Qing Wang

Personal Information

Gender: Female
Birthplace: Shijiazhang, Hebei
Date of Birth: 24 November 1989
Education: Ph.D.
Affiliation: University of Science and Technology of China (USTC)
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Work and Education Experience

March 2023 - Present	Associate Researcher, USTC
March 2020 - February 2023	Postdoctoral Researcher, USTC
July 2018 - February 2020	Researcher, Tencent Technology (Shenzhen) Co., Ltd.
July 2012 - June 2018	Graduate Student, USTC
September 2008 - June 2012	Bachelor's degree in Electronic Information Engineering, USTC

Research Interests

Audio Signal Processing:	Sound event localization and detection, audio scene classification
Speech Signal Processing:	Speech enhancement, robust speech recognition, voice activity detection
Multimodal Signal Processing:	Audio-visual scene classification, audio-visual source localization, multimodal mathematical geometry question answering

Publications

[1] **Q. Wang**, J. Du, H. -X. Wu, J. Pan, F. Ma and C. -H. Lee, A Four-Stage Data Augmentation Approach to ResNet-Conformer Based Acoustic Modeling for Sound Event Localization and Detection, *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 31, pp. 1251-1264, 2023

[2] **Q. Wang**, J. Du, L. -R. Dai and C. -H. Lee, A Multiobjective Learning and Ensembling Approach to High-Performance Speech Enhancement With Compact Neural Network Architectures, *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 26, no. 7, pp. 1185-1197, 2018

[3] **Q. Wang**, J, Du, Z. -X. Nian, S. -T. Niu, L. Chai, H. -X. Wu, J. Pan and C. -H. Lee, Loss Function Design for DNN-Based Sound Event Localization and Detection on Low-Resource Realistic Data, in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1-5, 2023

[4] **Q. Wang**, J. Du, X. Bao, Z.-R. Wang, L. -R. Dai and C. -H. Lee, A Universal VAD Based on Jointly Trained Deep Neural Networks, in *INTERSPEECH*, pp. 2282-2286, 2015

[5] J. Du, **Q. Wang**, T. Gao, Y. Xu, L. -R. Dai and C. -H. Lee, Robust Speech Recognition with Speech Enhanced Deep Neural Networks, in *INTERSPEECH*, pp.616-620, 2014

[6] S. Cheng, J. Du, **Q. Wang***, Y. Jiang, Z. -X. Nian, S. -T. Niu, C. -H. Lee, Y. Gao and W. Zhang, Improving Sound Event Localization and Detection with Class-Dependent Sound Separation for Real-World

Scenarios, Accepted by *Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, 2023

[7] **Q. Wang**, H. Chen, Y. Jiang, Z. Wang, Y. Wang, J. Du and C. -H. Lee, Deep Learning Based Audio-Visual Multi-Speaker DOA Estimation Using Permutation-Free Loss Function, in *International Symposium on Chinese Spoken Language Processing (ISCSLP)*, pp. 250-254, 2022

[8] **Q. Wang**, J. Du, S. Zheng, Y. Li, Y. Wang, Y. Wu, H. Hu, C. -H. H. Yang, S. -M. Siniscalchi, Y. -N. Wang and C. -H. Lee, A Study on Joint Modeling and Data Augmentation of Multi-Modalities for Audio-Visual Scene Classification, in *International Symposium on Chinese Spoken Language Processing (ISCSLP),* pp. 453-457, 2022

[9] **Q. Wang**, H. -X. Wu, Z. Jing, F. Ma, Y. Fang, Y. Wang, T. Chen, J. Pan, J. Du and C. -H. Lee, A Model Ensemble Approach for Sound Event Localization and Detection, in *International Symposium on Chinese Spoken Language Processing (ISCSLP)*, pp. 1-5, 2021

[10] **Q. Wang**, J. Du, L. Chai, L. -R. Dai and C. -H. Lee, A Maximum Likelihood Approach to Masking-based Speech Enhancement Using Deep Neural Network, in *International Symposium on Chinese Spoken Language Processing (ISCSLP)*, pp. 295-299, 2018

[11] **Q. Wang**, J. Du, L. -R. Dai and C. -H. Lee, Joint Noise and Mask Aware Training for DNN-based Speech Enhancement with SUB-band Features, in *Hands-free Speech Communications and Microphone Arrays (HSCMA)*, pp. 101-105, 2017

[12] **Q. Wang**, J. Du and L. -R. Dai, Boosting DNN-based Speech Enhancement via Explicit Transformations, in *Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, pp. 1-4, 2016

[13] J. Du, **Q. Wan**g, Y. -H. Tu, X. Bao, L. -R. Dai and C. -H. Lee, An Information Fusion Approach to Recognizing Microphone Array Speech in the CHiME-3 Challenge Based on a Deep Learning Framework, in *Workshop on Automatic Speech Recognition and Understanding (ASRU)*, pp. 430-435, 2015

[14] S. Cheng, J. Du, S. -T. Niu, A. Cristia, X. Wang, **Q. Wang** and Chin-Hui Lee, Using Iterative Adaptation and Dynamic Mask for Child Speech Extraction Under Real-world Multilingual Conditions, *Speech Communication*, vol. 152, pp. 102956, 2023

[15] S. -T. Niu, J. Du, **Q. Wang**, L. Chai, H. -X. Wu, Z. -X. Nian, L. Sun, Y. Fang, J. Pan and C. -H. Lee, An Experimental Study on Sound Event Localization and Detection Under Realistic Testing Conditions, in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1-5, 2023

[16] H. Yan, H. Xu, **Q. Wang** and J. Zhang, The NERCSLIP-USTC System for the L3DAS23 Challenge Task2: 3D Sound Event Localization and Detection (SELD), in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1-2, 2023

[17] Y. Jiang, H. Chen, J. Du, **Q. Wang** and C. -H. Lee, Incorporating Lip Features into Audio-Visual Multi-Speaker DOA Estimation by Gated Fusion, in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1-5, 2023

[18] Y. Wang, J. Du, H. Chen, Q. Wang and C. -H. Lee, Deep Segment Model for Acoustic Scene Classification, in *INTERSPEECH*, pp. 4177-4181, 2022

[19] H. Zhou, J. Du, Y. Zhang, **Q. Wang**, Q. -F. Liu and C. -H. Lee, Information Fusion in Attention Networks Using Adaptive and Multi-Level Factorized Bilinear Pooling for Audio-Visual Emotion Recognition, *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 29, pp. 2617-2629, 2021

[20] K. Oostermeijer, J. Du, **Q. Wang** and C. -H. Lee, Speech Enhancement Autoencoder with Hierarchical Latent Structure, in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 671-675, 2021

[21] C. Wu, **Q. Wang**, J. Zhang, J. Du, J. Wang, J. Wu and J. Hu, Stroke Based Posterior Attention for Online Handwritten Mathematical Expression Recognition, in *International Conference on Pattern Recognition (ICPR)*, pp. 2943-2949, 2021

[22] C. Yang, **Q. Wang**, J. Du, J. Zhang, C. Wu and J. Wang, A Transformer-based Radical Analysis Network for Chinese Character Recognition, in *International Conference on Pattern Recognition (ICPR)*, pp. 3714-3719, 2021

[23] K. Oostermeijer, **Q. Wang** and J. Du, Lightweight Causal Transformer with Local Self-Attention for Real-Time Speech Enhancement, in *INTERSPEECH*, pp. 2831-2835, 2021

[24] J. Wang, **Q. Wang**, J. Du, J. Zhang, B. Wang and B. Ren, MRD: A Memory Relation Decoder for Online Handwritten Mathematical Expression Recognition, in *International Conference on Document Analysis and Recognition (ICDAR)*, pp. 39-54, 2021

[25] K. Oostermeijer, **Q. Wang** and J. Du, Frequency Gating: Improved Convolutional Neural Networks for Speech Enhancement in the Time-Frequency Domain, in *Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, pp. 465-470, 2020

[26] X. Tang, J. Du, L. Chai, Y. Wang, **Q. Wang** and C. -H. Lee, Geometry Constrained Progressive Learning for LSTM-Based Speech Enhancement, in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 7514-7518, 2020

[27] X. Tang, J. Du, L. Chai, Y. Wang, **Q. Wang** and C. -H. Lee, A LSTM-Based Joint Progressive Learning Framework for Simultaneous Speech Dereverberation and Denoising, in *Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, pp. 274-278, 2019

[28] Y.-H. Tu, J. Du, **Q. Wang**, X. Bao, L.-R. Dai and C.-H. Lee, An Information Fusion Framework with Multi-channel Feature Concatenation and Multi-perspective System Combination for the Deep-learning-based Robust Recognition of Microphone Array Speech, *Computer Speech and Language*, vol. 46, pp. 517-534, 2017

Awards and Honors

2023 Champion of the audio and audio-visual tracks for sound event localization and detection task in the DCASE Challenge

2022 Champion of the sound event localization and detection task in the DCASE Challenge

2021 Second Place of the audio and audio-visual tracks for acoustic scene classification in the DCASE Challenge

2020 Champion of the sound event localization and detection task in the DCASE Challenge

2018 Excellent Lecturer at Tencent Technology (Shenzhen) Co., Ltd.

2016 Guanghua Scholarship at USTC

2015 Third Place in the CHiME-3 Challenge

2015 Best Student Paper Candidate at INTERSPEECH

2011 Excellent Student Scholarship at USTC

Academic Services

IEEE/CCF Member， Member of the CCF Speech Dialogue and Auditory Special Committee

Reviewer for international journals and conferences, including IEEE/ACM TASLP, ICASSP, ISCSLP