TING-LE LI

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EDUCATION

Tianjin Polytechnic University **Tianjin, China**
BEng in Computer Science (Elite Class of Artificial Intelligence) *Sep. 2016 - Present*
GPA: 3.71/4.00 (Top 5% of the major)

HONORS & AWARDS

Three years of Dean's List, *2016 - 2019*
Three years of Merit Scholarship, *2016 - 2019*
Third Prize of the Blue Bridge Cup National Selection Competition, *2016 - 2017*
First Prize of the China Students Service Outsourcing Innovation and Entrepreneurship Competition (7.9% of all), *2018 - 2019*

MANUSCRIPT IN PREPARATION

[1] **Tingle Li**, Jiawei Chen, Haowen Hou, and Ming Li. "TF-Attention-Net: An End To End Neural Network For Singing Voice Separation."

TECHNICAL STRENGTHS

Programing Language	Python, Java, Shell, C++
Programing Framework	TensorFlow, PyTorch, Keras and a little Kaldi
GitHub	https://github.com/Tinglok

CORE COURSES

Machine Learning (97), Mathematical Foundation of Artificial Intelligence (98), Data Mining (91), Computer Vision (91), Numerical Analysis (94), Applied Statistics (91), Linear Algebra (93), Probability and Statistics (93), Advanced Mathematics (94), Data Structure (94), Algorithm Design and Analysis (93), High-level Programming Language (95)

RESEARCH INTERESTS

Source Separation, Speech Enhancement, Speaker Recognition, Music Information Retrieval

WORK EXPERIENCES

Speech and Multimodal Intelligent Information Processing (SMIIP) Lab **Suzhou**
Research Intern *Jul. 2019 - Present*

- Advised by Prof. Ming Li, I do some research on the utterance-level speaker and language recognition based on the deep neural network;
- Trying to do some research about speech front-end processing, including but not limiting to separation, enhancement and reverberation,

Tianjin Key Laboratory of Autonomous Intelligence Technology and Systems **Tianjin**
Student Research Assistant *Sep. 2018 - Jun. 2019*

- Advised by Prof. Rize Jin and Dr. Weitao Yuan, I mastered how to apply Deep Learning to Speech Processing, especially in Music Information Retrieval;

- Learning some knowledge about signal processing, such as short-time Fourier transform (STFT), GMM-HMM and MFCC, etc.

RESEARCH PROJECTS

Target Speaker Extraction for Overlap Detection (on-going) **Suzhou**
Research Assistant *Oct. 2019 - Present*

- Trying to study a system to separate the target speaker's audio from the mixed audio, that is, given two inputs into the system: the embedding vector from the target speaker, and the spectrogram of the mixed audio, then output the separated audio from the target speaker;
- Previous research input the target speaker embedding to the LSTM layer together with the mixed spectrogram, but it is very inefficient due to the time dependence of the LSTM, so I try to modify it with a self-attention layer.

Singing Voice Separation for Singer Verification **Shanghai**
Research Assistant *Sep. 2019 - Oct. 2019*

- We used the network structure we proposed to separate vocals of music for Speaker Recognition system, so that when different people sing the same song at the same time, the number of singers can be roughly identified (about 99.1% Accuracy);
- This technique has been adopted by Tencent Inc., which will be used as the third party duplicate checking technology for Guinness Records of the CCTV National Day Celebration Program, and news can be seen in here.

TF-Attention-Net: An Neural Network for Singing Voice Separation **Suzhou**
Research Assistant *Aug. 2019 - Oct. 2019*

- Working with the researcher from Tencent Inc., I proposed an end-to-end neural network based on self-attention layer, which focuses on the singing voice separation task. It works on spectrogram domain, which can separate songs into accompaniments and vocals;
- Compared with the baselines, the evaluation metric of our model is greatly improved while the number of model parameters is significantly reduced. It is expected to be submitted to Interspeech 2020 (as the first author) and now can be seen in arXiv.

TEACHING EXPERIENCE

- Introduction to Machine Learning (TA) [Tutorial][Assignment] *Fall 2019*