

Benedict Ing Ngie Tiong

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Education

National Yang Ming Chiao Tung University (NYCU)

Sep. 2023 - Jan. 2026

M.S. in Computer Science

- Thesis:** A CI/CD Framework for Zero Downtime Deployment in Wi-Fi Mesh Networks
- Research Focus:** Network Function Virtualization (NFV), CI/CD, DevOps, and Cloud-Native Technologies
- Advisor:** Prof. Chien-Chao Tseng (Wireless Internet Laboratory, WinLab) | **GPA: 3.99 / 4.30**

National Taipei University of Technology (NTUT)

Sep. 2019 - Jun. 2023

B.S. in Interaction Design (Media Design Division)

- Award:** Outstanding Overseas Chinese Graduate of the Year, Presidential Award (Received 3 times)
- Graduation Project:** A Location-Based AR System for Urban Exploration and Infrastructure Maintenance
- Research Focus:** IoT, Embedded Systems, Full-Stack Development, AR/VR, Human-Computer Interaction (HCI)
- Advisor:** Prof. Lydia Hsiao-Mei Lin | **GPA: 3.99 / 4.00**

Projects

A CI/CD Framework for Zero Downtime Deployment in Wi-Fi Mesh Networks

Sep. 2024 - Jan. 2026

Master's Thesis / Industry-Academia Collaboration with Wistron NeWeb Corp. (WNC)

- Integrated **GitHub Actions** with **USP APIs** to automate cloud-to-edge container delivery to Root AP via **TR-369 (USP)** standards.
- Developed a **C-based Controller** bridging USP Agent (via UDS) to Extender APs (via TCP) for synchronized mesh updates.
- Engineered **Linux iptables** steering to achieve zero packet loss and **zero downtime** during Blue-Green/Canary deployments.

Kubernetes-based Multi-Cluster Hybrid Cloud Management System

Apr. 2024 - Sep. 2024

Industry-Academia Collaboration with Iscom Online International Info. Inc.

- Orchestrated public cloud and on-premises clusters using **Karmada** and **GitOps** (ArgoCD/FluxCD) for automated service propagation.
- Implemented **Cilium Cluster Mesh** and **HAProxy** to enable global traffic steering, cross-cluster failover, and firewall security policies.
- Engineered a unified observability stack integrating **Thanos**, **Prometheus**, and **Grafana** for centralized health monitoring.

Work Experience

SDN/NFV Teaching Assistant - Department of Computer Science, NYCU

Jul. 2023 - Jan. 2024

- Refined labs for **ONOS** SDN modules to implement **L2/L3 protocols**, including Learning Bridge, Proxy ARP, and Unicast DHCP.
- Led NFV labs on **Docker**-based routing (**BGP**) and guided final projects on **VLAN-based Segment Routing**.

Software Engineer Intern - IT Department, Makalot Industrial Co., Ltd.

Jul. 2022 - Jun. 2023

- Developed a **Full-Stack** dashboard using **Vue.js** and **ASP.NET Web API** to streamline RBAC and system configurations.
- Engineered a Dockerized **OAuth 2.0** Authentication Service with **JWT** and **Dapper ORM** to secure cross-platform ERP API access.
- Implemented RPA workflows via **Power Automate** to trigger Microsoft Teams and Outlook alerts, reducing manual effort.

Unity Software Engineer (Research Assistant) - Department of Multimedia & Game Development, MUST

Jan. 2022 - Jun. 2022

- Developed an NSTC project using **Unity** and **C#**, engineering a cross-platform system featuring 5 distinct motion-sensing games.
- Integrated **Google Firebase** for real-time data synchronization to support bilingual (English/Chinese) content and learning analysis.

IT Support (Work-Study) - Computer and Network Center, NTUT

Jun. 2021 - Jun. 2023

- Provided technical support to faculty members, handling PC assembly, **OS installation**, and troubleshooting campus network issues.
- Participated in the **frontend development** of the campus Authorized Software Portal, improving the **UI/UX** to streamline software downloads.

Achievements

Jury Prize (Champion) , National Makerthon: Good Health and Well-Being	Issued by Ministry of Education	2022
Potential Award , Vision Get Wild XR Social Welfare	Issued by Meta XR Hub Taiwan	2023
Shortlisted , Intel DevCup x OpenVINO Toolkit Competition	Issued by Intel Corporation	2021
Shortlisted , 5G Mobileheroes	Issued by Industrial Development Administration	2021

Skills

Cloud & DevOps	Kubernetes (K8s), Docker, CI/CD (GitHub Actions), ArgoCD, Karmada, Prometheus, Grafana, Azure
Networking	SDN/NFV, O-RAN, ONOS, OVS, BGP, Linux Networking (iptables/Netfilter), Wi-Fi Mesh, TR-369 (USP)
Programming	Python, C/C++, C# (Unity), Java, SQL, JavaScript (Vue.js), HTML/CSS, ASP.NET Core
Development	Full-Stack Dev, RESTful API, IoT System Integration, Embedded Systems (Raspberry Pi), AR/VR