# 刘 伟

电子工程 (EE) · 博士生

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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)**　　　　　　　　　　　　　　　　　　　　　　　　*Hong Kong, China*

电子工程 博士　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Sep. 2019 - Present*

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

**哈尔滨工业大学 (HIT)**　　　　　　　　　　　　　　　　　　　　　　　　*Weihai, China*

电子信息工程 学士　　　　　　　　　　　　　　　　　　　　　　　　　　*Sep. 2015 - July. 2019*

- GPA: 3.96/4.0
- 排名: 1/104

## 荣誉获奖

奖学金

| | | |
|---|---|---|
| 2018 | **国家奖学金,** | *Weihai, China* |
| 2017 | **国家奖学金,** | *Weihai, China* |
| 2016 | **国家奖学金,** | *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

- **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

- 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.