Po-Yu **Chen**

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Work Experience

NVIDIA
Taipei, Taiwan

System Software Engineer - Core Platform Security Team | *Tech Stack: C/C++, Rust, Embedded System, Trusted Operating System (TOS), Trusted Execution Environment (TEE) Android Security, ARM TrustZone, OP-TEE*
Nov. 2024 - Present

- Designed and developed hardware-backed security solutions for Tegra SoCs across the full NVIDIA software stack—spanning device drivers, trusted OS, and trusted applications—through close collaboration with cross-functional teams in hardware, firmware, platform, and application domains
- Implemented and improved Android security features on Tegra SoCs, leveraging ARM TrustZone and platform-specific Hardware Security Modules
  - KeyStore (KeyMint) - Hardware-backed key management and cryptographic operations
  - Gatekeeper - Device authentication and secure lock screen implementation
  - Android Verified Boot (AVB) - Boot integrity verification and secure boot chain
  - Remote Key Provisioning (RKP) - Secure key provisioning from remote servers
  - Widevine DRM - Digital rights management for protected content playback

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

Education

National Taiwan University
Taipei, Taiwan

M.S. in Electrical Engineering, Computer Science Track, GPA: 4.20/4.30
Sep. 2022 - Jun. 2024

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

National Taiwan University
Taipei, Taiwan

B.B.A. in Information Management / B.B.A. in International Business (Double Major), GPA: 3.82/4.30
Sep. 2017 - Jun. 2022

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

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

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