Chung-Yen (Matt) Chiang

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Location: Taipei, Taiwan

Professional Experience

Amazon - Connectivity Team *Apr 2026 – Present*
Software Development Engineer II (L5)

- Lifted end-to-end Wi-Fi throughput **2.36x** (10.59 to 25 Mbps) on **FreeRTOS** via cross-layer profiling; resolved IMI memory bottleneck (SDIO), TCP shared-lock and mutex contention (kernel), and application memory contention, plus CPU overclock tuning.
- Architected runtime **dynamic NVRAM/CLM loading** from flash, enabling a single firmware image to serve multiple SKUs and regulatory regions without per-region rebuild.
- Led **Wi-Fi/BLE bring-up** on next-gen ASIC platforms; integrated wireless chipset BSPs/SDKs into production FreeRTOS firmware for NPI programs.
- Owned **RF validation firmware** delivery, building purpose-built images to unblock RF, antenna, and platform validation across NPI cycles.
- Drove root-cause analysis and resolution of **10+ cross-layer firmware tickets** spanning Wi-Fi, BLE, and platform issues, from internal validation through field escalations.

Amazon - Connectivity Team *Aug 2023 – Mar 2026*
Software Development Engineer I (L4)

- Built a **modular BLE setup subsystem** from scratch with an **E2E encryption channel** and dynamic country-code configuration, enabling global SKU deployment from a single firmware base.
- Optimized DHCP reconnection logic, reducing reconnection latency by **76%** under unstable network conditions.
- Tuned **WMM QoS (EDCA)** parameters to prioritize latency-sensitive traffic, improving p99 latency for streaming services by **24%**.
- Implemented Wi-Fi power-saving and wake-up mechanisms, extending battery-operated IoT device standby from **40 to 65 days**.
- Resolved **50+ firmware tickets** across Wi-Fi, BLE, and connectivity stack from internal validation and field reports.

Amazon - Connectivity Team *Sep 2022 – Jul 2023*
Software Development Engineer Intern

- Improved priority-based connection management logic, raising connection success rate across heterogeneous IoT ecosystems.
- Debugged and resolved **20+ critical firmware issues** during validation of major product launches.
- Developed automated diagnostic tools for interoperability testing across **60+ commercial router models**.

Academia Sinica - Institute of Information Science *Jul 2022 – Aug 2022*
Research Intern (Advised by Prof. Meng Chang Chen)

- Reverse-engineered obfuscated malware using **IDA Pro** to identify sandbox evasion triggers and anti-analysis behaviors.

- Researched hardware-level evasion techniques (CPU/registry checks) to improve detection accuracy of analysis environments.
- Implemented a modular detection framework in C and Python to extend the **Cuckoo Sandbox** monitor.

Research & Projects

Secure Channels for Smart Manufacturing Systems in Cloud Environments (Advised by Prof. Nai Wei Lo) *Jul 2021 – Feb 2022*
1st Author, CISC 2022
Recipient, MOST Undergraduate Research Scholarship

- Researched and implemented **Site-to-Site IPsec** secure channels for industrial communication between local gateways and AWS VPC.
- Conducted deep packet inspection (DPI) with **Wireshark** and benchmarked performance using iPerf3 and Netperf.
- Investigated **ARMv8 Cryptographic Extensions** to accelerate encryption/decryption on resource-constrained devices.

Billiards Guidance with HoloLens 2 (Advised by Prof. Chuan Kai Yang) *Jul 2021 – May 2022*
Team Developer — Special Topics in Information Management

- Built a real-time trajectory projection system on HoloLens 2 using BFS-based reflection algorithms to simulate and visualize cue ball paths in MR.

Technical Skills

Core Domains	Embedded Systems, Wi-Fi & BLE, RTOS (FreeRTOS), BSP/SDK Integration, Cross-Layer Performance Profiling
Wireless	WMM/EDCA, A-MPDU/A-MSDU, NVRAM/CLM, RF/antenna validation, Monitor-mode sniffing
Programming	C, C++, Python, Shell Scripting
Tools	Linux, GDB / JTAG, perf, Wireshark, tcpdump, iperf3, Git
Languages	English (Professional), Mandarin (Native)

Education

National Taiwan University of Science and Technology *2019 – 2023*
B.B.A. in Information Management *GPA: 4.01/4.30*
Academic Excellence Award - Top 2 of class for three consecutive semesters
Selected Coursework: Computer Architecture (A+), Data Structures (A+), Operating Systems (A), Algorithms (A)