

An-Chi Liu

SOFTWARE ENGINEER · SYSTEM SOFTWARE PROFESSION

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Education

National Yang Ming Chiao Tung University (NYCU)

M.S. in Computer Science and Engineering

- GPA: 4.11/4.3. Thesis: "Offworker: An Offloading Framework for Parallel Web Applications". The research focused on offloading parallel web applications to the cloud using web workers, resulting in a performance improvement of up to 5x on mobile devices. Published at **WISE'22** (top-tier conference).
- Earned **Best Master's Thesis Award** from the Institute of Information & Computing Machinery, Taiwan (2022). (only 13 winners)

Hsinchu, Taiwan

Sep. 2019 - May. 2022

Polytechnic University of Milan

M.S. Exchange Program in Computer Science and Engineering

Milan, Italy

Sep. 2021 - Feb. 2022

National Taiwan University (NTU)

B.S. in Bio-Industrial Mechatronics Engineering

Taipei, Taiwan

Sep. 2014 - Jun. 2019

Work Experience

Mujin, Inc

Backend System Software Engineer

- Developed the universal **network devices discovery service** based on **C++** and **PcapPlusPlus**, which can detect any IP devices in the network, including robots, cameras, and other devices.
- Developed and maintained features and functionality of **industrial cameras** for robotics, including Ensenso, IDS, Lucid, Irayple, Photoneo, Zivid, etc.
- Developed a **live streaming and playback system** that can support more than a hundred of **surveillance cameras** based on **FFmpeg**, **WebRTC** and **Golang**.
- Developed robot **pendant GUI** written in **Qt/QML with Python**.
- Implemented new **web APIs in Golang** to support frontend projects.
- Integrated new **ZMQ APIs** written in **C++** to enhance the functionality of internal services within the robot system.
- Maintained and supported existing services written in **Python and C++ with PyBind11** binding to ensure their smooth operation and reliability.

Tokyo, Japan

Sep 2022 - Present

National Yang Ming Chiao Tung University

Teaching Assistant

- Parallel Programming (Spring 2021, Fall 2020). Won the **NYCU outstanding teaching assistant award** in 2021. Led a four-TA team to serve a 120-student course, including designing programming assignments, providing workplace environments, and interacting with students.
- Numerical Software Development (Spring 2021, Fall 2020, Spring 2020, Fall 2019). Reviewed and scored students' programming assignments on Github.

Hsinchu, Taiwan

2019 - 2021

Open-Source Projects

PcapPlusPlus

- PcapPlusPlus is a multiplatform **C++** library for capturing, parsing and crafting of network packets.
- While developing Mujin network service using PcapPlusPlus, I found many places in PcapPlusPlus can be improved, so I keep contributing to this project, providing new features and bug fixes.
- I was granted as a **maintainer** of the project from Feb, 2024.
- I have been actively maintaining the project, reviewing pull requests, and providing technical support to users, including reviewing about 100 PRs and contributing about 23 PRs.
- Project link: <https://github.com/seladb/PcapPlusPlus/>.

modmesh

- modmesh is a toolkit for solving partial differential equations. It is written in **C++** and **Pybind11** for high-Performance numerical computing.
- This project is contributed by many Taiwanese software engineers in semiconductor industry for fun. We aim to develop the fastest and the most efficient numerical toolkit and we like to test new ideas on it.
- I am an active contributor with about 45 PRs merged.
- Project link: <https://github.com/solvcon/modmesh>.

node-color-log

- I developed and maintained a lightweight **JavaScript** logger with **220k/month** downloads, which provides an alternative solution to existing mature counterparts which usually have a huge codebase.
- Project link: <https://github.com/tigercosmos/node-color-log>.

Skills

Programming

Proficient: C++11, C++17, **Experience:** Golang, Python 2, Python 3, JavaScript, TypeScript, Node.js

Interests

programming languages, web technology, system software, parallel programming, GPU programming

Frameworks/Tools

Make, CMake, CI/CD, Debuggers, Express, Flask, GDB, Git, HTML5, jQuery, Make, Pybind11

Qt/QML, REST API, Wireshark, ZMQ, FFmpeg, GoogleTest, WebRTC, Angular, Cuda, OpenCL, etc.

Languages

Mandarin Chinese (Native), English (Business)