging key modules of the company's EMG (Electromyography) acquisition wristband. Contributed to creating an Android-based application for visualizing and controlling robot arms to perform corresponding actions based on captured EMG data and was responsible for writing relevant documents.

Nankerixin Technology Co., Ltd. 02/2023-06/2023
Development Engineer (Intern)
Participated in developing the Taskmate desktop application, designed for students to submit homework and teachers to grade it. Played a crucial role in integrating identity authentication, implementing various user interface pages, and visualizing score distribution. Also ensured alignment with the school's specific requirements.

Project Experience

EMG Signal Capture Station (Android) 01/2024-06/2024
- Roumai Medical Co., Ltd. developed a wristband capable of capturing multi-channel EMG signals and designed an algorithm to control the movement of a robotic arm based on these signals, hoping to have an application to integrate the wristband's signal collection and enable real-time control of the robotic arm.
- I developed an Android application to collect EMG signals and transmit them via LAN to a Python server, which processes the data and calculates robotic arm movements using an algorithm. The results are sent back to the Android app, which displays the EMG signal changes through a time curve and visualizes the robotic arm's movement for algorithm performance demonstration.
- Tech Stack: Kotlin+Compose+Ktor+Unity+C#+Python ✧My Responsibilities:
  - ❖ Implemented the Android app UI using Kotlin Compose framework.
  - ❖ Retrieved data from the wristband via BLE protocol and used coroutines to efficiently process raw data, improving performance and concurrency without blocking the main thread for UI rendering.
  - ❖ Built a 3D robotic arm model in Unity with C# and exported it as WebGL. Set up a lightweight server using Ktor on the Android app to run the WebGL service in the background and rendered it via WebView. The Android app communicated with Python server via UDP and used WebSockets to control the robotic arm's movements through the WebGL service.
- The application has been deployed by the company to demonstrate the features of the wristband and the effectiveness of the robotic arm control algorithm based on captured EMG signals.

Taskmate Grading Application (Desktop) 02/2023-06/2023
- SUSTech's course management system only offers a web page, both students and teachers desire a desktop application to streamline homework submission and grading.
- Our team is required to develop a cross-platform desktop application enabling students to view and submit assignments through a local app. Teachers and teaching assistants can preview assignments in various formats like PDF, provide feedback, visualize scores, download assignments in bulk, and export transcripts.

- Tech Stack: Rust+Tauri+Vue3+TypeScript ✧My Responsibilities:
  - ❖ Implemented a school system authentication process in Rust by automatically opening the browser and registering a custom URL protocol for callback, ensuring accurate identification and privacy security.
  - ❖ Utilized TypeScript async features to invoke Tauri commands, enabling efficient and concurrent downloading and decompressing of assignment files, enhancing processing efficiency.
  - ❖ Built an assignment scoring page with Vue 3, incorporating components to preview various file types (Markdown, PDF, text, etc.) and using Element Plus to construct the file directory tree.
  - ❖ Configured CI/CD with GitHub Actions and used the VuePress framework to build project documents.
- The application was used in the Algorithm Analysis and Design course at SUSTech, which served over 200 teachers, teaching assistants, and students and received positive feedback.

Annear Hotel Management System (Web) 09/2022-12/2022

- This application is an Object-oriented Analysis and Design course project. We are required to implement a feature-rich website with front-end and back-end separation.
- We decided to implement a complete hotel management system, featuring both an end-user website and an administrative side. End users can search for hotel information, view and save room options, book and pay orders online, upload photos and videos to evaluate, and consult with administrators. Administrators can manage bookings, update room details, access visual revenue data, and respond to user inquiries.
- Tech Stack: Java+SpringBoot2+SpringCloud+Vue2+JavaScript ✧My Responsibilities:
  - ❖ Responsible for the overall design of back-end MySQL database, used Nacos as the registry and configuration center, used OpenFeign for microservice communication, and configured gateways to address cross-domain issues.
  - ❖ Used Redis and Lua scripts to prevent duplicate submission attacks, addressing issues with users submitting orders multiple times due to browser refreshes or back navigation.
  - ❖ Utilized RabbitMQ message queues to send order status update notifications.
  - ❖ Visualized hotel revenue data using EChart in the front-end for administrators.
- The project received full marks, one of only 5 out of 25 groups. As the project leader, I enhanced my skills in database system design, team collaboration, and development.

Prizes & Honors

National Bronze Award, Kunpeng Application Innovation Contest – openGauss	10/2022
Honorable Mention, Mathematical Contest in Modeling (MCM)	05/2023 & 05/2022
Second Class, Merit Student Scholarship of Southern University of Science and Technology	11/2022
Third Class, Merit Student Scholarship of Southern University of Science and Technology	11/2023 & 11/2021

Student Works

Research Assistant, IMed Lab, SUSTech	09/2022-06/2024
Student Teaching Assistant, Introduction to Computer Programming	02/2022-06/2022 & 09/2023-01/2024
Student Teaching Assistant, Data Structures and Algorithm Analysis	09/2023-01/2024
Student Teaching Assistant, Computer System Design and Applications	09/2022-06/2023
Student Teaching Assistant, Principles of Database Systems	07/2022-08/2022 & 02/2023-06/2023

Professional Skills

- Proficient in computer networks, operating systems, and data structures, with a solid understanding of computer architecture and a deep knowledge of object-oriented programming.
- Experienced with Linux operating systems and Git, with extensive use of Docker for project deployment, GitHub Actions for CI/CD, and Sphinx for documentation structuring.
- Familiar with the syntax of Python, Java, and Kotlin, and experienced in using frameworks like Flask for Python, Spring Boot for Java, and Compose for Kotlin to develop both small and large-scale projects.
- Skilled in using MySQL relational databases with a solid understanding of basic optimization techniques.
- Excelled in HTML, CSS, JavaScript, and TypeScript basic syntax, as well as Vue and React frameworks
- Able to communicate effectively and fluently in daily interactions. (IELTS 7.0 / GRE 322+4)
- Skilled in communication and teamwork, with strong self-learning abilities and a high standard for code quality and project completion.