Fucheng Hsieh

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EXPERIENCE

IBM   **San Jose, CA**

Software Engineer Intern | React (Redux), TypeScript, Unit Test, DevOps   Jun. 2022 – Sept. 2022

- **React Development:** Built two React components for Watson Discovery Annotation tool that let users label text for performing NLP analysis. Contributed over **1500** lines of code, covering 8 components and 10 issues
- **Unit Test**: Increased over **50%** unit test coverage for multiple React components by incorporating Enzyme and Cypress scripts with a combination of GitHub CI/CD pipeline
- **DevOps:** Teamed with four engineers and worked in an **agile, collaborative environment** through standup and scrum meetings to solve issues and implement new features

NEMS Lab, National Chiao Tung University   **Hsinchu, Taiwan**

Research Assistant | C++, Edge Computing, 4G/5G, IoT   Aug. 2020 – Aug. 2021

- **MEC:** Refactored network dispatcher and packet analyzer of MEC in 4G Networks, reduced execution time by **25%**
- **IoT:** Performed experiments to discover vulnerabilities in Mobile-IoT devices. Paper accepted by **ACM MobiCom'21**
- **Research Work:** Organized and drafted research paper on enabling Prioritized Traffic Shaping in MEC. Paper accepted by **IEEE CCNC'22**
- **Dual-uCPE Mesh System:** Designed and implemented an All-in-One business system with IP Camera, POS, and Mesh Wi-Fi. Virtualized Mesh controller with **Docker** and deployed on a **dual-uCPE** system

Trend Micro   **Taipei, Taiwan**

Software Engineer Intern | Python, LDAP, QA, Crawler, Shell   Summer 2017 & 2018

- **QA Automation Tool:** Designed and developed a **QA automation tool** to ensure product installation procedure follows the design guidelines and export analysis automatically
- **LDAP Sync System:** Programmed IT automated tool to synchronize **LDAP user permissions** from employee database whenever an organizational change is detected. Deployed to IT system and executed periodically
- **Python Query Tool:** Built Query Tool for developers to check the standard procedures whenever they detect Third-party security software. Reduced search time by **70%**

EDUCATION

University of California, Irvine   **Irvine, CA**

M.S. in Computer Science   Sept. 2021 – Dec. 2022 (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 System Administration (graduate level)

PROJECTS

FPGA CNN Accelerator | Bluespec, Deep Learning

- Designed a highly parallelized **CNN accelerator**, performing edge detections in images with **FPGA** hardware
- Implemented CNN filters in Bluespec, performing **10x** better power efficiency than GPUs and **20x** faster than CPUs

Cache Optimized Accelerator | C++, SIMD, Cache Optimization, Multithreading

- Developed a thermal simulation accelerator with C++, boosting execution time by **140x (Top 5 in competition)**
- Utilized **C++ STL** for multithreading, **AVX** instructions for SIMD vectorization, and optimized the algorithm to reduce cache misses by **30%**

Node.js Bulletin-Board System | Node.js, MongoDB, AWS, Apache Kafka

- Designed a BBS system using **Node.js**, allowing users to Register, Login, Chat, Create, Delete, and Edit posts
- Utilized **MongoDB**, **AWS S3** for saving user information and user posts, **Kafka** for subscription service on different bulletin boards and internal message service

SKILLS

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

Tools : Linux, Git, Storybook, Enzyme, Cypress, Docker, Wireshark, OpenWrt, MongoDB, AWS, LaTeX