YUSONG WU

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EDUCATION

Beijing University of Posts and Telecommunications Beijing, China

BE in Automation 09/2016 - 06/2020 (expected)

- GPA: 3.46/4;
- English Proficiency: GRE: 158(V)+169(Q)+3.0, TOEFL: 29(L)+29(R)+25(S)+23(W)= 106

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: *Synthesising Expressiveness in Peking Opera via Duration Informed Attention Network.* arXiv:1912.12010 [cs.CL]
- Liqiang Zhang, Chengzhu Yu, Heng Lu, Chao Weng, **Yusong Wu**, Xiang Xie, Zijin Li, Dong Yu: *Learning Singing From Speech*. arXiv:1912.10128 [cs.SD]
- **Yusong Wu**, Shengchen Li: *Guqin Dataset: A symbolic music dataset of Chinese Guqin collection*. **Accepted** by 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*. **Accepted** by 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

- 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.

- 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

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