Heming Wang

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RESEARCH INTERESTS

Speech enhancement, Bandwidth extension, self-supervised learning.

EDUCATION

The Ohio State University Columbus, OH, U.S. September 2018 - Present
Advisor: Prof. DeLiang Wang
Ph.D. student, Computer Science and Engineering
GPA: 3.65 / 4.0

University of Waterloo, Waterloo, ON, Canada September 2016 - May 2018
Advisor: Prof. Richard Mann & Prof. Edward Vrscay
Master of Mathematics, Applied Mathematics
GPA: 3.89 / 4.0

University of Waterloo, Waterloo, ON, Canada September 2014 - May 2016
Bachelor of Science, Physics and Computer Science Minor
GPA: 3.9 / 4.0

Harbin Institute of Technology, Harbin, HL, China September 2012 - May 2014
Electric Science and Technology
GPA: 88 / 100

PUBLICATIONS

H. Wang and D. L. Wang, "Neural Cascade Architecture with Triple-domain Loss for Speech Enhancement," in submission to *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (**IEEE/ACM TASLP**), under review.

H. Wang and D. L. Wang, "Towards Robust Speech Super-resolution," in *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (**IEEE/ACM TASLP**), vol. 29, pp. 2058-2066, 2021.

H. Wang and D. L. Wang. "Time-Frequency Loss for CNN Based Speech Super-Resolution," in *IEEE International Conference on Acoustics, Speech and Signal Processing* (**ICASSP**), pp. 861-865, 2020.

H. Wang, R. Mann, and E. R. Vrscay, "A Diffusion-Based Two-Dimensional Empirical Mode Decomposition Algorithm for Image Analysis," in *International Conference Image Analysis and Recognition* (**ICIAR**), pp. 293-305 2018.

EXPERIENCES

Research Intern Microsoft Inc.
May-August 2021 Seattle, Washington, United States

- Use self-supervised learning to improve robust automatic speech recognition

Research Intern Elevoc Inc.
May-August 2020 Shenzhen, Guangdong, China

- Efficient Network for Bandwidth Extension on Mobile Devices
- Bandwidth Extension for Bone-conducted Speech

Graduate Research Assistant — The Ohio State University
September 2018 - Present — Columbus, Ohio, USA

- Speech Super-resolution
- Speech Enhancement

Graduate Research Assistant — University of Waterloo
September 2016 - May 2018 — Waterloo, Ontario, Canada

- Real-time Signal Processing for Ultrasound
- Empirical Mode Decomposition for Signal Analysis
- Bayesian Methods for Blind Source Separation

Research Intern — AISpeech
May-August 2016 — Suzhou, Jiangsu, China

- Chinese Singing Voice Synthesis
- Part-of-speech Tagging

Undergraduate Research Assistant — University of Waterloo
May-August 2015 — Waterloo, Ontario Canada

- Formant Synthesis for English Vowels
- Real-time Spectrum Analysis Using MyDAQ

COMPUTER SKILLS Python, C++, Bash, MATLAB, Pytorch, Tensorflow, Keras.