Ashutosh Pandey

395 Dreese Laboratories
2015 Neil Avenue
The Ohio State University
Columbus, OH 43210, USA

Phone: 1-(614)-962-9819
Email: pandey.99@osu.edu
Homepage: ashutosh620.github.io

RESEARCH INTERESTS

Speech enhancement, speaker separation, automatic speech recognition

EDUCATION

Ph.D. student, Computer Science and Engineering   August 2016 - Present
The Ohio State University (OSU), Columbus, OH, USA
Advisor: Prof. DeLiang Wang
GPA: 4.0/4.0

B.Tech, Electronics and Communication Engineering   August 2011 - June 2015
Indian Institute of Technology Guwahati, Guwahati, Assam, India
Thesis: Significance of Glottal Activity Detection for Speaker Verification in Degraded and Limited Data Condition
Advisor: Prof. S.R.M. Prasanna
GPA: 8.92/10.0

ARTICLES UNDER REVIEW

[17] **Ashutosh Pandey** and DeLiang Wang, "Attentive Training: A New Training Framework for Talker-independent Speaker Extraction", in *proceedings of ICASSP*, 2022.

[16] **Ashutosh Pandey**, Buye Xu, Anurag Kumar, Jacob Donley, Paul Calamia, and DeLiang Wang, "Multichannel Speech Enhancement without Beamforming", in *proceedings of ICASSP*, 2022.

[15] **Ashutosh Pandey**, Buye Xu, Anurag Kumar, Jacob Donley, Paul Calamia, and DeLiang Wang, "TADRN: Triple-Attentive Dual-Recurrent Network for Ad-hoc Array Multichannel Speech Enhancement", in *proceedings of ICASSP*, 2022.

[14] **Ashutosh Pandey**, Buye Xu, Anurag Kumar, Jacob Donley, Paul Calamia, and DeLiang Wang, "TPARN: Triple-path Attentive Recurrent Network For Time-domain Multichannel Speech Enhancement", in *proceedings of ICASSP*, 2022.

[13] **Ashutosh Pandey** and DeLiang Wang, "Self-attending RNN for Speech Enhancement to Improve Cross-corpus Generalization", in *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 2021.

PUBLISHED ARTICLES

[12] **Ashutosh Pandey** and DeLiang Wang, "Dense CNN with Self-Attention for Time-Domain Speech Enhancement", in *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 29, pp. 1270-1279, 2021.

[11] **Ashutosh Pandey**, Chunxi Liu, Yun Wang, and Yatharth Saraf, "Dual Application of Speech Enhancement for Automatic Speech Recognition", in *Workshop on Spoken Language Technology*, 2021, pp. 223-228.

[10] **Ashutosh Pandey** and DeLiang Wang, "Learning Complex Spectral Mapping

for Speech Enhancement with Improved Cross-corpus Generalization", in *proceedings of INTERSPEECH*, 2020, pp. 4511-4515.

[9] **Ashutosh Pandey** and DeLiang Wang, "Dual-path Self-Attention RNN for Real-Time Speech Enhancement", *arXiv:2010.12713*, 2020.

[8] **Ashutosh Pandey** and DeLiang Wang, "On Cross-Corpus Generalization of Deep Learning Based Speech Enhancement", in *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 28, pp. 2489-2499, 2020.

[7] **Ashutosh Pandey** and DeLiang Wang, "Densely Connected Neural Network with Dilated Convolutions for Real-Time Speech Enhancement in the Time Domain", in *proceedings of ICASSP*, 2020, pp. 6629-6633.

[6] **Ashutosh Pandey** and DeLiang Wang, "Exploring Deep Complex Networks for Complex Spectrogram Enhancement", in proceedings of *ICASSP*, 2019, pp. 6885-6889.

[5] **Ashutosh Pandey** and DeLiang Wang, "TCNN: Temporal Convolutional Neural Network for Real-Time Speech Enhancement in the Time Domain", in *proceedings of ICASSP*, 2019, pp. 6875-6879.

[4] **Ashutosh Pandey** and DeLiang Wang, "A New Framework for CNN Based Speech Enhancement in the Time Domain", in *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 27, no. 7, pp. 1179-1188, 2019.

[3] **Ashutosh Pandey** and DeLiang Wang, "A New Framework for Supervised Speech Enhancement in the Time Domain", in *proceedings of INTERSPEECH*, 2018, pp. 1136-1140.

[2] **Ashutosh Pandey** and DeLiang Wang, "On Adversarial Training and Loss Functions for Speech Enhancement", in *proceedings of ICASSP*, 2018, pp. 5414-5418.

[1] **Ashutosh Pandey**, Rohan Kumar Das, Nagraj Adiga, Naresh Gupta and S R Mahadeva Prasanna, "Significance of Glottal Activity Detection for Speaker Verification in Degraded and Limited Data Condition", in *proceedings of TENCON*, 2015, pp. 1-6.

| **RESEARCH EXPERIENCES** | *Reserach Internship* | May 2021 - July 2021 |
| | Facebook Reality Labs, Facebook Inc., Seattle, Washington State, USA | |

     • End-to-end multichannel speech enhancement

Reserach Internship   May 2020 - July 2020

Video ASR, Facebook Inc., Menlo Park, California, USA

     • Speech enhancement for robust automatic speech recognition

Reserach Internship   May 2019 - July 2019

Siri Understanding, Apple Inc., Cupertino, California, USA

     • Acoustic modeling for automatic speech recognition

Graduate Research Associate   August 2017 - present

Perception and Neurodynamics Laboratory (PNL), The Ohio State University, Columbus, OH, USA
- Speech Enhancement
- Speech Dereverberation
- Speaker Separation

Research Engineer   June 2015 - June 2016
Aspiring Minds Assessment Pvt Limited
- Natural Language Processing
- Machine Learning

Research Intern   May 2014 - July 2014
University of Alberta, Edmonton, Alberta, Canada
- Hardware simulation of gene regulatory networks (GRNs)
- Simulink and Modelsim

B.Tech Thesis   August 2014 - April 2015
Indian Institute of Technology Guwahati, Assam, India
- Speaker verification

SKILLS&TOOLS   Python, C++, TensorFlow, PyTorch, Keras, MATLAB

AWARDS   ***Presidential Fellowship***   2021
                   The Ohio State University

SERVICES   Reviewer:
- *IEEE/ACM Transactions on Audio, Speech, and Language Processing*
- *AAAI Conference on Artificial Intelligence*