

Hsuan-Hao "Howard" Lin

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EDUCATION

Carnegie Mellon University

Master of Science in Intelligent Information Systems

Current Courses: Advanced Natural Language Processing, Computer Vision, Introduction to Machine Learning

Pittsburgh, PA

Expected Dec 2026

National Taiwan University

Bachelor of Science in Electrical Engineering

GPA: 4.17/4.3

Dean's List Award: Fall 2020, Fall 2022, Fall 2023

Taipei, Taiwan

Graduated Jun 2024

SKILLS

Programming Languages: Python, C/C++, TypeScript, JavaScript, SQL

Frameworks & Libraries: PyTorch, TensorFlow, LangChain, Scikit-learn, Next.js, tRPC, Sequelize

Tools: Git, Hugging Face, Docker

PROFESSIONAL EXPERIENCE

U-MEDIA Communications Inc.

Part-time Software Engineer

Hsinchu, Taiwan

Sep 2022 – Jul 2025

- Built an in-house payroll system in a 4-member team, automating salary processing for 200+ employees and reducing manual workload, using TypeScript, tRPC, Sequelize and Oracle DB
 - Designed an intuitive dashboard for payroll management and reporting, optimizing user experience based on feedback received from senior management
 - Fulfilled data synchronization between HR and payroll systems, eliminating manual reconciliation and ensuring real-time data consistency
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PROJECTS

Dynamic-SUPERB: Instruction-Tuning Benchmark for Speech (ICLR 2025)

National Taiwan University – Research Project

Taipei, Taiwan

Apr 2024 – Jul 2024

- Proposed and applied an event-frequency-weighted sampling strategy to construct a 360-clip DESED subset, maximizing rare event and retained information under limited computational resources
- Implemented F1-score metric, enabling performance comparison for sound event detection tasks
- Integrated DESED task into 180+ tasks benchmark, expanding its evaluation scope for audio event analysis

Audio Captioning Using Text-Only Data

National Taiwan University – Research Project

Taipei, Taiwan

Jan 2024 – May 2024

- Devised a text-only training approach leveraging the CLAP model to align audio and text in a shared representation space, reducing dependence on paired datasets
- Evaluated model performance, achieving a BLEU-1 score of 39 vs. 43.7 with paired data, validating the feasibility of single-modality learning for cross-modal tasks

AV-SUPERB: Audio-Visual Multi-Task Benchmark (ICASSP 2024)

National Taiwan University – Research Project

Taipei, Taiwan

Jan 2023 – Sep 2023

- Developed Audio Event Classification pipeline in 5 tasks benchmark, including preprocessing dataset with over 2.1 million video and model evaluation, contributed key results to benchmark-wide performance report
 - Engineered mAP metric with scikit-learn to ensure consistent performance metrics across multi-label classification tasks
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TEACHING EXPERIENCE

AI Debate Workshop with RAG & LangChain

Wu Ta-You Science Camp 2024

Hsinchu, Taiwan

Jul 2024 – Aug 2024

- Architected a multi-agent AI debate system using LangChain and RAG, demonstrating practical LLM workflows
- Hosted an AI debate workshop for 100+ participants, mentoring teams through step-by-step system deployment and tailored goals
- Organized an interactive AI debate competition, fostering collaboration and enhancing learning outcomes