QISHEN (SAM) LIANG

Los Angeles, CA 90013 | 805-627-8381 | QishenL@usc.edu | https://www.linkedin.com/in/qishen-sam-liang/

SUMMARY

With the skills listed below, I am currently applying for the **Software Engineer/Network Engineer Intern** position.

TECHNICAL SKILLS

o Languages: C++, C, Java, Python, SQL, P4 Language, MIPS Assembly, Bash, LaTeX, JavaScript
o Tools and Knowledge: Software Defined Networking, Selenium, Security Systems, OS (Unix, Linux), Docker, TCP/IP, Git
o Methodologies: Algorithms, Automations, Complexity Theory, Mininet, Data Collection, Data Analysis, Computer Architecture, OOP, Debugging, IT Support, AI/ML, Troubleshooting, Agile Standards, Research, Systems Administration

PROFESSIONAL EXPERIENCE

WebRTC Collection and Analysis Suite Based on NetUnicorn   UCSB Systems and Networking Lab
Undergraduate Researcher   October 2022-July 2023
o Designed and constructed a state-of-the-art Google Account automated login solution using **Python** and **Selenium** to bypass bot detection to auto-join online conferences
o Optimized deployment by crafting Dockerfile, saving more than 60% of time and effort compared to manual setup, and oversaw headless ARM64 OS Raspberry Pi data collections, accumulating a total of 5G of data from 3 machines simultaneously
o Enhanced the WebRTC data collection pipeline into NetUnicorn, an data collection platform built for distributed computing networks, improving customizability, scalability and efficiency

QoE Estimation for WebRTC Video Conferencing Applications   UCSB Systems and Networking Lab
Undergraduate Researcher   September 2021-June 2022
o Engineered and programmed an automation software based on **Python** and **Selenium**, end-to-end initiation, participation, presentation, and termination of video conferencing sessions
o Integrated and deployed a WebRTC QoS and QoE data collection pipeline to UCSB's PINOT, allowing simultaneous curation of dataset on more than 10 programmable end-hosts
o Researched 1,000+ pages of WebRTC protocols, retransmissions, and multiplexing documentations, drawing connections from RFC documentations to data collected, assisted with tools including NumPy, pandas, SQLite, and Matplotlib
o Curated more than 5 TB of data for analysis and helped formulate a research paper

ACADEMIC PROJECTS

KOS - R3000 based Operating System Development   UC Santa Barbara
Team Leader & Developer   September 2022-December 2022
o Led a 2-person team to develop a Linux-based Operating System in **C** in 10 weeks, encompassing seamless program execution, crash-free operation, support for most Linux commands, and 8 programs concurrent execution
o Engineered a comprehensive OS capable of running programs and inter-process communication, through pipe handling, PID tracking, signals, and memory management
o Created 30+ files and 5000+ lines of codes for system development, including debugging, updates, comments, and documents

Web Application for the UCSB CS Learning Assistant Program   UC Santa Barbara
Team Leader & Developer   March 2021-June 2021
o Developed and improved web application for managing the UCSB CS Learning Assistant (LA) program using **Java**, **JavaScript**, and under the **Spring Boot** framework in 4-person team setting
o Proposed and resolved 6 new tasks and 2 critical bugs, applied the Agile methodology, managed and communicated via scrum meetings, and organized version control and code reviews using GitHub tools, including Kanban board and Pull Request
o Achieved 100% test cases coverage, attained perfect outcomes in final presentation and practical applications, and fulfilled all project objectives efficiently within a constrained timeline

EDUCATION

University of Southern California   Los Angeles, CA
Master of Science in **Computer Science (Computer Networks)**   **CGPA: 3.85**   August 2023-May 2025

University of California, Santa Barbara   Santa Barbara, CA
Bachelor of Science in **Computer Science**
Bachelor of Arts in **Asian American Studies**   **CGPA: 3.95**   August 2019-June 2023

HONORS & CERTIFICATES

Google IT Support Professional Certificate   UCSB College of Engineering High Honors