Zih-Ching (Virginia) Chen

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EDUCATION

National Taiwan University, Taipei, Taiwan

- Master in Communication Engineering — Feb 2021 – Sep 2023
  - Advised by Prof. Hung-Yi Lee
  - Focus: Parameter-efficient adaptation for speech recognition and language processing
  - GPA: 4.12 / 4.30
  - Relevant Courses: Data Science, Algorithms, Financial Technology(A+)

PUBLICATIONS

- **Zih-Ching Chen**, Chao-Han Huck Yang, Bo Li, et al., "How to Estimate Model Transferability of Pre-Trained Speech Models?" *Interspeech 2023*
- **Zih-Ching Chen**, Yu-Shun Sung, Hung-yi Lee, "CHAPTER: Exploiting CNN Adapters for Self-supervised Speech Models," *ICASSP SASB 2023*
- **Zih-Ching Chen***, Chin-Lun Fu*, Yun-Ru Lee, Hung-yi Lee, "AdapterBias: Parameter-efficient Token-dependent Representation Shift for NLP Tasks," *NAACL 2022*
- **Zih-Ching Chen**, Chin-Lun Fu, Chih-Ying Liu, Shang-Wen Li, Hung-yi Lee, "Exploring Efficient-tuning Methods in Self-supervised Speech Models," *SLT 2022*
- **Zih-Ching Chen***, L.H. Tsao*, C.L. Fu*, S.F. Chen, Y.C.F. Wang, "Learning Facial Liveness Representation for Domain Generalized Face Anti-Spoofing," *ICME 2022*

WORK EXPERIENCE

NVIDIA AI Technology Center (AITC), Taipei, Taiwan

- Solution Architect — Mar 2024 – Present
  - Supported 5 academic institutions worldwide in integrating NVIDIA software and hardware into their AI research workflows, enhancing computational efficiency and research outcomes.
  - Conducted 2 workshops and supported 2 hackathons, providing technical expertise on generative AI and assisting over 10 teams in accelerating their research efforts.

Amazon Science, Alexa AI, Sunnyvale, USA

- Applied Scientist II (L5) Intern — Nov 2023 – Mar 2024
  - Proposed a comprehensive evaluation framework for in-context learning (ICL) vectors to better understand their behavior across various tasks.

NVIDIA Corporation, NVIDIA Research, Taipei, Taiwan

- Research Scientist Intern — Apr 2023 – Jul 2023
  - Investigated parameter-efficient prompting techniques for general pre-trained speech models, aiming to improve performance while reducing computational requirements.

RESEARCH EXPERIENCE

National Taiwan University, Speech Processing and Machine Learning Lab, Taipei, Taiwan

- Master Student — Dec 2020 – Sep 2023
  - Developed *AdapterBias*, a parameter-efficient method achieving a 99.95% reduction in trainable parameters with minimal accuracy loss; work recognized at NAACL 2022.
  - Introduced a score-based framework to evaluate the transferability of pre-trained speech models, aiding in the selection of appropriate models for specific tasks, presented at Interspeech 2023.

Johns Hopkins University (JSALT 2022), Baltimore, Maryland (Remote) — Jun 2022 – Aug 2022

- Team Member
  - Studied the effectiveness of PEFT methods in self-supervised speech models.
  - Achieved over 90% reduction in trainable parameters while maintaining performance on the SUPERB benchmark, contributing to more efficient training of self-supervised speech models; work presented in SLT2022.

National Taiwan University, Vision and Learning Lab, Taipei, Taiwan — Dec 2020 – Dec 2021

- Research Assistant
  - Enhanced face anti-spoofing techniques, improving the Area Under the Curve (AUC) metric from 82.11% to 85.49% in detecting novel spoof attacks; research presented at ICME 2022.

SKILLS

- Programming: Python, C/C++, HTML/CSS, JavaScript, R, Stata
- ML Libraries: PyTorch, TensorFlow, CUDA, Scikit-learn/Git, Linux, LaTeX, React.js, Node.js
- Languages: Mandarin (native), English (fluent)