YUHAN SHEN

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EDUCATION

Tsinghua University, Beijing, China *Aug. 2014 - Jul. 2018*
Bachelor of Engineering in Department of Electronic Engineering
Major: Electronic information science and technology
Overall GPA: 89.0/100 (Top 20%)

Northeastern University, Boston, USA *Sep. 2019 (incoming) -*
PhD in Computer Science (with first-year fellowship)

SCHOLARSHIPS & HONORS

National Endeavor Scholarship, Ministry of Education of China	2016 & 2017
Comprehensive Excellence Award, Tsinghua University	2016 & 2017
Academic Excellence Award, Tsinghua University	2015 & 2016 & 2017
Social Work Excellence Award, Tsinghua University	2016 & 2017
German Scholarship, Tsinghua University	2016
Qu Yuzhi Scholarship, Tsinghua University	2015
Second Prize in National Undergraduate Physics Olympic (Non-Physics Major)	2015

PUBLICATIONS

Yu-Han Shen, Ke-Xin He, Wei-Qiang Zhang, "*Learning How to Listen: A Temporal-Frequential Attention Model for Sound Event Detection*," in Proceedings of The 20th Annual Conference of the International Speech Communication Association (Interspeech 2019), Graz, Austria, 2019, accepted. [PDF]

Ke-Xin He*, **Yu-Han Shen***, Wei-Qiang Zhang, "*Hierarchical Pooling Structure for Weakly Labeled Sound Event Detection*," in Proceedings of The 20th Annual Conference of the International Speech Communication Association (Interspeech 2019), Graz, Austria, 2019, accepted. [PDF] (* equal contributor)

Yu-Han Shen, Ke-Xin He, Wei-Qiang Zhang, "*SAM-GCNN: A Gated Convolutional Neural Network with Segment-Level Attention Mechanism for Home Activity Monitoring*," in Proceedings of 2018 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT 2018), Louisville, USA, 2018. [PDF]

WORK EXPERIENCE

Speech & Audio Technology Lab, Tsinghua University *Jul. 2018 - Present*
Full-time Research assistant, Advisor: Prof. Wei-Qiang Zhang *Beijing, China*
Focus: audio and speech analysis, sound event detection, low-resource end-to-end keyword spotting

RESEARCH EXPERIENCE

Keyword Spotting from Speech (in progress) *Mar. 2019 - Present*
- Developed an encoder-decoder based template-matching baseline system for cross-lingual query-by-example keyword spotting (QbE-KWS) system.
- Developed a DTW based keyword spotting system using pseudo text feature.
- Currently engaged in the OpenSAT Evaluation.

Weakly-labeled Sound Event Detection *Jan. 2019 - Mar. 2019*
- Proposed a hierarchical pooling structure for weakly-labeled sound event detection.
- Achieved competitive performance on evaluation dataset of Detection and Classification of Acoustic Events and Scenes (DCASE) 2017 task 4.
- Paper accepted by Interspeech 2019 as co-first author.

Research on Acoustic Model for Sound Event Detection *Oct. 2017 - Dec. 2018*

- Utilized multiple deep-learning based models to study the performance of different acoustic models, and proposed a hybrid deep-learning architecture for sound event detection.
- Proposed a bi-domain (on both time domain and frequency domain) attention model for sound event detection.
- Outperformed state-of-the-art methods on evaluation dataset of Detection and Classification of Acoustic Events and Scenes (DCASE) 2017 task 2.
- Paper accepted by Interspeech 2019 as first author.

Monitoring of Domestic Activities Based on Multi-Channel Acoustics *May 2018 - Jul. 2018*

- Adopted gated convolutional neural networks and model ensemble method for home activity classification.
- Ranked the 4th place in task 5 of DCASE 2018 Challenge. [Website]
- Proposed a segment-level attention mechanism for home activity monitoring and improved our previous work.
- Paper published in Proceedings of ISSPIT 2018 as first author.

ADDITIONAL INFORMATION

Programming	C/C++, Python, Matlab, Verilog, Shell Script
Deep-learning Tools	Tensorflow, Keras, Caffe
Languages	Chinese Mandarin (native), English (fluent), German (elementary)
TOEFL-iBT	110/120 (R: 30, L: 28, S: 22, W: 30)