

ZHUOHUANG ZHANG

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Zipcode: 47408

EDUCATION

Indiana University Bloomington

Doctor of Philosophy: Computer Science, Hearing Sciences

May 2022 (Expected)

Master of Science: Computer Science

December 2021

Advisors: [Prof. Donald S. Williamson](#), [Prof. Yi Shen](#)

University of Rochester

Master of Science: Electrical and Computer Engineering

May 2017

Advisor: [Prof. Zhiyao Duan](#)

Beijing Institute of Technology

Bachelor of Engineering: Opto-Electrical Information Engineering

June 2015

POSITIONS HELD

Indiana University Bloomington

- Research Assistant
 - Speech enhancement algorithms for hearing-impaired listeners
 - Non-intrusive speech assessment
 - Speech perception on phase distorted speech for hearing-impaired listeners
- Associate Instructor
 - CSCI B-565 Data Mining
 - CSCI B-455 Principles of Machine Learning

Fall 2021

Spring 2020

Microsoft

- Research Intern
 - Redmond, WA, USA
 - All-neural beamformer for continuous speech separation
 - Publication: All-neural beamformer for CSS [\[url\]](#)
- Supervisor: [Dr. Takuya Yoshioka](#)

May 2021 - August 2021

Tencent

- Research Intern
 - Tencent AI Lab, Bellevue, WA, USA
 - All deep learning MVDR beamformer [\[url\]](#)
 - Publication: ADL-MVDR [\[url\]](#), MCMF ADL-MVDR [\[url\]](#)
- Supervisor: [Dr. Yong Xu](#)
- Manager: [Dr. Dong Yu](#)

May 2020 - October 2020

DiDi Chuxing

- Research Intern
 - DiDi AI Labs, Beijing, China
 - GAN-based speech enhancement project
 - Publication: Comparison of GAN-based speech enhancement systems [\[url\]](#)
- Supervisor: Dr. Hui Song
- Manager: Dr. Xiangang Li

Summer 2019

PROFESSIONAL ACTIVITIES

Reviewer:

- IEEE/ACM Transactions on Audio, Speech, and Language Processing (TASLP)
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)
- European Association for Signal Processing (EURASIP) Journal on Audio, Speech, and Music Processing (JASM)

Organizing committee:

- ConferencingSpeech 2022 Challenge (Interspeech) [\[url\]](#).

PUBLICATIONS

Journal Articles:

- Donghyeon Yun, Yi Shen, **Zhuohuang Zhang** (2022). *Feasibility of hearing aid gain self-adjustment using speech recognition*. The Journal of the Acoustical Society of Korea.
- **Zhuohuang Zhang**, Yong Xu, Meng Yu, Shi-Xiong Zhang, Lianwu Chen, Donald S. Williamson, Dong Yu (2021). *Multi-channel Multi-frame ADL-MVDR for Target Speech Separation*. IEEE/ACM Transactions on Audio, Speech, and Language Processing.
- 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.

Conference Papers:

- **Zhuohuang Zhang**, Takuya Yoshioka, Naoyuki Kanda, Zhuo Chen, Xiaofei Wang, Dongmei Wang, Sefik Emre Eskimez. *All-neural Beamformer for Continuous Speech Separation*. Accepted to ICASSP 2022, Singapore.
- Yong Xu, **Zhuohuang Zhang**, Meng Yu, Shi-Xiong Zhang, Dong Yu. *Generalized Spatio-Temporal RNN Beamformer for Target Speech Separation*. Interspeech 2021, Brno, Czech.
- **Zhuohuang Zhang**, Yong Xu, Meng Yu, Shi-Xiong Zhang, Lianwu Chen, Dong Yu. *ADL-MVDR: All Deep Learning MVDR Beamformer for Target Speech Separation*. ICASSP 2021, Toronto, Canada.
- **Zhuohuang Zhang**, Piyush Vyas, Xuan Dong, Donald S. Williamson. *An End-to-End Non-intrusive Model For Subjective and Objective Real-world Speech Assessment using a Multi-task Framework*. **Outstanding student paper award**, ICASSP 2021, Toronto, Canada.
- **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.

- Zhen Tan, Lianfeng Zhao, Bolin Shan, Jing Wang, Jun Xu, **Zhuohuang Zhang** (2014). *Sulfur Passivation Enhancement for GaSb MOS Devices by Adding H₂O₂ to (NH₄)₂S Solution* (poster). IEEE SISC 2014, San Diego, USA.

INVITED TALKS

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

HONORS, AWARDS & FELLOWSHIPS

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| Larry Humes travel award, Indiana University Bloomington | Aug. 2021 |
| Outstanding student paper award, ICASSP 2021 | Jun. 2021 |
| Research support grant from Indiana Lions Speech and Hearing, Inc. | Dec. 2020 |
| Travel grant from ISCA for Interspeech 2019 | Jul. 2019 |
| Research support grant, Indiana University Bloomington | Feb. 2018 |
| Fellowship, Indiana University Bloomington | Aug. 2017 |
| Tuition grant, University of Rochester | Aug. 2015 |