

ZEYU ZHAO

Informatics Forum, Chapel Street, Edinburgh, EH8 9AB, Scotland
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EDUCATION

University of Edinburgh

September 2020 - Present

PhD Student

Centre for Speech Technology Research

School of Informatics

Tsinghua University

September 2017 - August 2020

M.S. in Information and Communication Engineering

Department of Electronic Engineering

CGPA: 3.6/4.0

Lady Margaret Hall, University of Oxford

August 2019

Summer Programme, Science Research at the Cutting Edge

Successfully completed with distinction

Beijing Institute of Technology

September 2013 - June 2017

B.S. in Electronic Information Engineering

Department of Electronic Engineering

CGPA: 90/100

PUBLICATIONS

Journals

Z. Zhao and W. Q. Zhang. (2021). End-to-end keyword search system based on attention mechanism and energy scorer for low resource languages. *Neural Networks*, 139, 326-334.

Zhao Zeyu, Zhang Weiqiang, and Liu Jia, "End-to-End Keyword Search System Based on Attention Mechanism and Multitask Learning," (in Chinese) *Journal of Signal Processing*, 2020, 36(6):839-851. DOI: 10.16798/j.issn. 10030530. Jun 2020.

Conferences

Z. Zhao and P. Bell, "Investigating Sequence-Level Normalisation For CTC-Like End-to-End ASR," *ICASSP 2022 - 2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2022, pp. 7792-7796

Z. Zhao and P. Bell, (2022). Softmax CTC: Encouraging Path Sparsity for Improved Decoding Efficiency. In *INTERSPEECH* (under review).

Z. Zhao and W. Q. Zhang (2020). End-to-End Keyword Search Based on Attention and Energy Scorer for Low Resource Languages. In *INTERSPEECH* (pp. 2587-2591).

Z. Zhao, W. Q. Zhang, J. Liu, F. Zhang, X. Li, and L. Yu, (2020, December). Jujubecake: An Extension of LSTM Considering Correlation among Input Blocks. In *2020 15th IEEE International Conference on Signal Processing (ICSP)* (Vol. 1, pp. 316-320). IEEE.

RESEARCH EXPERIENCE

PhD Research at CSTR

September 2020 - Present

Supervised by Dr. Peter Bell

Focusing on end-to-end Automatic Speech Recognition

Master Research at Tsinghua University

September 2017 - August 2020

Master Student, Department of Electronic Engineering

Supervised by Dr. Wei-Qiang Zhang

Automatic Speech Recognition (ASR), Keyword Search (KWS) and Sequence Modelling

Mainly focused on end-to-end ASR and KWS for low resource languages

OpenSAT19 Competition

April 2019 - August 2019

Core Member

Introduction: OpenSAT19 hosted by NIST is a competition which consists of three parts, including ASR, KWS and SAD (Speech Activity Detection). Each part contains 3 tasks so there are tasks in total. We attended 5 tasks, three in SAD, one in KWS and one in ASR.

Contribution: I was a core member of our team and developed KWS systems for Pashto language, a low resource language.

Result: We won two 1st prizes, two 2nd prizes and one 3rd prize. Particularly, we won the 2nd prize in KWS task, where I was the main contributor.

SKILLS

Python, PyTorch, ESPnet, Kaldi, C, L^AT_EX, TensorFlow, Keras

LANGUAGES

Mandarin

Native speaker

English

Working proficiency

AWARDS & SCHOLARSHIPS

Student Research Award

2019

Research Center for Media Big Data Cognitive Computing, Department of Electronic Engineering
Tsinghua University, Beijing, China

National Scholarship

2014 - 2016

Beijing Institute of Technology, Beijing, China
For top students only

First Undergraduate Scholarship

2013 - 2017

Beijing Institute of Technology, Beijing, China
For top students only

Third Prize, Beijing Electronic Design Competition

2016

Honorable Mentioned, Mathematical Contest in Modelling

2015

First Prize in National Physics Competition

2014

ACTIVITY

Escort

September 2013 - June 2015

Member

Voluntary teaching for students of year 5 in Minren Primary School, Fangshan District, Beijing

Held a Christmas party in Beijing Institute of Technology in Fangshan District for the children in Minren Primary School.

Singing competition of the school of information and electronics

December 2013

Beijing Institute of Technology

Entered the final competition.

Student Union of School of Information and Electronics

September 2014 - June 2015

Core member and the minister of study and research

Beijing Institute of Technology