

Szu-Yu (Leon) Lee

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EDUCATION

Carnegie Mellon University

Master of Science in Mobile and IoT Engineering

Relevant Courses: Distributed Systems, Computer Systems, Software Engineering, Information Security, Embedded Software Design, Cloud Infrastructure, Network and Telecommunications, AI Governance

Pittsburgh, PA

May 2023 – Dec. 2024

National Tsing Hua University

Bachelor of Science in Computer Science

Relevant Courses: Database, Algorithm, Data Structures, Machine Learning, Computer Networks

Honor: Dean's List 2021

Hsinchu, Taiwan

Sep. 2017 – Feb. 2022

SKILLS

Technical: C/C++, Python, Typescript, Java, Go, Git, AWS, GDB, CI/CD, Docker, Testing, Linux, Android, Arduino

WORK EXPERIENCE

Amazon

SDE Intern, Full-Stack Dev in Shoppable Content Team

Seattle, WA

May 2024 – Aug. 2024

- Developed automated services and APIs by integrating **DynamoDB**, **S3**, and **AWS Lambda**, leading to a **100%** increase in the volume of downloadable content available in the Content Explorer application.
- Implemented backend logic in pipeline using **AWS CDK** and Smithy models and created unit tests in **Java** with extensive use of **Mockito**, achieving full line coverage and ensuring robust performance and reliability.
- Designed and implemented search and asynchronous download features using **React** and **TypeScript** and developed a progress bar prediction algorithm to provide real-time feedback, enhancing overall user experience.

Asustek Computer Inc

SOFTWARE AND FIRMWARE DEVELOPMENT INTERN

Taipei, Taiwan

Jul. 2021 – Dec. 2021

- Built a bilateral Wi-Fi Display application including source and receiver on a single **Linux System** by GNOME packages, tested on monitors, laptops, mobiles and formatted as Debian package with **CI/CD** process on **Gitlab**
- Analyzed and tested the usage of performances of multiple **Android** emulators into Linux systems with bugs fixed, using **C** & **shell scripts** to make automations of multiple command-line testing and fine-tuning of source code
- Applied hierarchical security models by modifying **Linux kernels**, adding AppArmor rule profiles and setting the LoadPin environment to constrain the usage of Linux applications for specific users at the kernel level

Novatek Microelectronics Corp

SOFTWARE ENGINEERING INTERN AT SW-MSW, TEAM LEADER

Hsinchu, Taiwan

Jul. 2022 – Aug. 2022

- Created firmware and a pattern compressor in FPGA verification of **C** code package to reduce the code size by **50%** and accelerate the process of loading multiple security test patterns
- Established automatic IC datasheet conversion and Logging comparison tool by Python to speed up the original process by 20 times with an explicit user interface

National Tsing Hua University

Head TA of Introduction to Programming (**Python**), NTHU

Hsinchu, Taiwan

Aug. 2022 – Jun. 2023

- Led a team of TAs teaching 300 students, help designing and evaluating assignment, provided feedback to students

PROJECTS

MallocLab at CMU

May 2023 – Aug. 2023

- Developed a dynamic **memory allocator in C**, including malloc, free, and realloc, supporting a 64-bit address space.
- Enhanced throughput by 100 times** through converting implicit free lists to segregated lists, **ranked top 1%** in the class; Increased utilization by 25% by implementing footless blocks and mini blocks

Introduction to Multimedia - Live Video Streaming

Apr. 2021 – Jun. 2021

- Implemented and fine-tuned HYSA algorithm by Python, an algorithm estimating the latency and choosing the bitrate with lowest latency subjected to the estimated buffer occupancy higher than threshold
- Improved Quality of Experience in video streaming by **100%** with predicting strategy using Python, **outperforming 95%** of students in class

Double-Linked Blockchain with high-speed verification

Feb. 2020 – Aug. 2021

- Built a blockchain prototype by **JavaScript** with new consensus, scattering the centralized distribution of traditional Proof of Stake and eliminating the problem of energy consumption generated by traditional Proof of Work consensus