

Ching-Yu Hsu

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Education

National Taiwan University (NTU)

B.S. IN ELECTRICAL ENGINEERING (EE)

Sept. 2021 - Present

Taipei, Taiwan

- Overall GPA 4.25/4.3, Overall Rank 5/220, 3x Academic Excellence Award, 1x Presidential Award
- Relevant Coursework: Machine Learning*, Computer Vision*, Deep Learning for Computer Vision*, Reinforcement Learning*, Security and Privacy of Machine Learning*, Software Engineering*, Database Management System*, Computer Architecture, Operating System, Data Structure, Algorithms, Web Programming, Linear Algebra, Discrete Math,

* denotes graduate-level course

Work Experience

CyberLink Corp. [\[Company Website\]](#) [\[Details\]](#)

July 2025 - Present

CLOUD COMPUTING RESEARCH AND DEVELOPMENT INTERN

Taipei, Taiwan

- Hosted a **n8n** server to automate the health-check on **300+** servers within **20 seconds**, achieving **90%** speed improvement
- Developed an AI-driven full-stack product integrating over **20** AI features powered by multiple AI technologies.
- Experienced full Software Release Life Cycle from pre-alpha, alpha, release candidate (RC), to golden master (GM)

KKCompany Technologies [\[Company Website\]](#) [\[Details\]](#)

July 2024 - June 2025

DATA ENGINEER INTERN

Taipei, Taiwan

- Built a natural language query system for BigQuery using **RAG** and multi-LLM conversational workflows, achieving a **5%** improvement in accuracy against other open source text-to-SQL projects
- Built an automated data orchestration system using **Apache Airflow** and **dbt**, reducing manual effort by **95%**
- Managed cloud resources using **Terraform** for scalable and **100%** repeatable deployments

Research Experience

Vision and Learning Lab, NTU

July 2024 - Present

ADVISOR: PROF. YU-CHIANG FRANK WANG

Taipei, Taiwan

- Topic: Efficient Vision Language Models [\[Details\]](#)

- Researching efficient Vision Language Models (VLMs) for Visual Question Answering (VQA) tasks on images and videos
- Integrated motion vectors into **LLaVA**, reducing over **90%** of tokens during training
- Studied over 30 recent papers on token merging and token pruning and implemented a brand-new token pruning method.

Speech Processing and Machine Learning Lab, NTU

July 2023 - Present

ADVISOR: PROF. HUNG-YI LEE

Taipei, Taiwan

- Topic: Automated Co-Evolutionary Framework for Guarding Prompt Injections [\[Details\]](#)

- Devised a GAN-like framework to automatically generate prompts to defend against malicious prompt injection attacks
- Achieved a **20% enhancement** in True Positive Rate (TPR) with only **2% decrease** in True Negative Rate (TNR)
- **co-first author** paper under review

Publications

[1] Ting-Chun Liu*, **Ching-Yu Hsu***, Kuan-Yi Lee, Chi-An Fu, Hung-yi Lee: "AEGIS: Automated Co-Evolutionary Framework for Guarding Prompt Injections Schema" (conference under review) [\[Paper\]](#)

* denotes co-first authors

Teaching Experience

AIA 1390: Intro to GenAI & ML [\[Course Link\]](#)

Fall 2025

TEACHING ASSISTANT (INSTRUCTOR: PROF. HUNG-YI LEE)

Taipei, Taiwan

- Deployed an AI grading system "Judge-boi" for **1500+** students, and performed load testing to ensure reliability
- Hosted an AI grading system "Judge-boi" for **1500+** students, and performed load testing to ensure reliability

CommE 5052: Deep Learning for Computer Vision [\[Course Link\]](#)

Fall 2025

TEACHING ASSISTANT (INSTRUCTOR: PROF. YU-CHIANG FRANK WANG)

Taipei, Taiwan

- Developed an image generation assignment using **Diffusion** and **ControlNet**
- Assisted over 130 students in learning deep learning techniques in computer vision after course.

NTUEE Programming Course, NTU [\[Details\]](#)

Summer 2025

INSTRUCTOR

Taipei, Taiwan

- Developed a **Python AI Agent** integrating Google Calendar and Gmail via **Gemini** and GCP with natural language commands
- Introduced no-code AI Agent in **Zapier** to integrate Google Sheets, Gemini, and Google Search for automated travel itinerary generation
- Taught over **320** learners, ranging from high school students to working professionals

EE 5184: Machine Learning [\[Course Link\]](#)

TEACHING ASSISTANT (INSTRUCTOR: PROF. HUNG-YI LEE)

Spring 2025

Taipei, Taiwan

- Developed a Transformer/LLM assignment from scratch using **Gemma** as the base model
- Automated the grading of assignments by Gradescope and detected plagiarism by Moss

NTUEE camp Teaching Group, NTU [\[Details\]](#)

Summer 2022

INSTRUCTOR

Taipei, Taiwan

- Delivered lessons on machine learning fundamentals to more than **100** high school students
- Guided students in implementing a **speech recognition** system via Convolutional Neural Network (CNN)

Selected Projects

LLM-Enhanced Database Management System [\[Details\]](#)

Spring 2025

DATABASE MANAGEMENT SYSTEM COURSE

- Developed a database management system enhanced with LLM capabilities.
- Utilized OpenAI's **Whisper** to transcribe audio files and applies **LangChain** to extract information from unstructured data to the database

Water Intake tracking Coaster [\[Details\]](#)

Fall 2024

EMBEDDED SYSTEMS COURSE

- Developed a smart coaster on an **STM32** microcontroller to track daily water consumption using a gyroscope and Bluetooth Low Energy (BLE)
- Designed a Flutter application to connect with the device via BLE, store data in SQLite, and send hydration reminders
- Achieved a low error rate of **5.8%** in estimating water intake, compared to actual consumption measured by weight difference

Landsat Surface Reflectance Tracking System [\[Details\]](#)

Fall 2024

2024 NASA INTERNATIONAL SPACE APPS CHALLENGE - HONORABLE MENTION

- Built a Landsat Surface Reflectance data tracking system with real-time statistics using the Google Earth Engine API
- Developed a Next.js frontend and a **FastAPI** backend, deployed on **Google Cloud Run** for scalable access

CaRPG: in-car RPG game on smart windows [\[Details\]](#)

Spring 2024

2024 MAKENTU - 1ST PLACE OF AUO ENTERPRISE AWARD

- Led a 5-member team to build an RPG game system dynamically generated by **GPT4** and a shooting game to entertain users during travel
- Developed a Flutter mobile application with a FastAPI backend and MongoDB database to display the RPG game
- Designed a monster-shooting game with Pygame and implemented **PyTorch**-based gesture detection with a **90% accuracy**

Honors and Awards

- Honorable Mention**, 2024 NASA International Space Apps Challenge
- 1st Place of AUO enterprise AWARD**, 2024 MakeNTU
- Finalist**, 1st Taipei City Dashboard Hackathon
- TASA Special Award**, 2023 NASA International Space Apps Challenge
- 2nd Place of MediaTek enterprise Award**, 2023 MakeNTU
- 3x Academic Excellence Award**, 2021 Fall, 2022 Spring, 2024 Fall
- Presidential Award**, freshman year

Technical Skills

Languages / Frameworks C, C++, Go, Python, FastAPI, Flask, Gin, JavaScript, TypeScript, React.js, Next.js, Flutter, Assembly, MATLAB

Machine Learning / AI PyTorch, TensorFlow, JAX, scikit-learn, XGBoost, HuggingFace, RAG, n8n, Zapier

Data / Cloud Tools SQL, MySQL, SQLite, PostgreSQL, BigQuery, MongoDB, Airflow, dbt, GCP, AWS, Terraform

Extracurricular Activity

EEvolution

Sept. 2023 - Present

MINISTER

Taipei, Taiwan

- Led a team of over 30 members to organize corporate workshops (BenQ, Line), host 2 company visits, and coordinate Corporate Sharing Sessions (Amazon, Google, NXP, WorldQuant, Dell), connecting organizations with students and fostering hiring opportunities

NTUEE Table Tennis Club, NTU

July 2023 - June 2024

GENERAL AFFAIRS

Taipei, Taiwan

- Managed administrative tasks, account book, and equipment for club activities and competitions