

Hung-Chieh (Oscar) Fang

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Research Interest

I am broadly interested in robust machine learning and robotics. Specifically, I aim to explore how to enable robots to learn and adapt in dynamic environments.

Education

National Taiwan University (NTU)

Sept 2020 – Present

B.S. in Computer Science and Information Engineering (GPA: 4.01/4.3)

Taipei, Taiwan

- **Academic Honors:** Dean's List Award * 1 (Top 5% of the department)
- **Research Honors:** Principal's Bachelor's Thesis Award, Undergraduate Research Award Honorable Mention
- **Selected Courses:** Machine Learning*, Reinforcement Learning*, Applied Deep Learning*, Advanced Deep Learning*, Information Theory and Coding Technique*, Game Theory*, Deep Learning for Human Language Processing*
- **Teaching Assistant:** Machine Learning*, Introduction to Generative Artificial Intelligence

(* denotes graduate-level.)

Selected Publications

(* indicates equal contribution; Google scholar: <https://scholar.google.com/citations?user=MpGIrR0AAAAJ>)

- [3] **Hung-Chieh Fang**, Po-Yi Lu, and Hsuan-Tien Lin. "Reducing Source-Private Bias in Extreme Universal Domain Adaptation". In *submission of ICLR*. [PDF]. 2024.
- [2] **Hung-Chieh Fang***, Nai-Xuan Ye*, Yi-Jen Shih, Puyuan Peng, Hsuan-Fu Wang, Layne Berry, Hung-yi Lee, and David Harwath. "Integrating Self-supervised Speech Model with Pseudo Word-level Targets from Visually-grounded Speech Model". In *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) Workshop: Self-supervision in Audio, Speech and Beyond*. [PDF]. 2024.
- [1] **Hung-Chieh Fang***, Kuo-Han Hung*, Chao-Wei Huang, and Yun-Nung Chen. "Open-Domain Conversational Question Answering with Historical Answers". In *The 2nd Asian Chapter of the Association for Computational Linguistics (AACL)*. [PDF]. 2022.

Research Experience

Summer Research Program, The Chinese University of Hong Kong

July 2024 – Present

Visiting Student, Advisor: Prof. Irwin King, Dr. Yifei Zhang

New Territories, Hong Kong

- Researching on *federated unsupervised learning* (ongoing).

Computational Learning Lab, NTU

Feb 2023 – Present

Undergraduate Researcher, Advisor: Prof. Hsuan-Tien Lin

Taipei, Taiwan

- Researched on *universal domain adaptation*. [3]
 - Identified an unsolved sub-task, analyzing the limitations of classical partial domain alignment paradigms.
 - Proposed using self-supervised loss to preserve intrinsic structure and improve robustness across scenarios.
 - Awarded the best thesis in EECS college in 2024 NTU Bachelor's Thesis Award.

Machine Intelligence & Understanding Lab, NTU

Mar 2022 - Sept 2024

Undergraduate Researcher, Advisor: Prof. Yun-Nung (Vivian) Chen

Taipei, Taiwan

- Researched on *open-domain conversational question answering*. [1]
 - Proposed combining the signal from historical answers with the noise-reduction ability of knowledge distillation to improve information retrieval and question answering.
 - Awarded honorable mention in the 2022 NTU CSIE Undergraduate Research Exhibition.

Speech Processing & Machine Learning Lab, NTU
Undergraduate Researcher, Advisor: Prof. Hung-yi Lee

Sept 2022 – Sept 2023
Taipei, Taiwan

- Researched on *visually-grounded self-supervised learning on speech processing*. [2]
 - Proposed using vision as a surrogate for paired transcripts to enrich the semantic information in self-supervised speech models.
 - Collaborated with Speech, Audio, and Language Technologies (SALT) Lab from UT Austin.

Teaching Experience

EE5100: Introduction to Generative Artificial Intelligence, NTU

Jan 2024 – June 2024

Teaching Assistant

Taipei, Taiwan

- Designed homework on the *interpretability and explainability of large language models*. [Link]

CSIE5043: Machine Learning, NTU

Feb 2023 – June 2023

Teaching Assistant

Taipei, Taiwan

- Co-designed ML algorithm homework about *theory of generalization* and a final project about *ordinal ranking* problems for 250+ students.
- Held weekly TA hours to guide students on their assignments.

Work Experience

MediaTek Research

Jan 2023 – Mar 2023

Machine Learning Intern

Taipei, Taiwan

- Worked on *personally identifiable information removal* for large language models.
- Studied the *best-arm identification problem in linear bandits*.

Cinnamon AI

July 2022 – Aug 2022

Deep Learning Intern

Taipei, Taiwan

- Developed a pipeline for meeting summarization with state-of-the-art deep learning models.

Selected Projects

Zero-shot Text Behavior Retrieval [Report]

- Proposed retrieving task-specific data for *imitation learning* from a large, unlabeled dataset using *text-based inputs* to achieve zero-shot generalization.

Honors And Awards

Dean's List Award, NTU CSIE

2024

Top 5% of the department.

Principal's Award, NTU Bachelor's Thesis Award

2024

Top 2 theses among all graduates & the best thesis in the EECS College.

Honorable Mention, NTU CSIE Undergraduate Research Award

2022

Top 6 research projects in the CSIE Department.

Special Award, LINE FRESH Hackathon

2021

Top 5 out of 300+ teams.