

HELIN WANG

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📄 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 **AI for speech and audio signal processing**, encompassing audio generation tasks such as source separation and text-to-speech synthesis, as well as audio understanding tasks like audio classification and captioning.

🎓 EDUCATIONS

Johns Hopkins University, Baltimore, USA 2022 – Expected 2026

Ph.D candidate 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)

👤 EXPERIENCES

Meta, FAIR, New York, USA May 2025 – Present

Research Scientist Intern Supervisor: Wei-Ning Hsu

Johns Hopkins University, CLSP, Baltimore, USA August 2022 – Present

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

Tencent AI Lab, Speech Group, Bellevue, USA May 2024 - August 2024

Intern Supervisors: Meng Yu and Dong Yu

Amazon, Amazon General Intelligence (AGI), Baltimore, USA December 2022 - December 2023

Student Researcher Supervisors: Venkatesh Ravichandran and Milind Rao

Microsoft STCA, NLP Group, Beijing, China February 2022 - May 2022

Intern Supervisors: Linjun Shou and Ming Gong

Tencent AI Lab, Speech Group, Shenzhen, China May 2020 - November 2021

Intern Supervisors: Bo Wu and Chao Weng

Peking University, ADSP LAB, Shenzhen, China August 2019 - July 2022

Research Assistant Supervisor: Yuexian Zou

Ubtech Robotics Inc, Speech Group, Shenzhen, China July 2019 - September 2019

Intern Supervisor: Dongyan Huang

SELECTED PUBLICATIONS

1. **Helin Wang***, Jiarui Hai*, Dading Chong, Karan Thakkar, Tiantian Feng, Dongchao Yang, Junhyeok Lee, Laureano Moro Velazquez, Jesus Villalba, Zengyi Qin, Shrikanth Narayanan, Mounya Elhiali, Najim Dehak: CapSpeech: Enabling Downstream Applications in Style-Captioned Text-to-Speech. Preprint.
2. **Helin Wang**, Jiarui Hai, Dongchao Yang, Chen Chen, Kai Li, Junyi Peng, Thomas Thebaud, Laureano Moro-Velazquez, Jesus Villalba, Najim Dehak: SoloSpeech: Enhancing Intelligibility and Quality in Target Speech Extraction through a Cascaded Generative Pipeline. Preprint.
3. **Helin Wang***, Jiarui Hai*, Yen-Ju Lu, Karan Thakkar, Mounya Elhilali, Najim Dehak: SoloAudio: Target Sound Extraction with Language-oriented Audio Diffusion Transformer. ICASSP 2025.
4. **Helin Wang**, Meng Yu, Jiarui Hai, Chen Chen, Yuchen Hu, Rilun Chen, Najim Dehak, Dong Yu: SSR-Speech: Towards Stable, Safe and Robust Zero-shot Text-based Speech Editing and Synthesis. ICASSP 2025.
5. **Helin Wang**, Jesus Villalba, Laureano Moro-Velazquez, Jiarui Hai, Thomas Thebaud, Najim Dehak: Noise-robust Speech Separation with Fast Generative Correction. INTRESPEECH 2024: 2165-2169. (**Oral**).
★ Nominated for the **Best Paper Award** and the **Best Student Paper Award** (5 out of 1,030 accepted papers).
6. Jiarui Hai*, **Helin Wang***, Dongchao Yang, Karan Thakkar, Najim Dehak, Mounya Elhilali: DPM-TSE: A Diffusion Probabilistic Model for Target Sound Extraction. ICASSP 2024: 1196-1200.
7. **Helin Wang**, Venkatesh Ravichandran, Milind Rao, Becky Lammers, Becky Lammers, Myra Sydnor, Nicholas Maragakis, Ankur A. Butala, Jayne Zhang, Lora Clawson, Victoria Chovaz, Laureano Moro-Velazquez: Improving fairness for spoken language understanding in atypical speech with Text-to-Speech. NeurIPS 2023 Workshop on Synthetic Data Generation with Generative AI (**Oral**).
8. **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: 1548-1552.
9. Dading Chong*, **Helin Wang***, Peilin Zhou, Qingcheng Zeng: Masked Spectrogram Prediction For Self-Supervised Audio Pre-Training. ICASSP 2023: 1-5.
10. Dongchao Yang*, **Helin Wang***, Zhongjie Ye, Yuexian Zou, Wenwu Wang: RaDur: A Reference-aware and Duration-robust Network for Target Sound Detection. INTERSPEECH 2022: 1511-1515.
11. **Helin Wang***, Dongchao Yang*, Chao Weng, Jianwei Yu, Yuexian Zou: Improving Target Sound Extraction with Timestamp Information. INTERSPEECH 2022: 1526-1530.
12. **Helin Wang**, Yuexian Zou, Wenwu Wang: A Global-Local Attention Framework for Weakly Labelled Audio Tagging. ICASSP 2021: 351-355.
13. **Helin Wang**, Yuexian Zou, Wenwu Wang: SpecAugment++: A Hidden Space Data Augmentation Method for Acoustic Scene Classification. INTERSPEECH 2021: 551-555.
14. **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.
15. **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).
16. **Helin Wang**, Yuexian Zou, Dading Chong, Wenwu Wang: Environmental Sound Classification with Parallel Temporal-Spectral Attention. INTERSPEECH 2020: 821-825.

SERVICES (REVIEWER)

- IEEE/ACM Transactions on Audio, Speech, and Language Processing
- IEEE Signal Processing Letters
- Neurocomputing
- INTERSPEECH 2023, 2024, 2025
- ICASSP 2023, 2024, 2025
- NeurIPS 2024, 2025

- ICLR 2025

♡ TEACHING

2024/01 - 2024/05, *Teaching Assistant*, Johns Hopkins University, Baltimore, USA:

EN.520.123: Computational Modeling for Electrical and Computer Engineering in Spring 2024 in the Department of Electrical and Computer Engineering

2025/01 - 2025/05, *Teaching Assistant*, Johns Hopkins University, Baltimore, USA:

EN.520.629: Machine Learning for Medical Applications in Spring 2025 in the Department of Electrical and Computer Engineering

♡ HONORS AND AWARDS

<i>IEEE SPS Young Author Best Paper Award</i>	2024
<i>Best Paper Award</i> Nomination at INTERSPEECH	2024
<i>1st Team Ranking</i> of DCASE Challenge Task 5 (Judges' award)	2021
<i>Outstanding Graduate Student Award</i> of Peking University	2022
<i>Outstanding Graduate Thesis Award</i> of Peking University	2022
<i>Award for Scientific Research</i> of Peking University	2020-2021
<i>School Prize</i> of Peking University	2019-2020
<i>Merit Student</i> of Peking University	2019-2020