Shaoguang Mao

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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, 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).

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.

Major Honors

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%)
	Nov.,2014	China National Scholarship (Top 0.2%)
School	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

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

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

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)