

Chin-Lun (Allen) Fu

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EDUCATION

University of California, Los Angeles (UCLA)

M.S. IN COMPUTER SCIENCE

Los Angeles, CA

Sept. 2023 - Jun. 2025

National Taiwan University (NTU)

B.S. IN ELECTRICAL ENGINEERING

Taipei, Taiwan

Sept. 2017 - Jun. 2022

- Overall GPA: **3.81/4.30**, Last 2-year GPA: **4.15/4.30**
- Coursework: Deep Learning for Computer Vision, Applied Deep Learning, Numerical Linear Algebra, Machine Learning, Algorithms, Probability and Statistics

WORK EXPERIENCE

Microsoft

Taipei, Taiwan

RESEARCH INTERN, VISUAL DOCUMENT INTELLIGENCE TEAM

Apr. 2022 - Nov. 2022

- Unified transformer-based models to factored transformers with customized masking schedule and factor loss, and enhanced over **5%** accuracy rate in cross-lingual transfer learning by adding external knowledge in Wikipedia.
- Improved **3%** accuracy rate on the GLUE benchmark by jointly masking related factors during training.
- Designed a matching loss function for numerical factors, and achieved an **1%** improvement in F1-score.
- Applied a masked language model loss to receipt field extraction, resulting in an improvement of over **10%** in F1-score.

High Tech Computer Corporation (HTC)

Taipei, Taiwan

RESEARCH INTERN, ALGORITHMS AND MACHINE LEARNING TEAM

Jul. 2020 - Nov. 2020

- Utilized BERT and a linear classifier to address a binary classification task, yielding a **55%** F1-score.
- Increased **7%** accuracy rate with **27%** less time by applying orthogonal initialization in Deep Linear Network.

RESEARCH EXPERIENCE

Johns Hopkins University (JHU), JSALT 2022 [website]

Baltimore, MD

TEAM MEMBER | ADVISOR: PROF. HUNG-YI LEE, SHANG-WEN (DANIEL) LI

Jun. 2022 - Aug. 2022

- Collaborated with **5+** researchers from renowned companies and universities to bridge the gap in Parameter-efficient Fine-tuning methods between Natural Language Processing and Speech.
- Achieved over **90%** parameter reduction while maintaining comparable performance on the SUPERB benchmark.

NTU, Speech Processing and Machine Learning Lab

Taipei, Taiwan

RESEARCH ASSISTANT | ADVISOR: PROF. HUNG-YI LEE

Oct. 2020 - Aug. 2022

- Conducted research into Parameter-efficient Fine-tuning, such as Adapter and Prompt, with Large Language Models.
- Introduced the AdapterBias, utilizing **0.02%** parameters of the conventional adapter, yet delivered a significant **3.1%** improvement in Matthews correlation on the CoLA dataset.
- Achieved a reduction of **99.95%** in trainable parameters compared with Fine-tuning a whole model while experiencing an accuracy decrease of **1%** on the GLUE benchmark.

NTU, Vision and Learning Lab

Taipei, Taiwan

RESEARCH ASSISTANT | ADVISOR: PROF. YU-CHIANG (FRANK) WANG

Jan. 2021 - Dec. 2021

- Combined the concept of feature disentanglement and domain generalization to solve Face Anti-Spoofing challenges.
- Enhanced the Area under the ROC Curve (AUC) from **82.11%** to **85.49%** under the novel spoof attack detection.

PUBLICATIONS

* indicates equal contribution

- [1] **Chin-Lun Fu***, Zih-Ching Chen*, Yun-Ru Lee, and Hung-yi Lee. "AdapterBias: Parameter-efficient Token-dependent Representation Shift for Adapters in NLP Tasks," Findings of the Association for Computational Linguistics: **NAACL 2022**. [paper] [arxiv] [code]
- [2] **Chin-Lun Fu***, Zih-Ching Chen*, Chih-Ying Liu, Shang-Wen Li, and Hung-yi Lee. "Exploring Efficient-tuning Methods in Self-supervised Speech Models," The 2022 IEEE Spoken Language Technology Workshop: **SLT 2022**. [paper] [arxiv]
- [3] **Chin-Lun Fu***, Zih-Ching Chen*, Lin-Hsi Tsao*, Shang-Fu Chen, and Yu-Chiang (Frank) Wang. "Learning Facial Liveness Representation for Domain Generalized Face Anti-Spoofing," IEEE International Conference on Multimedia and Expo: **ICME 2022**. [paper] [arxiv]

SKILLS

Programming Python, C/C++, HTML/CSS, MATLAB

Libraries & Toolkits PyTorch, TensorFlow, Keras, Git, Linux, LaTeX, OpenCV, Scikit-learn, Cuda