

Ashutosh Pandey

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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

PUBLICATIONS

- [13] **Ashutosh Pandey** and DeLiang Wang, “Self-attending RNN for Speech Enhancement to Improve Cross-corpus Generalization”, *arXiv:2105.12831*, 2021.
- [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

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| <p><i>Reserach Internship</i> Facebook Reality Labs, Facebook Inc., Seattle, Washington State, USA</p> <ul style="list-style-type: none"> • End-to-end multichannel speech enhancement | <p>May 2021 - July 2021</p> |
| <p><i>Reserach Internship</i> Video ASR, Facebook Inc., Menlo Park, California, USA</p> <ul style="list-style-type: none"> • Speech enhancement for robust automatic speech recognition | <p>May 2020 - July 2020</p> |
| <p><i>Reserach Internship</i> Siri Understanding, Apple Inc., Cupertino, California, USA</p> <ul style="list-style-type: none"> • Acoustic modeling for automatic speech recognition | <p>May 2019 - July 2019</p> |
| <p><i>Graduate Research Associate</i> Perception and Neurodynamics Laboratory (PNL), The Ohio State University, Columbus, OH, USA</p> <ul style="list-style-type: none"> • Speech Enhancement • Speech Dereverberation • Speaker Separation | <p>August 2017 - present</p> |
| <p><i>Research Engineer</i> Aspiring Minds Assessment Pvt Limited</p> <ul style="list-style-type: none"> • Natural Language Processing • Machine Learning | <p>June 2015 - June 2016</p> |
| <p><i>Research Intern</i> University of Alberta, Edmonton, Alberta, Canada</p> <ul style="list-style-type: none"> • Hardware simulation of gene regulatory networks (GRNs) • Simulink and Modelsim | <p>May 2014 - July 2014</p> |

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

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| SKILLS&TOOLS | Python, C++, TensorFlow, PyTorch, Keras, MATLAB |
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| AWARDS | <i>Presidential Fellowship</i> | 2021 |
| | The Ohio State University | |

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| SERVICES | Reviewer: |
| | • <i>IEEE/ACM Transactions on Audio, Speech, and Language Processing</i> |
| | • <i>AAAI Conference on Artificial Intelligence</i> |