

Fucheng Hsieh

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EXPERIENCE

IBM

San Jose, CA

Software Engineer Intern | React, TypeScript, Unit Testing, DevOps

Jun. 2022 – Sept. 2022

- **React Development:** Contributed to the development of the Watson Discovery Annotation tool using React, resulting in the creation of **8** functional components and the resolution of **10** issues
- **Unit Testing:** Improved test coverage for multiple React components by **50%** through the use of Enzyme, Cypress, and a GitHub CI/CD pipeline
- **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:** Refactored 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 Prioritized 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, Crawler, Shell Script

Summer 2017 & 2018

- **QA Automation Tool:** Designed and developed a QA automation tool to ensure product installation procedures followed design guidelines and exported analysis automatically
- **LDAP Sync System:** Built an IT automation tool to synchronize LDAP user permissions from employee databases in response to organizational changes
- **Python Query Tool:** Built a Python Query Tool for developers to check standard procedures when detecting installed third-party security software

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:** 3.9/4.0, **Rank:** 2/58

Sept. 2016 – Jun. 2020

- **Honor:** Academic Excellence Award, 4 Semesters
- **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 **10x** better power efficiency and **20x** faster performance compared to GPUs and CPUs
- **Cache Optimized Accelerator:** Developed a thermal simulation accelerator using C++ and optimization techniques such as SIMD vectorization, multithreading, and **reducing cache misses by 30%**, resulting in **140x execution time boost (Top 5 in competition)**

Job Aggregator

 | Go, Python, React, Firebase, MongoDB

- **Full-stack App:** Developed a web application using Python for web scraping job postings from LinkedIn and Indeed, Go for the API server, React.js for displaying the data in a table, Firebase for storage, and MongoDB for caching
- **Automated Scraping:** Implemented a job scraper with Python that runs daily to collect job postings automatically
- **Data Interaction:** Designed the system such that the Go API server interacts with MongoDB for caching and Firebase for storage, dynamically fetching new data as needed

SKILLS

Languages : Go, C/C++, Python (Keras), JavaScript (React, Express, Node, TypeScript), Sass, Bash, Bluespec

Tools : Linux, Git, Unit Testing Frameworks, K8s, Docker, Wireshark, OpenWrt, Firebase, MongoDB, Kafka, \LaTeX