

**Masood Delfarah**  
Ph.D. Candidate

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Tel: (614) 477-7344

**RESEARCH  
INTERESTS**

**Monaural Speech Enhancement**  
**Speech Dereverberation**  
Microphone Array Speech Processing

Automatic Speech Recognition  
Deep Learning  
Statistical Machine Learning

**EDUCATION**

**Department of Computer Science and Eng., The Ohio State University**  
**Ph.D. candidate in Computer Engineering** Fall 2013 – Present  
**M.Sc. in Computer Engineering** Fall 2013 – Spring 2018  
Supervisor: Professor DeLiang Wang

**School of Electrical and Computer Engineering, The University of Tehran**  
**B.Sc. in Computer Engineering** Fall 2008 – Spring 2013  
GPA: 16.57/20.00 (top 10%).

**PUBLICATIONS  
AND PRESEN-  
TATIONS**

*Journal papers:*

- Eric W. Healy, **Masood Delfarah**, Jordan L. Vasko, Brittney L. Carter, and DeLiang Wang, “An algorithm to increase intelligibility for hearing-impaired listeners in the presence of a competing talker” *The Journal of the Acoustical Society of America*, vol. 141, pp. 4230–4239, 2017.
- **Masood Delfarah** and DeLiang Wang, “Features for masking-based monaural speech separation in reverberant conditions” *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 25, pp. 1085–1094, 2017.
- Maryam S. Mirian, **Masood Delfarah**, and Behzad Moshiri, “Proposing a Unified Knowledge and Experience-based System using Information Fusion Approach to Facilitate the Disaster Management Process” *Disaster Management Knowledge Quarterly* (in Persian), vol. 2, pp. 215–227, 2012.

*Conference papers:*

- **Masood Delfarah** and DeLiang Wang, “A feature study for masking-based reverberant speech separation” *Proceedings of INTERSPEECH-16*, pp. 555–559, 2016.
- *(In preparation)* “Speaker-independent two-talker speech separation in reverberant conditions”.

*Selected poster presentations:*

- Eric W. Healy, **Masood Delfarah**, Jordan L. Vasko, and Brittney L. Carter, and DeLiang Wang, “Can a trained deep neural network be implemented into hearing technology?” *Acoustics '17 Boston*, 2017.
- Eric W. Healy, **Masood Delfarah**, Jordan L. Vasko, Brittney L. Carter, and DeLiang Wang, “An algorithm to increase intelligibility for hearing-impaired listeners in the presence of a competing talker” *Acoustics '17 Boston*, 2017.

**RESEARCH  
EXPERIENCE**

*Graduate Research:*

- Implemented and performed simulations in MATLAB to investigate DNN-based speech separation algorithms:

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- Studied a wide range of acoustic-phonetic features for speech separation and designed complementary feature combinations based on feature selection methods.
- Utilized parallel computation and GPUs on the Ohio Supercomputing Center for large-scale DNN and RNN training for speech separation in reverberant conditions.
- Designed experiments for speech intelligibility assessment of normal hearing and hearing-impaired listeners
- Designed a two-stage RNN algorithm to do joint dereverberation and speech denoising
- Investigated two-talker speaker identification in reverberant mixtures
- Investigated microphone array methods for dereverberation of simulated and recorded reverberant speech.
- Collaborated with lab members to implement open-set speaker separation methods, deep clustering, deep attractor networks, and permutation invariant training:
  - Utilized distributed computation over a grid of nodes and GPU servers to perform data parallelism in Tensorflow.
  - Evaluated performance of the algorithms for speech separation in reverberant conditions.
- Selected course projects:
  - Pitch-tracking and speech segmentation based on techniques in Computational auditory Scene analysis using Java
  - Augmentation of object-detection and visual question answering
  - Studying transfer learning in deep Q-learning algorithm (ongoing project)

*Undergraduate research:*

- **(B.Sc. Thesis)** Designing and implementing a learning style classifier for toddlers, based on cognitive traits of children and Information Processing Theories on the ELCK-12 dataset.
- Proposing a knowledge-base for disaster management
- Analyzed Persian Blogosphere to Obtain Social Network of Iranian Politicians and visualizing and graph clustering using *Gephi*.

**PROFESSIONAL** *Reviewer:*  
**EXPERIENCE**

- IEEE/ACM Transactions on Audio, Speech, and Language Processing
- Speech Communication

*Graduate Teaching Assistant, The Ohio State University:*

- Modeling and Problem Solving with Spreadsheets and Databases Spring 2017
- Modeling and Problem Solving with Spreadsheets and Databases Spring 2014
- Foundations I: Discrete Structures Fall 2013

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*Undergraduate Teaching Assistant, The University of Tehran:*

- Design and Analysis of Algorithms Spring 2012
- Discrete Mathematics Course Spring 2012
- Artificial intelligence Fall 2011

**COMPUTER  
SKILLS**

**Proficient in C/C++**, and experienced in MATLAB, Python, Java, and Unix Bash script  
Machine learning toolboxes: **Tensorflow**, Caffe, HTK, pyTorch, and MXNet  
Other skills: Git, and  $\text{\LaTeX}$