Ching-Yu Hsu

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Education

National Taiwan University (NTU) **Sept. 2021 - Present**
B.S. in Electrical Engineering (EE) *Taipei, Taiwan*
- Overall GPA 4.25/4.3, Overall Rank 5/220, 3x Academic Excellence Award, 1x Presidential Award

Work Experience

CyberLink Corp. **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

NTU Machine Learning Courses **Jan. 2025 - Present**
Teaching Assistant * 3 *Taipei, Taiwan*
- Developed a Transformer/LLM assignment using **Gemma**, an image generation assignment using **ControlNet**
- Hosted an AI grading system for **1500+** students and performed load testing

NTUEE Programming Course **July 2025 - Aug. 2025**
Instructor *Taipei, Taiwan*
- Designed and taught over **320** learners about courses on LLM fundamentals, multimodal AI applications, and AI Agents
- Developed a **Python AI Agent** integrating Google Calendar and Gmail via **Gemini** and GCP with natural language commands

KKCompany Technologies **July 2024 - June 2025**
Data Engineer Intern *Taipei, Taiwan*
- Built a natural language query system using **RAG** and **LLMs**, achieving a **5%** improvement in accuracy against other open source projects
- Built an automated data orchestration system using **Apache Airflow** and **dbt**, reducing manual effort by **95%**

Research Experience

Vision and Learning Lab, NTU **July 2024 - Present**
Advisor: Prof. Yu-Chiang Frank Wang *Taipei,Taiwan*
- **Topic: Efficient Multimodal Large Language Model**
- Researching efficient Multimodal Large Language Models (MLLMs) for VQA on images and videos
- Implemented token merging/pruning, motion vectors, reducing over **90%** of tokens during training

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**
- 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)
- **1st author paper** under review

Selected Projects

Landsat Surface Reflectance Tracking System **Fall 2024**
- 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 **Spring 2024**
- Developed a Flutter mobile application with a FastAPI backend and MongoDB database to display an RPG game
- Designed a monster-shooting game with Pygame and implemented PyTorch-based gesture detection, achieving **90% accuracy**

Honors and Awards

- **Honorable Mention**, 2024 NASA International Space Apps Challenge
- **1st Place of AUO enterprise AWARD**, 2024 MakeNTU
- **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