

Fucheng Hsieh

☎ (714) 280-5665 | ✉ fhsieh@uci.edu | 💻 freddiehsieh | 👤 portfolio.fredhs.dev | 📍 Irvine, CA

EXPERIENCE

- IBM** San Jose, CA
Software Engineer Intern | React, TypeScript, Unit Testing, DevOps Jun. 2022 – Sept. 2022
 - **React Development:** Contributed to the development of Watson Discovery, resulting in the creation of **8** functional components and resolution of **10** issues
 - **Unit Testing:** Improved test coverage for multiple components by **50%** through the use of **Enzyme** and **Cypress**
 - **DevOps:** Collaborated with a team of four engineers in an **agile environment**, participating in standup and scrum meetings to resolve issues and implement new features
- NEMS Lab, National Chiao Tung University** Hsinchu, Taiwan
Research Assistant | C++, Edge Computing, Cellular, Mobile-IoT Aug. 2020 – Aug. 2021
 - **MEC:** Optimized and developed network dispatcher and packet analyzer in 4G networks, reducing **25%** in CPU usage
 - **Cellular/IoT:** Conducted experiments on identifying vulnerabilities in Mobile-IoT devices and contributed to a research paper on enabling traffic Shaping in MEC, resulting in paper acceptance by **MobiCom'21 and CCNC'22**
 - **Dual-uCPE Mesh System:** Designed and implemented a **Dual-uCPE Mesh System**, including a virtualized Mesh controller deployed on a dual-uCPE system using Docker
- Trend Micro** Taipei, Taiwan
Software Engineer Intern | Python, LDAP, QA, Neo4j, Shell Script Summer 2017 & 2018
 - **QA Automation:** Designed and developed an automation tool to ensure product installation follows design guidelines
 - **LDAP Sync System:** Built an IT automation tool to synchronize LDAP user permissions from employee databases, efficiently responding to organizational changes
 - **Database Query Tool:** Built a Neo4j query tool to help developers check standard procedures when detecting installed third-party security software and output analysis results automatically

EDUCATION

- University of California, Irvine** Irvine, CA
M.S. in Computer Science Sept. 2021 – Mar. 2023 (Expected)
- National Chiao Tung University** Hsinchu, Taiwan
B.S. in Computer Science | **GPA:** 3.96/4.0, **Rank:** 2/58 Sept. 2016 – Jun. 2020
 - **Activity:** TA of Linux System Administration (graduate level)

PROJECTS

- High Performance Computing Accelerators** | Bluespec (HDL), C++, Cache Optimization
 - **FPGA CNN Accelerator:** Implemented a highly parallelized CNN accelerator using Bluespec (HDL) for image processing, achieving **20x** faster performance compared to CPU
 - **Cache Optimized Accelerator:** Developed a thermal simulation accelerator using C++ and optimization techniques such as SIMD vectorization, multithreading; **reducing cache misses by 30%**, resulting in **140x execution time boost (Top 5 in competition)**
- Job Aggregator** | Go, Python, React, Firebase, MongoDB, Docker, Kubernetes
 - Developed a Web App using Python for scraping job postings from various websites, Go for API server, React.js for frontend, Firebase for storage, and MongoDB for caching the data
 - Dockerized the application and deployed with **K8s**, adding load balancing for improved scalability and reliability
 - Designed the Go server to dynamically interact with MongoDB and Firebase, fetching new data as needed
- BlueSense** | Rust, Bluetooth, Web
 - Designed and launched BlueSense, a robust device tracking app that leverages the combination of Rust programming and Bluetooth Low Energy protocol to deliver accurate and real-time device detection
 - Leveraged an LRU cache to optimize data storage and enhance the performance of the device tracking app

SKILLS

Languages: C, C++, Python, Go, Rust, JavaScript (React, Express, Node, Next), Bash, Bluespec
Tools: Linux, Git, Docker, Kubernetes, Cloud, System Admin, OpenWrt, Firebase, MongoDB