An-Chi **Liu**

SOFTWARE ENGINEER · SYSTEM SOFTWARE PROFESSION

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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**". 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)

Polytechnic University of Milan
Milan, Italy
M.S. Exchange Program in Computer Science and Engineering
Sep. 2021 - Feb. 2022

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

Work Experience

Mujin, Inc
Tokyo, Japan
Backend System Software Engineer
Sep 2022 - Present
- Led the self-development of an innovative project called "Auto Network Detection," enabling the identification of devices connected to a LAN port even when their IP, port, and MAC addresses are unknown.
  - Created a flexible and extensible C++ framework that allows users to detect new devices by simply adding new entries to the database without the need to modify or alter the program.
  - Implemented various protocols in promiscuous mode using libpcap, such as Ethernet/IP, CIP, MDNS, GVCP, Telnet, Generic UDP/TCP, to ensure comprehensive device detection.
  - Successfully utilized the framework to detect and identify a wide range of ethernet devices, including robots, cameras, grippers, sensors, and more, within the Mujin environment.
- 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
Hsinchu, Taiwan
Teaching Assistant
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.
Taipei, Taiwan
Software Engineering Intern
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
- **WxKitty**: Owned a Line Chatobot for Taiwan weather checking, which has **6000 users** and gets more than **100 stars**. Providing information on weather, forecast, typhoon, earthquake, etc.
- **Vocabulary Titan**: Owned a Line Chatobot integrated different online dictionaries for English vocabulary looking up with **8000 users**, which shorten the searching time of switching different dictionaries when preparing for English exams like TOEFL or GRE.
- **node-color-log**: Owned a lightweight JavaScript logger with **10k/month** downloads, which provides an alternative solution to existing mature counterparts which are usually huge.
- **Servo Browser**: Contributed to Mozilla's new web browser engine written in Rust (20k stars). Contributed about **50 commits**, including browser core funtionality (followed web standard SPEC) and web tests.

Skills

Programming	JavaScript, C/C++, Python, 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)