

Shaoguang Mao

Tsinghua University, Haidian District, Beijing, P. R. China

Tsinghua University, Master Degree

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Educational Background

2016 - present

Department of Computer Science & Technology, Tsinghua University

Master of Computer Science candidate (Expected July, 2019)

China National Scholarship Recipient (Top 0.2%), 2018

2012 - 2016

Department of Computer Science & Technology, Beijing Normal University

Bachelor of Computer Science (Average: 92.2/100 Ranking: 1/59)

China National Scholarship Recipient (Top 0.2%), 2014

Research Experiences

Intern, Speech Group, Microsoft Research Asia. (Advisor: Prof. Frank Soong),

Feb.,2018 – Nov.,2018

Detailed achievements:

- Built an automatic fluency scoring system for language proficiency assessment which outperformed human expert labelers in accuracy and consistency;
- Built an automatic mean opinion score (MOS) prediction for naturalness evaluation of synthesized speech;
- Addressed scoring problem in an ordinal regression framework and proposed a novel approach for ordinal regression problems with the assistance of anchored reference samples;

Research Assistant, Human-Computer Communications Laboratory, Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong. (Advisor: Prof. Helen Meng),

Nov.,2017 – Feb.,2018,

Detailed achievements:

- Proposed an improved acoustic-phonemic model with multitask learning techniques for mispronunciation detection and diagnosis (MDD);
 - Proposed and contrasted different approaches to utilizing articulatory features in MDD;
 - The proposed approaches improved the F1-Measure of MDD to 81.3% from 75.7%;
 - This work was presented in the keynote given by Prof. Helen Meng in *INTERSPEECH 2018*.
- * Try our MDD demo: https://enunciate2.se.cuhk.edu.hk/static/colossus/pages/free_practice.html

Research Assistant, Human-Computer Communications Laboratory, Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong. (Advisor: Prof. Helen Meng),

July.,2017 – Sept.,2017,

Detailed achievements:

- Designed an unsupervised framework to cluster non-categorical pronunciation units in English as a second language (ESL) learners' speech;
- Discovered an extended phoneme set (including categorical and non-categorical pronunciation units) for MDD.

Intern, Human Computer Speech Interaction Laboratory, Department of Computer Science & Technology, Tsinghua University. (Advisor: Prof. Zhiyong Wu & Prof. Mingxing Xu),

July.,2015 – Aug.,2016,

Detailed achievements:

- Constructed an automatic broadcasting rating system with the assistance of automatic speech recognition and prosody features.
- This system was installed for Tianjin Airline to evaluate flight attendants' broadcasting level.

Academic Publications

First Author:

Mao S, Wu Z, Meng H, et al. “*Applying multitask learning to acoustic-phonemic model for mispronunciation detection and diagnosis in L2 English speech*”, in the Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 6254-6258. Calgary, Canada, 15-20 April, 2018.

Mao S, Li X, Meng H, et al. “*Unsupervised discovery of an extended phoneme set in L2 English speech for mispronunciation detection and diagnosis*”, in the Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 6254-6258. Calgary, Canada, 15-20 April, 2018.

Mao S, Wu Z, Meng H, et al. “*Integrating articulatory features into acoustic-phonemic model for mispronunciation detection and diagnosis in L2 English speech*”, in the Proceedings of the IEEE International Conference on Multimedia and Expo (ICME), pp. 1-6. San Diego, USA, 23-27 July, 2018.

Co-author:

Li K, **Mao S**, Meng H, et al. “*Automatic lexical stress and pitch accent detection for L2 English speech using multi-distribution deep neural networks*”, *Speech Communication*, 2018, 96: 28-36.

Li X, **Mao S**, Meng H, et al. “*Unsupervised Discovery of Non-native Pronunciation Patterns in L2 English Speech for Mispronunciation Detection and Diagnosis*”, in the Proceedings of the Annual Conference of the International Speech Communication Association (INTERSPEECH), Hyderabad, India, 2-6 September, 2018.

Under Review:

Mao S, Wu Z, Soong F K, et al. “*NN-based ordinal regression for assessing fluency of ESL speech*”, in the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2019).

Major Honors

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| Nation | Sept.,2018 | China National Scholarship (Top 0.2%) |
| | Dec.,2015 | Merit student of Beijing (Top 0.1%) |
| | June.,2015 | Google Excellent Scholarship (58 students in China Mainland) |
| | Dec.,2014 | Huawei Scholarship (Top 1%) |
| School | Nov.,2014 | China National Scholarship (Top 0.2%) |
| | June.,2016 | Outstanding Undergraduate Thesis Award (Top 10%) |
| | Nov.,2014 | Merit student of Beijing Normal University (Top 8%) |
| | Dec.,2013 | Professional Scholarship (Top 10%) |

Competition Awards

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| Apr.,2018 | Microsoft Research Asia 2018 Student TechFest | Most Impactful Award |
| Dec.,2015 | Sixth World Mandarin Debating Championship, Beijing Division | Runner-up |
| Apr.,2015 | Mathematical Contest in Modeling, 2015 | Honorable Mention |
| Dec.,2014 | China Undergraduate Mathematical Contest in Modeling, 2014 | Second Prize |

Extracurricular Activities

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| Dec.,2018 - Dec.,2018 | Organizing Committee , 2018 International Doctoral Forum, Shenzhen, China |
| Sept.,2013 - June.,2016 | Member , The School Debate Team of Beijing Normal Univ. |
| Oct.,2015 - Nov.,2015 | Volunteer Teacher , International Volunteer Teaching Program, Bali, Indonesia |
| July.,2014 - Aug.,2014 | Volunteer , The Survey of Network Use, Sichuan Province, China |
| Sept.,2014 - June.2014 | Head , The Debate Team of the Department of Computer Science, Beijing Normal Univ. |
| July.,2013 - Aug.,2013 | Volunteer Teacher , Volunteer Teaching Program, Hunan Province, China |

Skills

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|----------------|---|--------|----------------------|-------|--------|
| Programming: | C++ | Python | Java | Shell | Matlab |
| Language: | Chinese (Native) | | English (TOEFL: 107) | | |
| Standard Test: | GRE General test (Verbal:153 + Quantitative:170 + Analytical Writing:3.5) | | | | |