Zhuohuang Zhang

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EDUCATION

Indiana University Bloomington   Bloomington, IN
Doctor of Philosophy   08/2017 - Present (05/2022 expected)
Computer Science, Speech and Hearing Sciences
Advisors: Prof. Donald S. Williamson, Prof. Yi Shen

University of Rochester   Rochester, NY
Master of Science   08/2015 - 05/2017
Electrical and Computer Engineering
Advisor: Prof. Zhiyao Duan

Beijing Institute of Technology   Beijing, China
Bachelor of Engineering   08/2011 - 06/2015
Opto-Electrical Information Engineering

PUBLICATIONS

- **Zhuohuang Zhang**, Donald S. Williamson Yi Shen (2020). *Investigation of Phase Distortion on Perceived Speech Quality for Hearing-impaired Listeners.* Interspeech 2020, Shanghai, China.

- **Zhuohuang Zhang**, Chengyun Deng, Yi Shen, Donald S. Williamson, Yongtao Sha, Yi Zhang, Hui Song and Xiangang Li (2020). *On Loss Functions and Recurrency Training for GAN-based Speech Enhancement Systems.* Interspeech 2020, Shanghai, China.

- **Zhuohuang Zhang**, Yi Shen (2019). *Listener Preference on the Local Criterion for Ideal Binary-Masked Speech* (oral). Interspeech 2019, Graz, Austria.

- **Zhuohuang Zhang**, Donald S. Williamson, Yi Shen (2019). *Impact of Amplification on Speech Enhancement Algorithms Using an Objective Evaluation Metric* (poster). ICA 2019, Aachen, Germany.

- **Zhuohuang Zhang**, Yi Shen, Donald S. Williamson (2019). *Objective Comparison of Speech Enhancement Algorithms with Hearing Loss Simulation* (poster). ICASSP 2019, Brighton, UK.

- Yi Shen, Celia Zhang, **Zhuohuang Zhang** (2018). *Feasibility of interleaved Bayesian adaptive procedures in estimating the equal-loudness contour.* The Journal of the Acoustical Society of America.

- Yong Song, Qun Hao, Yue liu, Tianle Tan, **Zhuohuang Zhang** (2014). *Design and Implementation of A Retina-like Imaging System Based on Non-uniform Lens Array.* International Symposium on Optoelectronic Technology and Application, SPIE.

- Qingsheng Luo, Zhongyang Xiao, Pan Lu, **Zhuohuang Zhang**, Lei Zhao (2014). *Mechanical Design and Kinematic Analysis of a Wearable Lumbodorsal Therapeutic Instrument.* Journal of Mechanical & Electrical Engineering.

- Zhen Tan, Lianfeng Zhao, Bolin Shan, Jing Wang, Jun Xu, **Zhuohuang Zhang** (2014). *Sulfur Passivation Enhancement for GaSb MOS Devices by Adding H_2O_2 to $(NH_4)_2S$ Solution* (poster). IEEE SISC 2014, San Diego, USA.

INVITED TALKS AND POSTERS

- *Impact of phase distortion and phase-insensitive speech enhancement on speech quality perceived by hearing-impaired listeners*, 179th Meeting Acoustic Society of America, Chicago, IL, 2020.

- *Monaural Speech Enhancement with Convolutional Recurrent Generative Adversarial Networks* (guest lecture), CSCI-B659: Deep Learning for Speech Processing, Indiana University Bloomington, USA, 2019.

- *Impact of Amplification on Speech Enhancement Algorithms Using an Objective Evaluation Metric* (poster), ICA 2019, Aachen, Germany, 2019.

- *Inconsistencies between the predicted qualities of enhanced speech signals from two objective metrics*, 177th Meeting Acoustic Society of America, Louisville, KY, 2019.

- *Can listeners reliably identify their preferred amplification profiles for speech listening?* (poster), 177th Meeting Acoustic Society of America, Louisville, KY, 2019.

INTERNSHIP	**Tencent, AI Lab**	Bellevue, WA
	Research Intern, Mentors: Dr. Yong Xu, Dr. Dong Yu	05/2020 - 08/2020

- Worked on single/multi-channel speech enhancement.

	DiDi Chuxing, AI Lab	Beijing, China
	Research Intern, Mentors: Dr. Hui Song, Dr. Xiangang Li	06/2019 - 08/2019

- Designed and implemented a novel GAN-based speech enhancement algorithm in Tensorflow.

- Implemented/Tested several state-of-the-art speech enhancement algorithms for comparison.

- The proposed GAN model outperforms the other systems in terms of PESQ, STOI, CSIG, CBAK, and COVL.

AWARDS	**€650 Travel Grant from ISCA for Interspeech 2019**	07/2019
	$500 Research Support Grant from IU SPHS department	02/2018
	Fellowship from IU SPHS department	09/2017
	20% Tuition Grant from UR ECE department	09/2015

COMPUTER SKILLS	**Programming Languages**: Python, MATLAB, C, Bash, PostgreSQL, R, LaTeX
	Deep Learning Tools: Tensorflow, PyTorch, Keras

GRADUATE COURSES	**Computer Science**: Machine Learning, Data Mining, Deep Learning: Speech Processing, Advanced Operating System, Algorithm Design and Analysis, Artificial Intelligence, Advanced Database Concepts
	Speech and Hearing Sciences: Auditory Anatomy & Physiology, Psychoacoustics, Bayesian Data Analysis, Speech Seminar, Hearing Seminar, Instrumentation Methods, Research & Ethics in Speech, Language, and Hearing
	Electrical Engineering: Audio Software Design, Digital Image Processing, Digital Signal Processing, Random Process, Audio Signal Processing, Digital Video Processing, Network Science Analytics

EXPERIENCE	**Research Assistant at IUB**	08/2018 - Present
	Teaching Assistant at UR (ECE 472)	01/2017 - 05/2017
	Teaching Assistant at UR (ECE 241)	09/2016 - 12/2016
	Research Assistant at UR	05/2016 - 05/2017