# Songxiang Liu

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https://liusongxiang.github.io/


## Biography

I am currently a PhD student in Department of System Engineering and Engineering Management in the Chinese University of Hong Kong. My research interests are Voice Conversion, Speech Synthesis and Deep Learning. My supervisor is Prof. Helen Meng.

- **The Chinese University of Hong Kong** — Shatin, Hong Kong
  *PhD candidate in Dept. of System Engineering and Engineering Management;* — *08/2017 – Now*
- **The Chinese University of Hong Kong** — Shatin, Hong Kong
  *Research Assistant in Dept. of System Engineering and Engineering Management;* — *06/2017 – 08/2017*
- **Hong Kong University of Science and Technology** — Saikung, Hong Kong
  *Research Assistant in Dept. of Industrial Engineering and Decision Analytics;* — *08/2016 – 06/2017*
- **Zhejiang University** — Hangzhou, China
  *B.E. in Dept. of Control Science and Engineering; GPA: 3.93/4.0 (Ranking 7/142)* — *08/2012 – 07/2016*

## Selected Publications

- Transferring Source Style in Non-Parallel Voice Conversion,
  **Songxiang Liu**, Yuewen Cao, Shiyin Kang, Na Hu, Xunying Liu, Dan Su, Dong Yu, Helen Meng. submitted to INTERSPEECH 2020.
- End-to-End Accent Conversion Without Using Native Utterances,
  **Songxiang Liu**, Disong Wang, Yuewen Cao, Lifa Sun, Xixin Wu, Shiyin Kang, Zhiyong Wu, Xunying Liu, Dan Su, Dong Yu, Helen Meng, accepted by ICASSP 2020.
- Defense against adversarial attacks on spoofing countermeasures of ASV,
  **Songxiang Liu***, Haibin Wu*, Helen Meng, Hung-yi Lee, accepted by ICASSP 2020.
- Adversarial Attacks on Spoofing Countermeasures of automatic speaker verification,
  **Songxiang Liu**, Haibin Wu, Hung-yi Lee, Helen Meng, in ASRU 2019.
- Jointly Trained Conversion Model and WaveNet Vocoder for Non-parallel Voice Conversion using Mel-spectrograms and Phonetic Posteriorgrams,
  **Songxiang Liu**, Yuewen Cao, Xixin Wu, Lifa Sun, Xunyin Liu and Helen Meng in the Proceedings of Interspeech 2019.
- Voice Conversion Across Arbitrary Speakers Based on a Single Target-Speaker Utterance,
  **Songxiang Liu**, Jinghua Zhong, Lifa Sun, Xixin Wu, Xunyin Liu and Helen Meng in the Proceedings of Interspeech 2018.
- The HCCL-CUHK System for the Voice Conversion Challenge 2018,
  **Songxiang Liu**, Lifa Sun, Xixin Wu, Xunyin Liu and Helen Meng in the Odyssey 2018 The Speaker and Language Recognition Workshop 26-29 June 2018, Les Sables d' Olonne, France.
- Code-Switched Speech Synthesis Using Bilingual Phonetic Posteriorgram With Only Monolingual Corpora,
  Yuewen Cao, **Songxiang Liu**, Xixin Wu, Shiyin Kang, Peng Liu, Zhiyong Wu, Dan Su, Dong Yu, Helen Meng, accepted by ICASSP 2020.

- End-to-end Mixed-lingual TTS With Monolingual Recordings,
  Yuewen Cao, Xixin Wu, **Songxiang Liu**, Jianwei Yu, Xu Li, Zhiyong Wu, Xunying Liu, Helen Meng. Accepted by International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2019.

- Rapid Style Adaptation Using Residual Error Embedding for Expressive Speech Synthesis,
  Xixin Wu, Yuewen Cao, Mu Wang, **Songxiang Liu**, Shiyin Kang, Zhiyong Wu, Xunying Liu, Dan Su, Dong Yu and Helen Meng in the Proceedings of Interspeech 2018, 2-6 September 2018, Hyderabad.

- Feature Based Adaptation For Speaking Style Synthesis,
  Xixin Wu, Lifa Sun, Shiying Kang, **Songxiang Liu**, Zhiyong Wu, Xunyin Liu and Helen Meng in the Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 5304-5308. Calgary, Canada, 15-20 April, 2018.

## Research Experience & Project

- 09/2019-Now: Intership at Tencent AI Lab. Conducting research on accent conversion and voice conversion.

- 06/2019-08/2019: Summer Visiting to **National Taiwan University** (supervised by Prof. Hung-yi Lee). In the first several weeks, I worked on Adversarial Attacks on ASVspoofing countermeasure systems and submitted a paper to ASRU 2019. In the remaining days, I have been working on unsupervised ASR using GAN-based models.

- 2017-Now: **Non-parallel Voice Conversion & Emotional Voice Conversion based on Phonetic Posteriorgrams(PPGs)**, at CUHK.
  This stream of techniques for Voice Conversion relies on training of a **Speaker-Independent Automatic Speech Recognition (SI-ASR)** system to extract Phonetic Posteriorgrams(PPGs), which bridge the gap between the source-target acoustic features. For emotional Voice Conversion, PPGs are regarded as auxiliary features containing rich linguistic information, which boosts the conversion performance.

- 2016-2017: **Operations Research**, at HKUST.
  Focus on dynamic pricing and fresh logistics.

## Honors & Awards

- 2018: Best paper award in the International Doctoral Forum 2018, Tsinghua University(Shenzhen)

## Programming Skills

- **Programming Languages**: Python > C/C++ > MATLAB

- **Toolkit**: Pytorch, TensorFlow, Kaldi

## Language Skills

- Chinese: Native

- English: IELTS 7.0 (Jan. 2016)