LIMING SHI

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PERSONAL INFORMATION

Place & Date of Birth	August 11 1989, Henan, China
Nationality	Chinese

EDUCATION

Feb. 2022– Now Communication and Information Engineering Department, CQUPT

Feb. 2021– Now Industrial Postdoc in Aalborg University with Prof. Mads Græsbøll Christensen and Huawei

Feb. 2020 – Feb. 2021 Industrial Postdoc in Acezone Aps, Denmark

June. 2019 – Feb. 2020 Research assistant in Aalborg University with Prof. Mads Græsbøll Christensen

May. 2018 – Jun. 2018, Sep. 2018 – Oct. 2018 Visiting student in University of Cambridge with Prof. Simon Godsill

Jul. 2018 – Sep. 2018 Visiting student in Aalto University with Prof. Paavo Alku

Jun. 2016 – Jun. 2019 Ph.D. Fellow at Dept. of Architecture, Design & Media Technology in Aalborg University, Denmark
Research area: Robust Speech Modeling Estimation and Processing for Diagnosis of Parkinson Disease
Supervisor: Prof. Mads Græsbøll Christensen
Co-supervisor: Assoc. Prof. Jesper Rindom Jensen

Jul. 2015 – May 2016 Assistant in Chongqing University of Posts and Telecommunications
Research area: Speech enhancement and blind source separation

Sep. 2012 – Jun. 2015 Master degree at Dept. of Information and Communication Engineering in Chongqing University of Posts and Telecommunications
Research area: Adaptive filtering
GPA Rank: First out of 450 peer students.

Sep. 2008 – Jun. 2012 Bachelor degree in Henan University of Technology, China
GPA Rank: Top 1 % out of 360 peer students

RESEARCH EXPERIENCES AND COMMUNITY CONTRIBUTIONS

Aug. 2021 J. R. Jensen, M. G. Christensen, **L. Shi**, "Multichannel Audio Processing from a Model-based Perspective", Tutorial in EUSIPCO 2021, `https://eusipco2021.org/tutorials/`

Feb. 2021 – Feb. 2022 Postdoc Research with Huawei

- Sound zone generation
  The goals of this research is to design algorithms used for sound zone generation.

Feb. 2020 – Feb. 2021 Postdoc Research with Acezone ApS, Denmark

- Realtime speech enhancement algorithm for headset
  The goal of this research is to develop realtime speech enhancement algorithms for removing the background sound signal picked up by the mouth microphone.

June. 2016 – Jun. 2019 Ph.D. Research

- Speech Modeling and Robust Estimation for Diagnosis of Parkinson's Disease
  The goals of this research are to develop statistics and optimization-based approaches for processing and analysing dynamical speech signals, and subsequently to formulate better and physiological meaningful feature vector for Parkinson's Disease detection.

Jul. 2015 – May 2016 Research Assistant

- Microphone Array Speech Enhancement and Blind source separation
  The objective is to improve the speech quality and intelligibility. The task is to formulate the MIMO observation model from statistical perspective and incorporate of prior beliefs on sources and mixing process. The techniques related to this research are Bayesian clustering, variational Bayesian, numerical sampling etc.

Sep. 2012 – Jun. 2015 Postgraduate Research

- Adaptive Filtering
  The objective is to improve the tracking and robust performance of adaptive algorithms, which can be used in various applications such as system identification, acoustic echo cancellation, adaptive network etc. My topics focus on improving the robust performance against impulsive interference using robust statistics.

PUBLICATIONS

[1] **L. Shi**, T. Lee, L. Zhang, J. K. Nielsen, and M. G. Christensen, "Generation of personal sound zones with physical meaningful constraints and conjugate gradient method," *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 29, pp. 823–837, 2021.

[2] T. Lee, **L. Shi**, J. K. Nielsen, and M. G. Christensen, "Fast generation of sound zones using variable span trade-off filters in the dft-domain," *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 29, pp. 363–378, 2021.

[3] A. H. Poojam, M. S. Kavalekalam, **L. Shi**, J. P. Raykov, J. R. Jensen, M. A. Little and M. G. Christensen, "Automatic quality control and enhancement for voice-based remote Parkinson's disease detection ," *Speech Communication*, vol. 127, pp. 1–16, 2021.

[4] Z. Bai, **L. Shi**, J. R. Jensen, and M. G. Christensen, "Acoustic DOA estimation using space alternating sparse Bayesian learning," *EURASIP Journal on Audio, Speech, and Music Processing*, vol. 1, pp. 1–19, 2021.

[5] **L. Shi**, J. K. Nielsen, J. R. Jensen, M. A. Little, and M. G. Christensen, "Robust Bayesian pitch tracking based on the harmonic Model," *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 27, no. 11, pp. 1737–1751, 2019.

[6] **L. Shi** and Y. Lin, "Convex combination of adaptive filters under the maximum correntropy criterion in impulsive interference," *IEEE Signal Processing Letters*, vol. 21, no. 11, pp. 1385–1388, 2014.

[7] **L. Shi**, Y. Lin, and X. Xie, "Combination of affine projection sign algorithms for robust adaptive filtering in non-gaussian impulsive interference," *Electronics Letters*, vol. 50, no. 6, pp. 466–467, 2014.

[8] Y. Xiang, **L. Shi**, J. L. Højvang, M. H. Rasmussen, and M. G. Christensen, "A Novel NMF-HMM Speech Enhancement Algorithm Based on Poisson Mixture Model," in *2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2021.

[9] Y. Xiang, **L. Shi**, J. L. Højvang, M. H. Rasmussen, and M. G. Christensen, "An NMF-HMM speech enhancement method based on kullback-leibler divergence," in *INTERSPEECH*, 2020.

[10] **L. Shi**, J. R. Jensen, J. K. Nielsen, and M. G. Christensen, "A fast reduced-rank sound zone control algorithm using the conjugate gradient method," in *2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2020.

[11] **L. Shi**, J. R. Jensen, J. K. Nielsen, and M. G. Christensen, "Multipitch estimation using block sparse Bayesian learning and intra-Block clustering," in *2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, April 2018.

[12] M. S. Kavalekalam, J. K. Nielsen, **L. Shi**, and M. G. Christensen, "Online parametric nmf for speech enhancement," in *European Signal Processing Conference (EUSIPCO)*, September 2018.

[13] **L. Shi**, J. K. Nielsen, J. R. Jensen, M. A. Little, and M. G. Christensen, "A Kalman-based fundamental frequency estimation algorithm," in *2017 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA 2017)*, October 2017.

[14] **L. Shi**, J. K. Nielsen, J. R. Jensen, and M. G. Christensen, "A variational EM method for pole-zero modeling of speech with mixed block sparse and gaussian excitation," in *European Signal Processing Conference (EUSIPCO)*, September 2017.

[15] **L. Shi**, J. R. Jensen, and M. G. Christensen, "Least 1-norm pole-zero modeling with sparse deconvolution for speech analysis," in *2017 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, March 2017, pp. 731–735.

Scholarships and Awards

March 2018	EliteForsk travel grant from the Ministry of Higher Education and Science
May 2015	Outstanding Graduate award in Chongqing
Dec. 2014	National Postgraduate Scholarship (Top 1%)
Oct. 2014	Gongjin Corporation Scholarship (Top 1%)
	Excellent Graduate Award
Oct. 2013	Yulong Kupai Corporation Scholarship (Top 1%)
Sep. 2013	Excellent Postgraduate Award
May 2012	Outstanding Graduate Award
Oct. 2011	National Undergraduate Scholarship (Top 1%)

Technical Skills

Development Skills:	C, Python, MATLAB, LaTeX.
Application Skills:	Experience in speech analysis, speech dereverberation, sound zone generation, sparse Bayesian learning, multichannel speech enhancement, adaptive filtering etc.
Language:	Mandarian (First language), English (Second language), CET-6: 598/710, TOEFL: 100/120.