Heming Wang

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RESEARCH INTERESTS	Speech enhancement, bandwidth extension, self-supervised learning.	
EDUCATION	**The Ohio State University**, Columbus, OH, USA Advisor: Prof. DeLiang Wang *Ph.D. student*, Computer Science and Engineering	August 2018 - Present
	University of Waterloo, Waterloo, ON, Canada Advisor: Prof. Richard Mann & Prof. Edward Vrscay *Master of Mathematics*, Applied Mathematics	August 2016 - May 2018
	University of Waterloo, Waterloo, ON, Canada *Bachelor of Science*, Physics & Computer Science Minor	August 2014 - May 2016
	Harbin Institute of Technology, Harbin, HL, China Electric Science and Technology	August 2012 - May 2014

PUBLICATIONS

H. Wang and D. L. Wang, "Neural Cascade Architecture with Triple-domain Loss for Speech Enhancement," in *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (**IEEE/ACM TASLP**), under review, 2021.

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.

RESEARCH 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

August 2018 - Present   Columbus, Ohio, USA

- Speech super-resolution
- Speech enhancement

Graduate Research Assistant   University of Waterloo
August 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.

AWARDS   **University Fellowship**   2018
                The Ohio State University

                Entrance Scholarship   2014
                Department of Physics & Astronomy, University of Waterloo