

MENG GE

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Education Background

Tianjin University (TJU), Tianjin, China	09/2017 - 11/2022
Ph.D. in Applied Computer Technology	Supervisor: Longbiao Wang
Tianjin University (TJU), Tianjin, China	09/2015 - 06/2017
M.E. in Software Engineering	Supervisor: Di Jin & Liang Yang
Tianjin Polytechnic University (TJPU), Tianjin, China	09/2011 - 06/2015
B.E. in Software Engineering	GPA: 90.33/100
B.S. in Public Management (double major)	Ranking: Top3

Publications

- Meng Ge, Chenglin Xu, Longbiao Wang, Eng Siong Chng, Jianwu Dang, Haizhou Li, "L-SpEx: Localized Target Speaker Extraction", in Proc. ICASSP, May. 2022.
- Zexu Pan, Meng Ge, Haizhou Li, "USEV: Universal Speaker Extraction with Visual Cue", IEEE/ACM Transactions on Audio, Speech, and Language Processing (TASLP), 2022, 30: 3032-3045.
- Di Jin, Rui Wang, Meng Ge, Dongxiao He, Xiang Li, Wei Lin, Weixiong Zhang, "RAW-GNN: Random Walk Aggregation based Graph Neural Network", in Proc. IJCAI, July. 2022.
- Junjie Li, Meng Ge, Zexu Pan, Longbiao Wang, Jianwu Dang, "VCSE: Time-Domain Visual-Contextual Speaker Extraction Network", in Proc. INTERSPEECH, Sep. 2022.
- Haoran Yin, Meng Ge, Yanjie Fu, Gaoyan Zhang, Longbiao Wang, Lei Zhang, Lin Qiu, Jianwu Dang, "MIMO-DoAnet: Multi-channel Input and Multiple Outputs DoA Network with Unknown Number of Sound Sources", in Proc. INTERSPEECH, Sep. 2022.
- Yanjie Fu, Meng Ge, Haoran Yin, Xinyuan Qian, Longbiao Wang, Gaoyan Zhang, Jianwu Dang, "Iterative Sound Source Localization for Unknown Number of Sources", in Proc. INTERSPEECH, Sep. 2022.
- Zexu Pan, Meng Ge, Haizhou Li, "A Hybrid Continuity Loss to Reduce Over-Suppression for Time-domain Target Speaker Extraction", in Proc. INTERSPEECH, Sep. 2022.
- Nan Li, Meng Ge, Longbiao Wang, Masashi Unoki, Sheng Li, Jianwu Dang, "Global Signal-to-noise Ratio Estimation Based on Multi-subband Processing Using Convolutional Neural Network", in Proc. INTERSPEECH, Sep. 2022.
- Nan Li, Meng Ge, Longbiao Wang, Jianwu Dang, "Dual-stream Speech Dereverberation Network Using Long-term and Short-term Cues", in Proc. IJCNN, July. 2022.
- Yongjie Lv, Longbiao Wang, Meng Ge, Sheng Li, Chenchen Ding, Lixin Pan, Yuguang Wang, Jianwu Dang, Kiyoshi Honda, "Compressing Transformer-Based ASR Model by Task-Driven Loss and Attention-Based Multi-Level Feature Distillation", in Proc. ICASSP, May. 2022.
- Tongtong Song, Qiang Xu, Meng Ge, Longbiao Wang, Hao Shi, Yongjie Lv, Yuqin Lin, Jianwu Dang, "Language-specific Characteristic Assistance for Code-switching Speech Recognition", in Proc. INTERSPEECH, Sep. 2022.
- Qiang Xu, Tongtong Song, Longbiao Wang, Hao Shi, Yuqin Lin, Yongjie Lv, Meng Ge, Qiang Yu, Jianwu Dang, "Self-Distillation Based on High-level Information Supervision for Compressing End-to-End ASR Model", in Proc. INTERSPEECH, Sep. 2022.
- Haoran Yin, Hao Shi, Longbiao Wang, Luya Qiang, Sheng Li, Meng Ge, Gaoyan Zhang, Jianwu Dang, "Simultaneous Progressive Filtering-Based Monaural Speech Enhancement", in Proc. ICONIP, Sep. 2021.
- Luya Qiang, Hao Shi, Meng Ge, Haoran Yin, Nan Li, Longbiao Wang, Sheng Li, Jianwu Dang, "Speech Dereverberation Based on Scale-Aware Mean Square Error Loss", in Proc. ICONIP, Sep. 2021.
- Nan Li, Longbiao Wang, Masashi Unoki, Sheng Li, Rui Wang, Meng Ge, Jianwu Dang, "Robust Voice Activity Detection Using a Masked Auditory Encoder Based Convolutional Neural Network", in Proc. ICASSP, April. 2021.
- Meng Ge, Chenglin Xu, Longbiao Wang, Eng Siong Chng, Jianwu Dang, Haizhou Li, "Multi-stage speaker extraction with utterance and frame-level reference signals", in Proc. ICASSP, April. 2021.
- Meng Ge, Ruixiong Zhang, Wei Zou, Xiangang Li, Cheng Gong, Longbiao Wang, Jianwu Dang, "Order-aware Pairwise Intoxication Detection", in Proc. ISCSLP, Jan. 2021.
- Wupeng Wang, Chenglin Xu, Meng Ge, Haizhou Li, "Neural Speaker Extraction with Speaker-Speech Cross-Attention Network", in Proc. INTERSPEECH, Sep. 2021.

- Yu Jiang, Meng Ge, Longbiao Wang, Jianwu Dang, Kiyoshi Honda, Sulin Zhang, Bo Yu, "A pitch-aware speaker extraction serial network", in Proc. APASIP, Dec. 2020.
- Meng Ge, Chenglin Xu, Longbiao Wang, Eng Siong Chng, Jianwu Dang, Haizhou Li, "SpEx+: A Complete Time Domain Speaker Extraction Network", in Proc. ISCA Interspeech, Oct. 2020.
- Hao Shi, Longbiao Wang, Sheng Li, Chenchen Ding, Meng Ge, Nan Li, Jianwu Dang, Hiroshi Seki, "Singing Voice Extraction with Attention based Spectrograms Fusion", in Proc. ISCA Interspeech, Oct. 2020, Accepted.
- Hao Shi, Longbiao Wang, Meng Ge, Sheng Li, Jianwu Dang, "Spectrograms Fusion with Minimum Difference Masks Estimation for Monaural Speech Dereverberation", in Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), May. 2020.
- Nan Li, Meng Ge, Longbiao Wang, Jianwu Dang, "A Fast Convolutional Self-attention Based Speech Dereverberation Method for Robust Speech Recognition", in Proc. ICONIP, Dec. 2019.
- Meng Ge, Longbiao Wang, Nan Li, Hao Shi, Jianwu Dang, Xiangang Li, "Environment-dependent Attention-driven Recurrent Convolutional NeuralNetwork for Robust Speech Enhancement", in Proc. ISCA Interspeech, Sep. 2019.
- Meng Ge, Longbiao Wang, Seiichi Nakagawa, Yuta Kawakami, Jianwu Dang, Xiangang Li, "Pitch Synchronized Relative Phase with Peak Error Detection For Noise-robust Speaker Recognition", in Proc. ISCSLP, Nov. 2018.
- Dongbo Li, Longbiao Wang, Jianwu Dang, Meng Ge, Haotian Guan, "Distant-talking Speech Recognition Based on Multi-objective Learning Using Phase and Magnitude-based Feature", in Proc. ISCSLP, Nov. 2018.
- Di Jin, Meng Ge, Liang Yang, Dongxiao He, Longbiao Wang, Weixiong Zhang, "Integrative Network Embedding via Deep Joint Reconstruction", in Proc. IJCAI, July. 2018.
- Di Jin, Meng Ge, Zhixuan Li, Wenhuan Lu, Dongxiao He, Francoise Fogelman-Soulie, "Using Deep Learning for Community Discovery in Social Networks", in Proc. ICTAI, Nov. 2017.
- Liang Yang, Meng Ge, Di Jin, Dongxiao He, Huazhu Fu, Jing Wang, Xiaochun Cao, "Exploring the Roles of Cannot-link Constraint in Community Detection via Multi-variance Mixed Gaussian Generative Model", in PloS One, July. 2017.

Research Experiences

Research Assistant, The Chinese University of Hong Kong (CUHKSZ), China 04/2022 - Now
Research on Speech Separation, Speaker Diarization and Speech Recognition in Multi-talker Conditions

- **Research Purpose:** To extract desired speech signal from background interference in multi-talker conditions, and to do the downstreaming application, including speaker diarization and speech recognition.
- Joint training speech separation and speaker diarization; Pretraining model for multi-speaker speech recognition.

Research Assistant, National University of Singapore (NUS), Singapore 04/2020 - 04/2022
Research on Target Speech Separation and Extraction via Deep Learning in Multi-talker Conditions

- **Research Purpose:** To separate target speech signal from background interference in multi-talker conditions, and to improve the quality and intelligibility of target speech signal for speech applications.
- Proposed a complete time-domain speaker extraction approach to extract target speech signal, named SpEx+
- Extended the time-domain speaker extraction approach into overlapped multi-talker speaker verification task

Research Assistant, Nanyang Technological University (NTU), Singapore 10/2019 - 04/2020
Research on Speech Enhancement and Separation for Speech Recognition

- **Research Purpose:** To depress the background interference in low-SNR conditions, and to reconstruct high-quality target speech signal for improving speech recognition performance.
- Formulation and implementation of speech enhancement systems for RAST and VB datasets in MASION project
- Researched on multi-channel speech separation using frequency-based speaker extraction and MVDR beamforming
- Built a complete speech enhancement repository in <https://github.com/nanahou/Awesome-Speech-Enhancement>
- Summarized a speech separation repository in https://github.com/gemengtju/Tutorial_Separation

Machine Learning Engineer, AI Lab of Didi Chuxing Company (DiDi), Beijing, China 09/2018 - 05/2019
Research on Speech Separation and Drunk Detection in Car Environment

- **Research Purpose:** 1) To reduce noise and separate speech recordings in car for helping customer service staff better understand user intent; 2) To reduce in-car conflict probability using intoxication detection based on speech.
- Simulated training datasets using clean speech recordings, recorded car environment and synthetic audios
- Used the frequency-based PIT method to extracted target speech based on simulated dataset and real recordings
- Proposed a novel order-aware pairwise intoxication detection approach to detect the speaker state of passengers before order acceptance using speech recordings.

Work Experiences

Co-Funder & Senior Software Engineer, Tianjin Chuanhe Technology Co., Ltd. 03/2014 - 06/2015

- Received an angel investment of 500,000 yuan in 2014, and built a excellent team with 20 members

- Designed and implemented a Logistics Management System using Struts, Spring and ibatis (SSI framework); MySQL is used as database of this system and Redis is adopted as data cache tool to speed up data loading
- Developed a corresponding Android app for fresh food reservation and delivery based on SSI back-end framework

Software Engineer & Team Leader, iSoftStone (Tianjin) Information Technology Group Co, Ltd. 01/2014 - 07/2014

- Originated the team to implement the Provident Fund Management (PFM) System and Office Automation (OA) System using Struts, Spring and Hibernate (SSH framework); Oracle is adopted as main dataset of these systems
- JAVA Business Process Management (JBPM) is utilized into OA system to customize the office process

Software Engineer & Team Leader, IBM (Tianjin) Experienced Training Program 06/2013 - 07/2013

- Designed and developed the School Educational Administration (SEA) System based on MVC design pattern
- Focus on the development of the SEA system's visual statistics module using ECharts visualization library

Leadership & Volunteer Experiences

- *As the reviewers of TASLP and ICASSP 2023*
- *Foreign-Side Volunteer, The 12th Summer Davos Forum*
- *Volunteer, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'2022)*
- *Conference Volunteer, IEEE Automatic Speech Recognition and Understanding Workshop (ASRU'2019)*
- *Conference Volunteer, The National Conference on Man-Machine Speech Communication (NCMMSC'19)*
- *Volunteer Leader, The 11th International Seminar on Speech Production (ISSP'17)*
- *Conference Volunteer, The 10th International Symposium on Chinese Spoken Language Processing (ISCSLP'16)*
- *Vice Minister, Graduate Student Union, Tianjin University (TJU)*
- *Vice Minister, Lenovo Idea Elite Club, Tianjin Polytechnic University (TJPU)*
- *Captain, Volleyball Team, Tianjin Polytechnic University (TJPU)*

Certifications & Awards

- *Benduo Qingzhi Advanced Speech Science Award,* Tianjin University
- *ISCA Grant Award of INTERSPEECH'2019,* INTERSPEECH2019
- *Oracle Certified Professional (OCP) - Oracle 10g Database Administrator,* Oracle
- *Oracle Database 10g Administrator Certified Associate (OCA),* Oracle
- *Outstanding Student Scholarship Award,* Tianjin University
- *First-Class Scholarship Award,* Tianjin University
- *Outstanding Youth Nomination Award,* Tianjin University
- *Outstanding Graduate Student Award,* Tianjin Polytechnic University