An-Chi **Liu**

SOFTWARE ENGINEER · SYSTEM SOFTWARE & AI ENGINEERING PROFESSION

Taiwanese, based in Tokyo, Japan (Pemeanent Resident)

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Work Experience

Datra AI — *Remote*
Technical Co-founder — *Jun. 2025 – Present*
- Co-founded an AI startup building an **AI chatbot** with an inbox system for **Shopify** merchants in skincare.
- Led end-to-end product development, including infrastructure, system architecture, backend (**Golang**), frontend (**React**), **AI engineering**, and deployment on **AWS** with **Docker**.
- Built an **AI system** integrating various **LLMs** (e.g., OpenAI, Claude), with optimized **prompt engineering** and retrieval-augmented generation (**RAG**) techniques.
- Collaborated with the business co-founder and managed up to **2** part-time developers, assisting with product development and maintenance.

Mujin, Inc. — *Tokyo, Japan*
Backend Software Engineer — *Sep. 2022 – May 2025*
- Developed a universal **network device discovery service** in **C++** using **PcapPlusPlus** that searches for and detects IP devices on the network within seconds, including robots, cameras, and other devices.
- Developed features for and maintained **industrial camera** functionality for robotics in **C++**.
- Developed a **real-time live streaming and playback system** supporting over **100** surveillance cameras with latency under **50 ms**, based on **FFmpeg**, **WebRTC**, and **Golang**.
- Developed a robot **pendant GUI** in **Qt/QML** and **Python**.
- Implemented new **web APIs in Golang** to support frontend projects.
- Integrated new **ZMQ** APIs written in **C++** to enhance internal robot system services.
- Maintained and supported existing services written in **Python** and **C++** with **pybind11** bindings, ensuring smooth operation and reliability.
- Improved and maintained a sales-purpose AGV robot demo cell that hosted over **20** company visitors per month; added a new simulation environment, a more user-friendly interface, and improved stability.
- Designed the handheld terminal app UI for the warehouse system in **Figma** and implemented it in **React**.
- Added new features to the warehouse and fleet manager systems written in **C++** and **Python**.

Education

National Yang Ming Chiao Tung University (NYCU) — *Hsinchu, Taiwan*
M.S. in Computer Science and Engineering — *Sep. 2019 – May. 2022*
- GPA: 4.11/4.3. Thesis: **Offworker: An Offloading Framework for Parallel Web Applications**, published in **WISE 2022** (top-tier conference).
- Received the **Best Master's Thesis Award** from the Institute of Information & Computing Machinery, Taiwan (2022; one of 13 awardees).

National Taiwan University (NTU) — *Taipei, Taiwan*
B.S. in Bio-Industrial Mechatronics Engineering — *Sep. 2014 – Jun. 2019*

Open-Source Projects

PcapPlusPlus
- PcapPlusPlus is a multi-platform **C++ library** for capturing, parsing, and crafting **network packets**, with **3k stars** on GitHub.
- **One of five core maintainers** of PcapPlusPlus since 2024.
- Major contributions include fixing performance issues, establishing a more efficient CI/CD pipeline, adding new features, and improving documentation.
- 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.
- Major contributions include a **low-level array implementation** similar to **NumPy**, leveraging C++ templates and Python bindings.
- Gave a talk at **PyCon JP 2024**: "Crafting Your Own NumPy: Do More in C++ and Make It Python".
- Project link: `https://github.com/solvcon/modmesh`.

Skills

Programming	**Proficient:** C++11, C++14, C++17, **Experience:** Golang, Python 3, JavaScript, TypeScript, Node.js
Frameworks/Tools	Unix/Linux, Make, CMake, ZMQ, CI/CD, Docker, AWS, GDB, Git, pybind11, Network Packet, Profiler, Debugger, Qt/QML, REST API, GraphQL, Wireshark, FFmpeg, GoogleTest, WebRTC, React, Vue, jQuery, HTML 5, etc.
AI engineering	LLM model integration (OpenAI, Claude, etc), Prompt engineering, RAG, MCP, etc.
Languages	Mandarin Chinese (Native), English (Business), Japanese (Basic)