# Li Li

Toda Lab, Information Technology Center, Nagoya University
Furo-cho, Chikusa-ku, Nagoya, 4648601, Japan

☎ +81 52-789-4346 | ✉ lili-0805@ieee.org | ⌂ https://lili-0805.github.io/

## RESEARCH INTERESTS

Audio signal processing, source separation, machine learning, speech analysis

## EDUCATION

| | |
|---|---|
| MAR. 2021 | Ph.D. degree in Engineering, Department of Computer Science, Graduate School of Systems and Information Engineering, University of Tsukuba, Japan. |
| | Topic: Determined multichannel source separation based on signal independence |
| | Advisors: Prof. Shoji Makino and Dr. Hirokazu Kameoka |
| MAR. 2018 | M.S. degree in Engineering, Department of Computer Science, Graduate School of Systems and Information Engineering, University of Tsukuba, Japan. |
| | Topic: Monaural speech enhancement with non-negative matrix factorization |
| | Advisors: Prof. Shoji Makino and Dr. Hirokazu Kameoka |
| JULY 2014 | B.E. degree in Engineering, Department of Information Management and Engineering, Shanghai University of Finance and Economics, China. |

## RESEARCH & WORK EXPERIENCES

| | |
|---|---|
| APR. 2021-CURRENT | Postdoctoral researcher at Toda Lab, Nagoya University, Japan. |
| APR. 2021-CURRENT | Adjunct researcher at NTT communication Science Laboratories, NTT Corporation, Japan. |
| JUN. 2021-CURRENT | Researcher at TARVO Inc., Japan. |
| APR. 2018-MAR. 2021 | Research fellow (DC1) of Japan Society of Promotion of Science (JSPS), Japan. |
| APR. 2018-MAR. 2021 | Research intern at NTT Communication Science Laboratories, NTT Corporation, Japan. |
| JULY 2019-OCT. 2019 | Internship at Applied Sciences Lab, Microsoft Corporation, USA. |
| | Topic: Geometrically constrained independent vector analysis for speech enhancement |
| JULY 2018-AUG. 2018 | Research student at Toda Lab, Nagoya University, Japan. |
| | Topic: Singing voice modeling for singing style control |
| OCT. 2014-MAR. 2016 | Research student at Kameoka Lab and Saruwatari Lab, University of Tokyo, Japan. |

## AWARDS

| | |
|---|---|
| MAR. 2022 | The 51th Awaya Prize Young Researcher Award, The Acoustical Society of Japan (ASJ). |
| MAR. 2021 | President's Award of University of Tsukuba. |
| DEC. 2020 | IEEE Signal Processing Society Japan Student Conference Paper Award. |
| DEC. 2019 | The Best Student Presentation Award, IEICE Electroacoustics Symposium. |
| NOV. 2018 | IEEE Signal Processing Society Tokyo Joint Chapter Student Award. |
| MAR. 2018 | Chair Award of the Department of Computer Science, Graduate School of Systems and Information Engineering, University of Tsukuba. |
| SEP. 2016 | Best Student Presentation Award, The Acoustical Society of Japan (ASJ). |

## FUNDINGS

## LANGUAGES

Chinese (native), English (fluent), Japanese (fluent)

## COMPUTER SKILLS

Programming: Matlab, Python

## PUBLICATIONS

### JOURNAL PAPERS

[1] **L. Li**, H. Kameoka, S. Inoue, and S. Makino, "FastMVAE: A fast optimization algorithm for the multichannel variational autoencoder method," *IEEE Access*, vol. 8, pp. 228740–228753, Dec. 2020.

[2] **L. Li**, H. Kameoka, and S. Makino, "Majorization-minimization algorithm for discriminative non-negative matrix factorization," *IEEE Access*, vol. 8, pp. 227399–227408, Dec. 2020.

[3] R. Takahashi, **L. Li**, S. Makino, and T. Yamada, "VMInNet: Interpolation of virtual microphones in optimal latent space explored by auto encoder," *Journal of Signal Processing*, vol. 25, no. 6, pp. 245–250, Nov. 2021.

[4] N. Murashima, H. Kameoka, **L. Li**, S. Shogo, and S. Makino, "Single-channel multispeaker separation with variational autoencoder spectrogram model," *Journal of Signal Processing*, vol. 25, no. 4, pp. 145–149, Jul. 2021

[5] S. Seki, H. Kameoka, **L. Li**, T. Toda, and K. Takeda, "Underdetermined Source Separation Based on Generalized Multichannel Variational Autoencoder," *IEEE Access*, vol. 7, No. 1, pp. 168104–168115, Nov. 2019.

[6] H. Kameoka, **L. Li**, S. Inoue, and S. Makino, "Supervised determined source separation with multichannel variational autoencoder," *Neural Computation*, vol. 31, no. 9, pp. 1–24, Sep. 2019.

[7] H. Kameoka, T. Higuchi, M. Tanaka, and **L. Li**, "Non-negative matrix factorization with basis clustering using cepstral distance regularization," *IEEE/ACM Transactions on Audio, Speech and Language Processing (TASLP)*, vol. 26, no. 6, pp. 1025-1036, Jun. 2018.

### SELECTED PEER-REVIEWED CONFERENCE PAPERS

[1] **L. Li**, H. Kameoka, and S. Seki, "HBP: An efficient block permutation solver using Hungarian algorithm and spectrogram inpainting for multichannel audio source separation," in Proc. *2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP2022)*, pp. 516–520, Singapore, May 2022.

[2] **L. Li**, K. Koishida, and S. Makino, "Online directional speech enhancement using geometrially constrained independent vector analysis," in Proc. *The 21th Annual Conference of the International Speech Communication Association (Interspeech2020)*, pp. 61–65, Shanghai, Oct. 2020.

[3] **L. Li**, H. Kameoka, and S. Makino, "Determined audio source separation with multichannel star generative adversarial network," in Proc. *The 30th IEEE International Workshop on Machine Learning for Signal Processing (MLSP2020)*, Espoo, Sep. 2020.

[4] **L. Li** and K. Koishida, "Geometrically constrained independent vector analysis for directional speech enhancement," in Proc. *2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP2020)*, pp. 846–850, Barcelona, May 2020.

[5] **L. Li**, T. Toda, K. Morikawa, K. Kobayashi, and S. Makino, "Improving singing aid system for laryngectomees with statistical voice conversion and VAE-SPACE," in Proc. *20th International Society for Music Information Retrieval Conference (ISMIR2019)*, pp. 784–790, Delft, Nov. 2019.

[6] **L. Li**, K. Yamaoka, Y. Koshino, M. Matsumoto, and S. Makino, "Voice activity detection under high levels of noise using gated convolutional neural networks," in Proc. *International Congress on Acoustics (ICA2019)*, pp. 2862–2869, Aachen, Sep. 2019.

[7] **L. Li**, H. Kameoka, and S. Makino, "Fast MVAE: Joint separation and classification of mixed sources based on multichannel variational autoencoder with auxiliary classifier," in Proc. *2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP2019)*, pp. 546–550, Brighton, May 2019.

[8] **L. Li** and H. Kameoka, "Deep clustering with gated convolutional networks," in Proc. *2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP2018)*, pp. 16-20, Calgary, April 2018.

[9] **L. Li**, H. Kameoka, and S. Makino, "Mel-generalized cepstral regularization for discriminative non-negative matrix factorization," in Proc. *The 27th IEEE International Workshop on Machine Learning for Signal Processing (MLSP2017)*, Tokyo, Sep. 2017.

[10] **L. Li**, H. Kameoka, T. Toda, and S. Makino, "Speech enhancement using non-negative spectrogram models with mel-generalized cepstral regularization," in Proc. *The 18th Annual Conference of the International Speech Communication Association (Interspeech2017)*, pp. 1998-2002, Stockholm, Aug. 2017.

[11] **L. Li**, H. Kameoka, and S. Makino, "Discriminative non-negative matrix factorization with majorization-minimization," in Proc. *The 5th Joint Workshop on Hands-free Speech Communication and Microphone Arrays (HSCMA2017)*, pp. 141-145, San Francisco, Mar. 2017.

[12] **L. Li**, H. Kameoka, T. Higuchi, and H. Saruwatari, "Semi-supervised joint enhancement of spectral and cepstral sequences of noisy speech," in Proc. *The 17th Annual Conference of the International Speech Communication Association (Interspeech2016)*, pp. 3753-3757, San Francisco, Sep. 2016.