

YUSONG WU

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EDUCATION

Beijing University of Posts and Telecommunications	Beijing, China
BE in Automation	09/2016 - 06/2020
University of Montréal & Quebec Artificial Intelligence Institute (MILA)	Montréal, Canada
MSc in Computer Science – Artificial Intelligence	09/2020 - 06/2022 (expected)
Advisor: Prof. Aaron Courville , Dr. Chengzhi Anna Huang	

PUBLICATIONS & MANUSCRIPTS

- **Yusong Wu**, Kun Chen, Ziyue Wang, Xuan Zhang, Fudong Nian, Xi Shao, Shengchen Li: *Audio Captioning Based on Transformer and Pre-Training for 2020 DCASE Audio Captioning Challenge*. Technical Report, DCASE2020 Challenge
- **Yusong Wu**, Shengchen Li, Chenzhu Yu, Heng Lu, Chao Weng, Dong Yu: *Peking Opera Synthesis via Duration Informed Attention Network*. INTERSPEECH 2020
- Liqiang Zhang, Chengzhu Yu, Heng Lu, Chao Weng, **Yusong Wu**, Xiang Xie, Zijin Li, Dong Yu: *DurIAN-SC: Duration Informed Attention Network based Singing Voice Conversion System*. INTERSPEECH 2020
- **Yusong Wu**, Shengchen Li: *Guqin Dataset: A symbolic music dataset of Chinese Guqin collection*. Proceedings of China Conference on Sound and Music Technology (CSMT 2019)
- **Yusong Wu**, Shengchen Li: *Distinguishing Chinese Guqin and Western Baroque pieces based on statistical model analysis of melodies*. International Symposium on Computer Music Multidisciplinary Research (CMMR 2019)

RESEARCH EXPERIENCE

2nd Place in DCASE 2020 Challenge Task 6: Automatic Audio Captioning	03/2020 - 07/2020
IEEE AASP Challenge on Detection and Classification of Acoustic Scenes and Events	
<ul style="list-style-type: none">• A sequence-to-sequence model with a CNN as encoder and a Transformer as decoder is designed, while technique including data augmentation, data regulation, pre-training and fine-tuning are applied.• The proposed system ranked 2nd in all participants achieved by a SPIDER score of 0.214.	
Singing Synthesis System	08/2019 – 05/2020
Research Intern, Tencent AI Lab.	
<ul style="list-style-type: none">• Adapted from DurIAN system to build a singing synthesis system which generating Mel-spectrogram from musical score input, and generating audio using WaveRNN.• Expressive Singing Performance: Experimented synthesizing Peking Opera singing with expressiveness in singing by inputting musical note, with the dynamics in Peking opera singing learned from the spectrogram.• Learning Singing from Speech: Experimented generating singing with the voice timbre learned from speech by jointly training singing and fine-tuning speech synthesis using fundamental frequency input.	
Statistical Approach to Distinguishing Different Music Genre	01/2019 - 05/2019
Advisor: Shengchen Li, Embedded Artificial Intelligence Research Group	
<ul style="list-style-type: none">• Proposed statistical approach, especially melodic internal histogram and Markov chain to differentiate music genre, by extracting feature distribution and measure similarity using Kullback–Leibler divergence.• Experimented the proposed method on Western Baroque and Chinese Guqin pieces, conducted significance test in the results and demonstrated the effectiveness of the method.	

MUSIC EXPERIENCE

- Semi-professional percussion player, started playing at age 6, tutored by top Percussion musician Xibin Liu.
- Over 10 years of experience in orchestra, wind symphony and marching band, proficient in Timpani.
- Played with famous Chinese pop singer Jie Zhang in 2016 on the [show](#) “Singer” .

SELECTED AWARD

• Gold Prize in Beijing University Orchestra Performance.	2018
• 2rd Prize of Academic Scholarship (Top 15%).	2019