

Hsiu-Hsuan Wang

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I authored six machine learning publications to solve speech and NLP-related problems.
In September 2024, I will be joining Prof. Hung-Yi Lee's lab at NTU as a MS student.

Education

B.S. (Computer Science) at National Taiwan University

2020.09 - 2024.06(exp.)

Publications

[1] Hsiu-Hsuan Wang*, W Lin*, H Lin. **CLCIFAR: CIFAR-derived benchmark datasets with human annotated complementary labels.** *Rejected by NeurIPS 2023* ([link](#))

[2] X Chang, B Yan, K Choi, J Jung, Y Lu, S Maiti, R Sharma, J Shi, J Tian, S Watanabe, Y Fujita, T Maekaku, P Guo, Y Cheng, P Denisov, K Saijo, Hsiu-Hsuan Wang. **Exploring speech recognition, translation, and understanding with discrete speech units: A comparative study.** *Accepted by Icassp 2024* ([link](#))

[3] J Shi, W Chen, D Berrebbi, Hsiu-Hsuan Wang, W Huang, E Hu, H Chuang, X Chang, Y Tang, S Li, A Mohamed, H Lee, S Watanabe. **Findings of the 2023 ML-Superb Challenge: Pre-Training And Evaluation Over More Languages And Beyond** *Accept by ASRU 2023* ([link](#))

[4] H Wu, H Chung, Y Lin, Y Wu, X Chen, Y Pai, Hsiu-Hsuan Wang, K Chang, A Liu, H Lee. **Codec-SUPERB: An In-Depth Analysis of Sound Codec Models** *Submitted to ACL 2024* ([link](#))

[5] I Kang, Hsiu-Hsuan Wang, C Kuan, H Chung, T Hsu, K Chang, P Chen, C Wang, A Lee, H Gong, H Lee. **Voxcentum: Spoken Language Identification for 100+ Languages Expanded to 100+ Hours** *Rejected by ASRU 2023*

[6] I fu, Hsiu-Hsuan Wang, H Lee. **Investigating the Effects of Large-Scale Pseudo-Stereo Data and Different Speech Foundation Model on Dialogue Generative Spoken Language Model** *Submitted to Interspeech 2024*

Experiences

Student Researcher

2022.09 - present

Prof. Hung-Yi Lee's lab, National Taiwan University

- Extend the SUPERB work for audio/speech codec benchmark. Quantitatively evaluate their reconstruction ability, intelligibility and downstream applications.
- Currently researching the adaptation of listening capabilities from a pretrained speech-LLM to other task-oriented LLMs through embedding mapping.

Student Researcher

2022.09 - 2024.01

Prof. Hsuan-Tien Lin's lab, National Taiwan University

- Complete my first independent research cycle, including a first-author paper submitted to NeurIPS 2023.
- Conduct extensive benchmarks on GPU clusters to investigate a fundamental hypothesis in complementary label learning scenarios.

AI Engineer

2023.08 - present

Mygram AI Inc.

- Implement high-quality Taiwanese text-to-speech and voice-cloning systems.
- Implemented a Retrieval-Augmented Generation(RAG) system using large language models(LLMs) to enrich our knowledge management products.

Crowdsourcing Summer Intern

2022.06 - 2022.09

Prof. Hsuan-Tien Lin's lab

- Contribute two datasets – CLCIFAR10 and CLCIFAR20, with complementary labels annotated by 1K workers from Amazon Mechanical Turk, a crowdsourcing platform.

Projects

Speech Crawling with Meta

Stage 1: 2022.10 - 2023.08

Stage 2: 2024.02 - present

- Design a parallel pipeline to identify language id of the 200k hours of audio data (40TB) scraped from YouTube for speech-related deep learning research.
- Collaborate remotely with the Meta research team from the United States and senior students from the department of electrical engineering, NTU.
- It is an honor to have my name listed in the acknowledgements section of Meta's publication: "Seamless: Multilingual Expressive and Streaming Speech Translation".

ESPnet Hackathon with CMU

2023.03 - present

- Investigate different discrete speech units on various downstream tasks, including ASR, ST, and SU. Collaborating with Prof. Shinji's research group from CMU.
- Our paper was accepted in ICASSP 2024. ([blog post](#))

Automatic Essay Scoring System

2023.03 - present

- Engaged in cross-domain collaboration with Prof. Zhao Ming Gao from the Department of Foreign Languages and Literatures.
- Fine-tune large language models to learn from gpt-4's rationale for automatic essay/translation scoring.

libcll: The First Toolkit for Complementary Label Learning

2023.10 - 2024.01

- Implement 16 algorithms, 11 datasets (2 real-world ones) with easy install for complementary label learning. The first reproducible benchmark toolkit.

Awards

2023 Honorable Mention Undergraduate Project Award

2022 Excellent Teaching Assistant Award for course Data Structure and Algorithm, NTU

2018 Worldwide Finalist of Google Code-In