Xu LI

Home Page: http://lixucuhk.github.io
Contact Info: (+86)15712028892, (+852)53096121 ⋄ xuli@se.cuhk.edu.hk

BIOGRAPHY

I am currently a Ph.D. student in the Department of Systems Engineering and Engineering Management, the Chinese University of Hong Kong. My supervisor is Prof. Helen Meng.

The Chinese University of Hong Kong, Hong Kong SAR, China *August 2017 - Present*
Ph.D. candidate in Dept. of Systems Engineering and Engineering Management;

University of Science and Technology of China, Hefei, Anhui, China *July 2013 - June 2017*
B.E. in Dept. of Information Science and Technology;

SELECTED PUBLICATIONS AND MANUSCRIPTS [Google Scholar]

Channel-wise Gated Res2Net: Towards Robust Detection of Synthetic Speech Attacks,
Xu Li, Xixin Wu, Hui Lu, Xunying Liu and Helen Meng, accepted to the Proceedings of Interspeech, 2021

Adversarial Defense for Automatic Speaker Verification for Self-Supervised Learning,
Xu Li*, Haibin Wu*, Andy T. Liu, Zhiyong Wu, Helen Meng and Hung-yi Lee, under review for IEEE/ACM Transactions on Audio Speech and Language Processing

Replay and Synthetic Speech Detection with Res2Net Architecture,
Xu Li, Na Li, Chao Weng, Xunying Liu, Dan Su, Dong Yu and Helen Meng, in IEEE ICASSP, 2021

Adversarial Defense for Automatic Speaker Verification by Cascaded Self-Supervised Learning Models,
Xu Li*, Haibin Wu*, Andy T. Liu, Zhiyong Wu, Helen Meng and Hung-yi Lee, in IEEE ICASSP, 2021

Investigating Robustness of Adversarial Samples Detection for Automatic Speaker Verification,
Xu Li, Na Li, Jinghua Zhong, Xixin Wu, Xunying Liu, Dan Su, Dong Yu and Helen Meng, in the Proceedings of Interspeech, 2020

Bayesian x-vector: Bayesian Neural Network based x-vector System for Speaker Verification,
Xu Li, Jinghua Zhong, Jianwei Yu, Shoukang Hu, Xixin Wu, Xunying Liu and Helen Meng, in Speaker Odyssey, 2020

Adversarial Attacks on GMM i-vector based Speaker Verification Systems,
Xu Li, Jinghua Zhong, Xixin Wu, Jianwei Yu, Xunying Liu and Helen Meng, in IEEE ICASSP, 2020.

Unsupervised Discovery of Non-native Phonetic Patterns in L2 English Speech for Mispronunciation Detection and Diagnosis,
Xu Li, Shaoguang Mao, Xixin Wu, Kun Li, Xunying Liu and Helen Meng, in the Proceedings of Interspeech, 2018, pp. 2254-2258

Deep Segmental Phonetic Posterior-grams based Discovery of non-categories in L2 English Speech,
Xu Li, Xixin Wu, Xunying Liu and Helen Meng, arXiv preprint arXiv:2002.00205 (2020).

Unsupervised Discovery of an Extended Phoneme Set in L2 English Speech for Mispronunciation Detection and Diagnosis,
Shaoguang Mao, **Xu Li**, Kun Li, Zhiyong Wu, Xunying Liu and Helen Meng, in IEEE ICASSP, 2018, pp. 6244-6248

RESEARCH EXPERIENCE & PROJECT

02/2020 - 12/2020: **Internship at Tencent AI Lab, Shenzhen, China**
automatic speaker verification (ASV), anti-spoofing, adversarial attacks

07/2019 - Present: **automatic speaker verification**, **anti-spoofing counter-measures**
In this period, I focused on developing strong automatic speaker verification (ASV) systems, and also anti-spoofing counter-measures against malicious spoofing attacks, including replay, text-to-speech (TTS), voice conversion (VC) and adversarial attacks.

08/2017 - 06/2019: **mispronunciation detection and diagnosis**, **second language learning**
In this period, I focused on modeling the non-categorical pronunciations in second language (L2) English speech. The non-categorical pronunciations in L2 speech usually cannot be described by any native phoneme, and lack sufficient annotations from linguists. Our proposed approach explores the non-categories in an unsupervised manner, which is a data-driven approach with little human effort. This modeling of non-categories results in a more effective mispronunciation detection and more precise feedback (diagnosis) to language learners.

02/2017 - 06/2017: Research Assistant at **Graduate School at Shenzhen, Tsinghua University**, supervised by Prof. Zhiyong Wu
Focusing on acoustic-phonemic modeling of L2 English speech units.

HONORS & AWARDS

2015: Kwang-Hua Scholarship, Kwang-Hua Educational Foundation
2014: Excellent Undergraduate Scholarship, USTC
2013: Freshman Scholarship, USTC
2015: Third Prize in the Electronics Development Competition, USTC

PROGRAMMING SKILLS

Language: Python > C/C++ > MATLAB > Java
Frameworks: Pytorch, Kaldi, TensorFlow