

An-Chi Liu

SOFTWARE ENGINEER · SYSTEM SOFTWARE PROFESSION

Koto City, Tokyo, Japan

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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** conference (Ranking A).
- Earned **Best Master's Thesis Award**, 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

Tokyo, Japan
Sep 2022 - Present

- Developed the **NetProbe** project, identifying network devices on LAN port despite unknown details. **C++ framework** enables easy, non-disruptive updates. Implemented diverse **industrial robotic protocols** via PcapPlusPlus(libpcap) for Mujin device detection.
- Heavy contributor for the **PcapPlusPlus** open-source project.
- 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.

National Yang Ming Chiao Tung University

Teaching Assistant

Hsinchu, Taiwan
2019 - 2021

- 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.

CloudMosa, Inc.

Software Engineering Intern

Taipei, Taiwan
Jul 2018 - Sep 2018

- Developed the module that enables users to download files directly to Dropbox on Puffin browser, including a Python backend to connect cloud services APIs and modifications for the core of Puffin browser (a remote browser engine).
- Developed parts of frontend GUI (with GTK) for the Linux version of Puffin browser.

Projects

Open-Source Projects

- **PcapPlusPlus**: PcapPlusPlus is a multiplatform C++ library for capturing, parsing and crafting of network packets. Mujin's NetProbe project relies on this project for packets handling. While developing NetProbe, I found many places in PcapPlusPlus can be improved, so I keep contributing to this project, providing new features and bug fixes. I was also invited to join the core developer's channel. 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. Project link: <https://github.com/solvcon/modmesh>.
- **node-color-log**: Owned a lightweight JavaScript logger with **46k/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

C/C++, Python, JavaScript, Node.js, Golang, Rust, PHP, Java, C#, SQL

Interests

web technology, web browser, system software, parallel programming, heterogeneous computing

Frameworks/Tools

Angular, CMake, CI/CD, Debuggers, Express, Flask, GDB, Git, HTML5, jQuery, Make, pybind11
Qt/QML, REST API, Wireshark, ZMQ

Languages

Mandarin Chinese (Native), English (Business)