

# 刘伟

电子工程 (EE) · 博士生

香港 中国

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## 研究兴趣

语音语言处理, 自动语音识别, 端到端语音识别, 儿童语音识别及置信度度量。自监督学习, 语音表征学习, 域自适应, 模型压缩和参数高效的微调。基于大语言模型的语音音频分析处理和多模态理解。

## 教育背景

### 香港中文大学 (CUHK)

电子工程 博士

- Supervisor: Prof. Tan LEE
- Laboratory: DSP and Speech Technology Laboratory

Hong Kong, China

Sep. 2019 - Present

### 哈尔滨工业大学 (HIT)

电子信息工程 学士

- GPA: 3.96/4.0
- 排名: 1/104

Weihai, China

Sep. 2015 - July. 2019

## 荣誉获奖

### 奖学金

- 2018 国家奖学金,
- 2017 国家奖学金,
- 2016 国家奖学金,

Weihai, China

Weihai, China

Weihai, China

## 最近工作

- **Under Working**
- Towards an efficient and reliable LLM-based spoken content understanding model
- **Under Review**
- TBD.

## 文章发表

- **First Author**
- **W. Liu**, J. Hou, D. Yang, M. Cao, and T. Lee, “A parameter-efficient language extension framework for multi-lingual asr” arXiv preprint arXiv:2406.06329, 2024. -- Interspeech 2024
- **W. Liu**, J. Hou, D. Yang, M. Cao, and T. Lee, “Lupet: Incorporating hierarchical information path into multi-lingual asr,” arXiv preprint arXiv:2401.03689, 2024. -- Interspeech 2024
- **W. Liu**, Y. Qin, Z. Peng, and T. Lee, “Sparsely shared lora on whisper for child speech recognition,” arXiv preprint arXiv:2309.11756, 2023 -- ICASSP 2024
- **W. Liu**, Z. Peng, and T. Lee, “Comflp: Correlation measure based fast search on asr layer pruning,” arXiv preprint arXiv:2309.11768, 2023 -- Interspeech 2023
- **W. Liu**, K. Fu, X. Tian, S. Shi, W. Li, Z. Ma, and T. Lee, “An asr-free fluency scoring approach with self-supervised learning,” arXiv preprint arXiv:2302.09928, 2023. -- ICASSP 2023
- **W. Liu**, K. Fu, X. Tian, S. Shi, W. Li, Z. Ma, and T. Lee, “Leveraging phone-level linguistic-acoustic similarity for utterance-level pronunciation scoring,” arXiv preprint arXiv:2302.10444, 2023. -- ICASSP 2023

- Y. Qin\*, **W. Liu\***, Z. Peng\*, S.-I. Ng, J. Li, H. Hu, and T. Lee, “Exploiting pre-trained asr models for alzheimer’ s disease recognition through spontaneous speech,” arXiv preprint arXiv:2110.01493, 2021. - - NCMMSC 2021
- **W. Liu** and T. Lee, “Utterance-level neural confidence measure for end-to-end children speech recognition,” in 2021 IEEE Automatic Speech Recognition and Understanding Workshop (ASRU). IEEE, 2021, pp. 449–456. - - ASRU 2021
- S.-I. Ng\*, **W. Liu\***, Z. Peng, S. Feng, H.-P. Huang, O. Scharenborg, and T. Lee, “The cuhk-tudelft system for the slt 2021 children speech recognition challenge,” arXiv preprint arXiv:2011.06239, 2020. - - SLT 2021 CSRC workshop
- **Co-Author**
- Y. Tian, **W. Liu**, and T. Lee, “Diffusion-based mel-spectrogram enhancement for personalized speech synthesis with found data,” arXiv preprint arXiv:2305.10891, 2023 - -ASRU 2023
- J. Li, **W. Liu**, Z. Zhang, J. Wang, and T. Lee, “Model compression for dnn-based speaker verification using weight quantization,” arXiv preprint arXiv:2210.17326, 2022. - - Interspeech 2023
- J. Li, **W. Liu**, and T. Lee, “Editnet: A lightweight network for unsupervised domain adaptation in speaker verification,” arXiv preprint arXiv:2206.07548, 2022. - - Interspeech 2022

## 研究经历

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- **实习**
- Mar. 2024 - Jun. 2024: Audio Team, 小红书 [Shanghai, China]
- Aug. 2023 - Feb. 2024: GVoice Team, 腾讯 [Shanghai, China]
- June. 2022 - Oct. 2022: Speech & Audio Team, AI Lab, 字节跳动 [Beijing, China]
- **挑战赛**
- July. 2021 - Sep. 2021: 阿尔兹海默症 (AD) 识别挑战赛 NCMMSC 2021
- Feb. 2021 - Mar. 2021: 新冠咳嗽语音检测挑战赛 INTERSPEECH 2021
- Aug. 2020 - Oct. 2020: 2021 SLT 儿童语音识别挑战赛 (CSRC)
- **研讨会**
- Mar. 2023: Augmented Language Model – learn to reason and use tools [NC State]
- Dec. 2022: L2 Speech Assessment [CUHK]
- **助教**
- Introduction to Digital Singal Processing (ELEG 3503)
- Introduction to Electronic System Design (ELEG 2700)
- Multivariable Calculus for Engineers (ENGG 1130)

## 技能水平

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- 擅长 Python 和 Shell 脚本, 熟练深度学习框架 Pytorch.
- 熟悉语音领域常用的工具, 比如 Kaldi, Espnet, Wenet, S3prl, and Hugging Face.
- 对广泛领域的前沿技术充满热情, 比如 NLP, CV and ML.
- 乐于讨论和协作交流以实现共同目标.