

# Po-Yu Chen

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## Summary

A highly adaptive software engineer with demonstrated ability to rapidly self-master new technologies and domains with minimal guidance. Actively seeking a software engineering role to apply extensive computer science knowledge and problem-solving skills, to deliver valuable contributions.

## Education

### National Taiwan University

M.S. in Electrical Engineering, Computer Science Track, GPA: 4.20/4.30

Taipei, Taiwan  
Sep. 2022 - Jun. 2024

Research Interests: High Performance Computing (HPC), Parallel Graph Algorithms on GPUs

### National Taiwan University

B.B.A. in Information Management / B.B.A. in International Business (Double Major), GPA: 3.82/4.30

Taipei, Taiwan  
Sep. 2017 - Jun. 2022

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Computer Networks, Cloud Native Application Development, Machine Learning, Cyber Security, Computer Vision

## Work Experience

### NVIDIA

Taipei, Taiwan

**System Software Engineer** | Tech Stack: C/C++, Rust, Trusted OS, OP-TEE, Android System Security

Nov. 2024 - Present

- Developed and delivered security features leveraging Trusted Execution Environment (TEE) for Android on NVIDIA Tegra SoCs, including hardware-backed cryptographic services (Keymint, Gatekeeper) and content protection system (Widevine)
- Constructed a robust bridge connecting Rust-based Android Keymint with C/C++ OP-TEE components via Foreign Function Interface (FFI), leveraging Rust's strong memory safety guarantees while maintaining high-performance secure cryptographic operations in the TEE

### MediaTek

Hsinchu, Taiwan

**Software Engineer Intern** | Tech Stack: Modern C++, Bazel, Protobuf, Perfetto

Jul. 2023 - Aug. 2023

- Enhanced the 5G modem profiler by introducing new visualization features, benefiting over 100 colleagues
- Developed a parser that serializes data into Google's Protocol Buffers format, seamlessly integrating with Google's Perfetto Trace Viewer UI, thereby enabling more effective analysis and debugging of performance issues

### A&R Research Capital

Taipei, Taiwan

**Software Engineer / Quantitative Trader** | Tech Stack: Modern C++, CMake, RESTful API, WebSocket, GoogleTest, Docker

Jan. 2022 - Sep. 2022

- Led a 5-person infrastructure team to develop tools for crypto trading, utilizing a Test-Driven Development (TDD) approach
- initiate a project to redesigned the trading engine by converting CRTP-based static polymorphism to runtime polymorphism through proper inheritance hierarchies, resulting in improved maintainability and easier onboarding for new team members
- Developed a robust C++ high-frequency trading algorithm with sub-millisecond response time, yielding consistent profits
- Elevated test coverage from 40% to 90% by writing unit tests utilizing GoogleTest

## Projects

### Cloud Native Application - Online Food Ordering Platform

Taipei, Taiwan

Tech Stack: Node.js, TypeScript, Nginx, MongoDB, Redis, Docker, Azure

Oct. 2022 - Jan. 2023

- Developed a cloud-native application, following the 12-factor app methodology to ensure scalability, portability, and maintainability
- Implemented effective load balancing solutions within the backend system, significantly enhancing the platform's availability and scalability
- Successfully deployed the application on Azure cloud platform

### Trademark Retrieval Mobile App

Taipei, Taiwan

Tech Stack: PyTorch, PostgreSQL, Deep Learning, Image Retrieval

Feb. 2021 - Jan. 2022

- Crawled the labels for trademark image and maintained a postgresQL database to store the data
- Fine-tuned a ResNet-based model on the trademark data to learn image representations through a multi-label classification task, enabling downstream image retrieval task

### Secure P2P Micro-payment System

Taipei, Taiwan

Tech Stack: C++, Linux Socket Programming, Multithread Programming

Nov. 2021 - Jan. 2022

- Developed a secure client-server system using C++ and Linux TCP/SSL sockets for encrypted micro-payment transactions
- Created a multithreaded server handling simultaneous client connections, enhancing the responsiveness and throughput
- Designed a thread-safe job queue using mutex locks and conditional variables to solve the producer-consumer problem

## Skills

<b>Programming</b>	C/C++, Rust, Python, Cuda, Node.js, TypeScript
<b>Tools</b>	Git, Unix/Linux, Docker, Gdb, CMake, Bazel
<b>CS Domain</b>	OS, Computer Network, ML/DL, Multithreading
<b>Misc</b>	PyTorch, LaTeX, postgresQL MongoDB, Nginx, Azure
<b>Language</b>	Mandarin (Native), English (Fluent), Japanese (Basic)