

Hao-yung Weng

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EDUCATION

Carnegie Mellon University, School of Computer Science

Master of Science in Machine Learning

Sep 2024 – Dec 2025 (Expected)

Pittsburgh, PA, United States

- **GPA:** 4.0/4.0, **Relevant Coursework:** Introduction to ML (PhD-level), Advanced Deep Learning, Generative AI

National Taiwan University

Bachelor of Science in Computer Science, Valedictorian, Summa Cum Laude (top 1%)

Sep 2019 – Jun 2023

Taipei, Taiwan

- **GPA:** 4.28/4.3, **Awards:** Outstanding Youth of Taiwan, Presidential Award, Dean's List (4x), Best TA Award

SKILLS

Programming: Python, C, C++

Libraries & Tools: PyTorch, NumPy, Scikit-learn, Pandas, Hugging Face, Docker

Domains: LLM, Natural Language Processing, Speech Processing, Federated Learning, Parameter-Efficient Fine-Tuning

INDUSTRY EXPERIENCE

HeyGen

AI Research Intern

May 2025 – Present

Los Angeles, CA, United States

- Launched flagship product “Video Agent” as a founding team member, enabling multi-scene video generation from prompts and optional media by architecting an AI agentic system that fuses LLMs with multimodal generative models.
- Reduced video representation size by over 10x by designing a custom XML-like language and parser that converts arbitrary videos into this format, enabling the system to infer and reuse visual styles as references for new generations.

WorldQuant

Quantitative Research Intern

Jan 2023 – Feb 2023

Taipei, Taiwan

- Developed “Alphas” models for equity market prediction, achieving a Sharpe ratio over 3.7 and turnover below 10% by leveraging diverse datasets (price, volume, options, analyst ratings) and decade-long fine-tuning on U.S. stock market data.

Google

Software Engineering Intern

Jun 2022 – Oct 2022

Taipei, Taiwan

- Reduced the time spent on addressing Joint Design Manufacturing (JDM)-related issues by 25% through designing and implementing an automated Python tool to locate bugs during collaboration.

ASUS Intelligent Cloud Services (AICS)

Software Engineering Intern

Mar 2022 – Jun 2022

Taipei, Taiwan

- Built a digital medical AI platform, adopted by two of Taiwan's top 10 hospitals to transition from paper-based systems.

RESEARCH EXPERIENCE

Auton Lab

Research Assistant, Advisor: Professor Artur Dubrawski

Feb 2025 – Present

Carnegie Mellon University

- Proposed a novel federated learning framework for foundation models that enhances fine-tuning efficiency and knowledge sharing across heterogeneous clients by leveraging knowledge distillation and adaptive personalization techniques.

Speech Processing & Machine Learning Laboratory

Research Assistant, Advisor: Professor Hung-yi Lee

Feb 2022 – Dec 2023

National Taiwan University

- Enhanced performance and efficiency by utilizing Neural Architecture Search (NAS) algorithms to optimize adapter selection, structure, and placement within self-supervised speech representation models.

Machine Intelligence & Understanding Laboratory

Research Assistant, Advisor: Professor Yun-Nung Chen

Sep 2021 – Jun 2023

National Taiwan University

- Devised a Transfer Learning framework to assess model suitability, achieving over 85% accuracy in selecting and sequencing intermediate tasks using the “Transferability” metric.

PUBLICATION

PEFT for Speech: Unveiling Optimal Placement, Merging Strategies, and Ensemble Techniques

Tzu-Han Lin[†], How-Shing Wang[†], **Hao-yung Weng[†]**, Kuang-Chen Peng[‡], Zih-Ching Chen^{*}, Hung-yi Lee^{*} ICASSP SASB 2024

EXTRACURRICULAR ACTIVITIES

National Taiwan University, CS Student Council

Director of Academic Section

Sep 2021 – Jun 2022

National Taiwan University

- Enhanced diversity and equity in Taiwan's computer science education by leading a six-day camp with 50+ college volunteers, reaching 120+ high school students, delivering Git and Linux lectures, and providing free passes for underrepresented groups.