TING-LE LI

(+86)16675164723 ⋄ tl267@duke.edu
Homepage: https://tinglok.netlify.com

EDUCATION

Tiangong University   **Tianjin, China**
BSc in Computer Science (Elite Class of Artificial Intelligence)   Sep. 2016 - Present
GPA: 3.71/4.00 (Top 10% of the major)

HONORS & AWARDS

Three years Merit Scholarship, 2016 - 2019
Third Prize of the Blue Bridge Cup Team Competition National Selection Competition, 2016 - 2017
First Prize of the School-level Innovation and Entrepreneurship Challenge Competition, 2016 - 2017
First Prize of the China Students Service Outsourcing Innovation and Entrepreneurship Competition, 2018 - 2019

PUBLICATIONS

[1] Tingle Li, Jiawei Chen, Haowen Hou and Ming Li. "TF-Attention-Net: An End To End Neural Network For Singing Voice Separation." arXiv preprint arXiv:1909.05746 (2019).

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, One-shot Voice Conversion, 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 deep neural network;

- Trying to provide front-end technologies like Speech separation and Speech enhancement for Speech Recognition, Speaker Verification and Speaker Diarization tasks.

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

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

- Tried to modify the Crop and Concat part between the encoder and decoder in the U-Net with Attention Mechanism for Singing Voice Separation task, and found it has a slight improvement compared with the baselines, which gave me an in-depth interest in the effects of Attention Mechanism on the Singing Voice Separation task.

RESEARCH PROJECTS

Target Speaker Separation for Overlap Detection   Suzhou
Research Assistant   Oct. 2019 - Present

- Speaker Diarization System distinguishes speakers well only when the audio is non-overlapping. I am trying to study a system to separate the target speaker's audio from the mixed audio when it comes to the overlap detection stage, that is, given two input to the system: a voiceprint vector from the target speaker's enrollment audio and the spectrogram of the mixed audio, then output the target speaker's audio from the mixed audio;

- Previous research are to expand the frame level of voiceprint vector, then input it to a LSTM layer together with the mixed spectrogram, but we find it is very inefficient due to the time dependence of LSTM. So using an self-attention to replace the LSTM may be a better option.

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

- We used the network structure we proposed to separate vocals and accompaniment of musics for speaker verification system, so that when different people sing the same song at the same time, the number of singers can be roughly identified (about 95% Accuracy);

- This technology 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   Jan. 2019 - Oct. 2019

- Work with researcher from Tencent Inc., we proposed an end-to-end neural network based on self-attention, which focuses on singing voice separation task. It works on spectrogram domain, which enable to separate songs into accompaniments and vocals;

- Compared with the baselines, the Median and Mean of the SDR metric of our model are greatly improved while the number of model parameters is greatly reduced. It have been submitted to ICASSP 2020 (as the first author) and now can be seen in arXiv, where samples can be listened in here.

China Students Service Outsourcing Innovation and Entrepreneurship Competition Wuxi
Team Member   Nov. 2018 - May. 2019

- We develop a project called Deep-Learning-Based Psychological Measurement System for College Students, and our team won the national first prize (less than 8%) in Baidu Inc. Proposition Competition;

- We built the system using TensorFlow, which use VGG-19 to identify facial expression and building chatbot system using LSTM and Self-Attention Mechanism, finally the pre-trained model was deployed into our web system.

College Students Innovation and Entrepreneurship Project   Tianjin
Team Member   Apr. 2018 - Mar. 2019

- Our team developed a recommendation system based on user requirements using OCR intelligent identification technology as well as collaborative filtering algorithm and content-based recommendation algorithm and promoted it in the form of App;

- The system can classify document resources while filtering repetitive documents, and recommend students for the materials required according to their characteristics.

TECHNICAL STRENGTHS

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

PERSONAL TRAITS

Highly motivated and eager to learn new things.

Strong motivational and leadership skills.

Ability to work as an individual as well as in group.