

CHUN-YI TSAI

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EDUCATION

Columbia University

Sep. 2025 – Dec. 2026

Master of Science in Computer Science

New York, NY

- Coursework: Cloud Computing (AWS/GCP), Deep Learning for Computer Vision, Reverse Engineering, Database Systems

National Tsing Hua University

Sep. 2020 – Jun. 2024

Bachelor of Engineering in Computer Science and Mechanical Engineering

Hsinchu, Taiwan

- Coursework: Algorithms, Machine Learning, Distributed Systems, Operating Systems, Computer Architecture

WORK EXPERIENCE

LINE

Jul. 2024 – Aug. 2025

Backend Software Engineer Intern

Taipei, Taiwan

- Engineered production **Node.js** microservices for LINE GO ride-sharing platform serving **5+ million** daily users.
- Reduced fare calculation latency by **15%** through **Redis** caching, improving driver matching system for **20K+** rides per day.
- Stabilized testing environment by adopting a **GitOps** workflow with **AWS EKS** and **Argo CD**, reducing deployment failures.
- Accelerated deployment cycle by **20%** through **GitHub Actions CI/CD** and **Terraform**, enabling multiple weekly releases.
- Engineered chatbot service using event-driven architecture with **AWS SQS** and **Google Maps API** for reliable notifications.
- Automated menu management system with **MySQL** triggers and cron jobs, eliminating **60+ hours** of manual work annually.

Chunghwa Telecom

Jul. 2023 – Aug. 2023

DevOps Engineer Intern

Taipei, Taiwan

- Implemented observability stack with **Prometheus**, **Loki**, **Tempo**, and **Grafana** for internal **Flask** application monitoring.
- Created **Grafana** dashboards for **10+** metrics visualization, enabling real-time monitoring across distributed systems.
- Built alerting pipeline with **AWS SNS** and **SQS** to track API latency and CPU metrics, enabling faster incident response.
- Created **CI/CD** pipelines with **GitHub Actions** and **Pytest**, accelerating testing cycles by **35%** with reliable deployments.

High-Speed Lab, NTHU

Jan. 2022 – Jan. 2024

Software Researcher

Hsinchu, Taiwan

- Built an autonomous drone tracking system with real-time gesture recognition and human following capabilities.
- Trained gesture recognition model using **TensorFlow** and **Google MediaPipe**, achieving **85%** accuracy on the test set.
- Improved human tracking precision on drone systems by enhancing **PID control algorithm** for smoother object following.
- Created a real-time **OpenCV** visualization interface for remote camera access and live recognition output monitoring.

PROJECTS

Full-Stack - Job Application Tracking System | *Go, Gin, Next.js, PostgreSQL, AWS Lambda* | [Demo](#)

- Developed a job-tracking platform used by **10+** active users, featuring customizable workflows and real-time progress tracking.
- Developed REST API with **30+** endpoints using **Go** and **Gin**, deployed on **AWS Lambda** with **API Gateway**.
- Deployed to production with structured logging, **OpenAPI** documentation, and monitoring systems for reliability.
- Automated CI/CD pipeline with **GitHub Actions** and **Terraform**, ensuring consistent deployments across environments.

ML/AI - Campus Landmark Recognition System | *PyTorch, ResNet, EfficientNet, Computer Vision*

- Curated custom dataset of **1,000+ images** across **15+** landmark classes; trained custom CNN model achieving **95%+** accuracy.
- Implemented advanced data augmentation and conducted ablation studies comparing ResNet-50 vs EfficientNet.

System - Cache Performance Simulator | *C++, Memory Management, Cache Algorithms*

- Built cache simulator in **C++** with set-associative mapping and multiple replacement policies (LRU, FIFO, Optimal).
- Reduced cache miss rate by **30%** through optimized eviction and prefetching, ranking in the **top 5%** of benchmark results.

TECHNICAL SKILLS

Languages: Python, C/C++, JavaScript, Go, TypeScript, Java, SQL, MATLAB

Frameworks & Libraries: Node.js, React, Next.js, Gin, Flask, PyTorch, TensorFlow

Databases & Cloud: MySQL, PostgreSQL, MongoDB, Redis, AWS (EC2, S3), Docker, Terraform, Kubernetes

Tools & Technologies: Git, Linux, Jira, OpenCV, CUDA, REST APIs