Chien-Hsien Chu

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Education

National Yang Ming Chiao Tung University (NYCU)

Hsinchu, Taiwan

M.S. in Computer Science — *Sep. 2023 – Present*

- Overall GPA: 4.2/4.3
- Advisor: Prof. Chien-Chao Tseng.
- Research Focus: Observability, Automated Fault Detection and Recovery in Cloud-Native O-RAN Systems.
- Relevant Courses: Cloud Native, Software-Defined Networking, System Administration, Network Administration.

Awards & Honors

Academic Excellence Award, National Yang Ming Chiao Tung University (NYCU) — *Spring 2024*

Academic Excellence Award, National Yang Ming Chiao Tung University (NYCU) — *Fall 2023*

Academic & Technical Experience

Infrastructure Automation and Management for Laboratory Environment

System Administrator, Wireless & Internet Lab (WinLab), NYCU — *Jul. 2024 – Present*

- Automated cluster provisioning and application deployment via **Talos Linux** and **Flux CD**.
- Integrated **Velero**, **MinIO**, **Grafana**, **Keycloak**, and others for backup, storage, access control, and other features.
- Managed **Harvester** clusters and migrated to **Proxmox VE** for improved stability and flexibility.

Kubernetes Networking and Security Enhancement for Department Infrastructure

System Teach Assistant, CSIT, NYCU — *Jul. 2024 – Present*

- Migrated networking from **Flannel** to **Calico** for fine-grained **NetworkPolicy** enforcement.
- Implemented **Istio Egress Gateway** for unified outbound traffic management.
- Evaluated **External Secrets Operator (ESO)** and **OpenBao (Vault fork)** for Kubernetes secret management.

Observability, Automated Fault Detection and Recovery in Cloud-Native O-RAN Systems (M.S. Thesis)

Graduate Student Assistant, Wireless & Internet Lab (WinLab), NYCU — *Oct. 2025 – Present*

- Currently contributing to the development of an integrated observability platform that unifies logs, metrics, and traces across O-Cloud clusters to enhance real-time visibility, fault diagnosis and fault recovery.

Kubernetes Infrastructure and DevOps Workflow Development

Technical Assistant, Information Technology Service Center, NYCU — *Sep. 2023 – Aug. 2024*

- Built scalable **Kubernetes** infrastructure for institutional systems.
- Enhanced CI/CD automation using **GitLab CI** to improve delivery reliability.

Multi-Cluster Management System

Graduate Student Assistant, Wireless & Internet Lab (WinLab), NYCU — *Sep. 2023 – Jan. 2024*

- Studied the architecture and orchestration of a Kubernetes-based **multi-cluster management system** integrating **Karmada**, **Cilium**, and **Thanos** for orchestration and observability.

Work Experience

ISCOM Online International Information Inc.

Taichung, Taiwan

R&D Engineer, R&D Department — *Jul. 2022 – Aug. 2023*

- Built and managed **Kubernetes** across on-premises and cloud (**AKS**).
- Designed and implemented internal **GitLab CI/CD pipelines** to automate build, test, and deployment.
- Established a unified frontend framework with **Next.js**, enhancing development efficiency and code reuse.

Full-stack Engineer / Technical Project Manager, Business Unit *Jul. 2018 – Jun. 2022*

- Led and delivered over **45 web and enterprise projects**, including **e-commerce**, **POS**, and **GIS-based systems**.
- Developed full-stack solutions using **ASP.NET Core**, **Laravel**, **Next.js**, and **Vue.js** with **MSSQL** and **MySQL** databases.
- Integrated multiple third-party and enterprise services such as **payment gateways**, **LINE OA**, and **POS systems**.
- Assisted clients with **Azure Cloud** deployment and maintenance of web apps, VMs, and databases.
- Refactored legacy **.NET Framework** backend into cross-platform containerizable **.NET Core**.

Internship *Taichung, Taiwan*

Software Engineer Intern *Jul. 2015 – Jun. 2018*

- **ISCOM Inc. (2017–2018):** Developed **ASP.NET MVC** and Web APIs integrating public transport and mapping data.
- **BitCloud Co. (2016–2017):** Developed responsive UI and optimized client-side performance for web applications.
- **RCE Power Inc. (2015–2016):** Built **Python Selenium** crawlers with **MySQL** to automate internal data collection.

Publications

An O-RAN Compliant Intent-Based MANO Framework for End-to-End Network Slicing

Yi-Hong Lin*, Chien-Hsien Chu, Wen-Ju Chiang, and Chien-Chao Tseng

- BIOTC 2025 (oral) and IIHMSP 2025 (poster).
- Proposed an O-RAN–compliant intent-driven MANO framework for automated E2E network slicing deployment.

Invited Talks

Dec. 2025	**Guest Speaker**, Advanced Kubernetes Networking and Troubleshooting	*NYCU*
Sep. 2024	**Guest Speaker**, Introduction to Kubernetes and Its Networking Fundamentals	*NYCU*
Mar. 2022	**Invited Lecturer**, Exploring Trends and Career Paths in the Information Industry	*CSMU*