# Hung-Chieh (Oscar) Fang

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## Education

**National Taiwan University (NTU)** *Sept 2020 – Present*
B.S. in Computer Science and Information Engineering *Taipei, Taiwan*
Thesis: "*Uprooting Implicit Misalignment in Universal Domain Adaptation by Target-Integrated Representation Learning*".
Advisor: Prof. Hsuan-Tien Lin

## 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. "Tackling Dimensional Collapse toward Comprehensive Universal Domain Adaptation". In *submission of ICML*. [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

**Robot Learning Lab (RLLab), NTU** *Nov 2024 – Present*
Undergraduate Researcher, Advisor: Prof. Shao-Hua Sun *Taipei, Taiwan*

- Researching on *Robot Learning from Videos* (ongoing).

**Machine Intelligence & Social Computing (MISC) Lab, The Chinese University of Hong Kong** *July 2024 – Present*
Visiting Student, Advisor: Prof. Irwin King, Dr. Yifei Zhang, Prof. Hsuan-Tien Lin *New Territories, Hong Kong*

- Researching on *federated unsupervised learning* (ongoing).
  - Proposed to resolve representation uniformity with subspace regularization.

**Computational Learning Lab (CLLab), NTU** *Feb 2023 – Present*
Undergraduate Researcher, Advisor: Prof. Hsuan-Tien Lin *Taipei, Taiwan*

- Researched on *universal domain adaptation*. [3]
  - Uncovered the dimensional collapse problem in universal domain adaptation
  - Proposed using self-supervised loss to tackle dimensional collapse and improve robustness across scenarios.
  - Awarded the best thesis in EECS college in 2024 NTU Bachelor's Thesis Award.

**Machine Intelligence & Understanding Lab (MiuLab), 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.

## 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*

- Designed *personally identifiable information removal* workflows 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] *Nov 2023 – Jan 2024*
Course Project of *Reinforcement Learning*

- Proposed a text-based approach to retrieve task-relevant data from an offline dataset *without* any expert demonstration for *imitation learning*.
- Enhanced retrieval accuracy and success rate across various simulated environments.

**Visually-Grounded Self-Supervised Learning for Speech Processing** [2] *Sept 2022 – Sept 2023*
Course Project of *Deep Learning for Human Language Processing* *Taipei, Taiwan*

- 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.

## 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.