Helin Wang

✉ hwang258@jhu.edu · 📞 (+1) 667-354-9059 · in helin-wang-2a74671b3

ⓘ Basic Information

Home Page: https://wanghelin1997.github.io/helinwang/
Google Scholar Page: https://scholar.google.com/citations?user=I_V0zBMAAAAJ
Github Page: https://github.com/WangHelin1997

ⓘ Research Interest

My research interest majorly lies in **speech and audio signal processing**, and **machine learning**.

🎓 Education

Johns Hopkins University, Baltimore, USA   2022 – Present
Ph.D student in Whiting School of Engineering (WSE)
Supervisor: Najim Dehak

Peking University, Beijing, China   2019 – 2022
Master student in School of Electronic and Computer Engineering (ECE)
Supervisor: Yuexian Zou

Tsinghua University, Beijing, China   2015 – 2019
B.S. in Department of Automation (DA)

👥 Experience

Johns Hopkins University, Center for Language and Speech Processing (CLSP)   August 2022 – Present

Research Assistant   Supervisor: Najim Dehak, Laureano Moro-Velázquez and Jesús Villalba

Microsoft STCA, NLP Group   February 2022 - May 2022
Intern   Supervisor: Linjun Shou and Ming Gong

Tencent AI Lab, Speech Group   May 2020 - November 2021
Intern   Supervisor: Bo Wu and Chao Weng

Peking University, ADSP LAB   August 2019 - July 2022
Research Assistant   Supervisor: Yuexian Zou

Ubtech Robotics Inc, Speech Group   July 2019 - September 2019
Intern   Supervisor: Dongyan Huang

University of California Berkeley, California Path Lab   July 2018 - September 2018
Summer Researcher   Supervisor: Masayoshi Tomizuka

🎓 Publications

1. **Helin Wang**, Thomas Thebaud, Jesus Villalba, Myra Sydnor, Becky Lammers, Najim Dehak, Laureano Moro-Velazquez DuTa-VC: A Duration-aware Typical-to-atypical Voice Conversion Approach with Diffusion Probabilistic Model. INTERSPEECH 2023
2. **Helin Wang**, Dading Chong, Peilin Zhou, Qingcheng Zeng: Masked Spectrogram Prediction For Self-Supervised Audio Pre-Training. ICASSP 2023.

3. Dongchao Yang, Jianwei Yu, **Helin Wang**, Wen Wang, Chao Weng, Yuexian Zou, Dong Yu: Diffsound: Discrete Diffusion Model for Text-to-Sound Generation. IEEE ACM Trans. Audio Speech Lang. Process. 31: 1720-1733 (2023)

4. Junling Liu, Peilin Zhou, Yining Hua, Dading Chong, Zhongyu Tian, Andrew Liu, **Helin Wang**, Chenyu You, Zhenhua Guo, Lei Zhu, Michael Lingzhi Li: Benchmarking Large Language Models on CMExam - A Comprehensive Chinese Medical Exam Dataset. NeurIPS 2023.

5. Dongchao Yang, Songxiang Liu, Jianwei Yu, **Helin Wang**, Chao Weng, Yuexian Zou: NoreSpeech: Knowledge Distillation based Conditional Diffusion Model for Noise-robust Expressive TTS. INTERSPEECH 2023

6. **Helin Wang**, Dongchao Yang, Yuexian Zou, Fan Cui, Yujun Wang: Detect What You Want: Target Sound Detection. DCASE 2022

7. **Helin Wang**, Dongchao Yang, Wenwu Wang, Yuexian Zou: A Mixed Supervised Learning Framework For Target Sound Detection. DCASE 2022

8. **Helin Wang**, Dongchao Yang, Yuexian Zou, Zhongjie Ye, Wenwu Wang: A Mutual Learning Framework for Few-Shot Sound Event Detection. ICASSP 2022: 811-815

9. **Helin Wang**, Dongchao Yang, Zhongjie Ye, Yuexian Zou, Wenwu Wang: RaDur: A Reference-aware and Duration-robust Network for Target Sound Detection. INTERSPEECH 2022: 1511-1515

10. **Helin Wang**, Dongchao Yang, Chao Weng, Jianwei Yu, Yuexian Zou: Improving Target Sound Extraction with Timestamp Information. INTERSPEECH 2022: 1526-1530

11. Peilin Zhou, Dading Chong, **Helin Wang**, Qingcheng Zeng: Calibrate and Refine! A Novel and Agile Framework for ASR Error Robust Intent Detection. INTERSPEECH 2022: 1096-1100

12. Zhongjie Ye, Yuqing Wang, **Helin Wang**, Dongchao Yang, Yuexian Zou: FeatureCut: An Adaptive Data Augmentation for Automated Audio Captioning. 2022 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC), 2022: 313-318

13. **Helin Wang**, Yuexian Zou, Wenwu Wang: A Global-Local Attention Framework for Weakly Labelled Audio Tagging. ICASSP 2021: 351-355

14. **Helin Wang**, Yuexian Zou, Wenwu Wang: SpecAugment++: A Hidden Space Data Augmentation Method for Acoustic Scene Classification. Interspeech 2021: 551-555

15. **Helin Wang**, Bo Wu, Lianwu Chen, Meng Yu, Jianwei Yu, Yong Xu, Shi-Xiong Zhang, Chao Weng, Dan Su, Dong Yu: TeCANet: Temporal-Contextual Attention Network for Environment-Aware Speech Dereverberation. Interspeech 2021: 1109-1113

16. Dongchao Yang, **Helin Wang**, Yuexian Zou: Unsupervised Multi-Target Domain Adaptation for Acoustic Scene Classification. Interspeech 2021: 1159-1163

17. Haoran Zhang, Yuexian Zou, **Helin Wang**: Contrastive Self-Supervised Learning for Text-Independent Speaker Verification. ICASSP 2021: 6713-6717

18. Jinchuan Tian, Rongzhi Gu, **Helin Wang**, Yuexian Zou: Layer Reduction: Accelerating Conformer-Based Self-Supervised Model via Layer Consistency. CoRR abs/2105.00812 (2021)

19. Zhiqi Huang, Fenglin Liu, Xian Wu, Shen Ge, **Helin Wang**, Wei Fan, Yuexian Zou: Audio-Oriented Multimodal Machine Comprehension via Dynamic Inter- and Intra-modality Attention. AAAI 2021: 13098-13106

20. Zhongjie Ye, **Helin Wang**, Dongchao Yang, Yuexian Zou: Improving the Performance of Automated Audio Captioning via Integrating the Acoustic and Semantic Information. DCASE 2021: 40-44

21. **Helin Wang**, Yuexian Zou, Dading Chong, Wenwu Wang: Modeling Label Dependencies for Audio Tagging With Graph Convolutional Network. IEEE Signal Process. Lett. 27: 1560-1564 (2020)

22. **Helin Wang**, Yuexian Zou, DaDing Chong: Acoustic Scene Classification with Spectrogram Processing Strategies. DCASE 2020: 210-214

23. **Helin Wang**, Yuexian Zou, Dading Chong, Wenwu Wang: Environmental Sound Classification with Parallel Temporal-Spectral Attention. INTERSPEECH 2020: 821-825

24. **Helin Wang**, Dading Chong, Dongyan Huang, Yuexian Zou: What Affects the Performance of Convolutional Neural Networks for Audio Event Classification. ACII Workshops 2019: 140-146

25. **Helin Wang**, Yuexian Zou, Dading Chong, Wenwu Wang: Learning discriminative and robust time-frequency representations for environmental sound classification. CoRR abs/1912.06808 (2019)

♡ Services

TASLP, Neurocomputing, Interspeech, ICASSP	Reviewer (or PC Member)

♡ Honors and Awards

1st Team Ranking of DCASE Challenge Task 5 (Judges' award)	2021
4th Team Ranking of DCASE Challenge Task 6 (Judges' award)	2021
6th Team Ranking of DCASE Challenge Task 1	2020
3rd Team Ranking of DCASE Challenge Task 6	2020
Outstanding Graduate Student Award of Peking University	2022
Outstanding Graduate Thesis Award of Peking University	2022
Award for Scientific Research of Peking University	2020-2021
School Prize of Peking University	2019-2020
Merit Student of Peking University	2019-2020

⚙ Skills

- Programming Languages: Python, Matlab
- Platform: Linux
- English: IELTS Test Overall 7.0
- Others: Pytorch, Tensorflow