

Zhanghao Wu

UNDERGRADUATE IN COMPUTER SCIENCE

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Education

Shanghai Jiao Tong University (SJTU)

B.S. IN COMPUTER SCIENCE

Shanghai, China

Sep. 2016 - Jun. 2020 (expected)

- A student of ACM Class, an elite CS program for top 5% talented students. (GPA: 92.07 / 100, **Rank: 2**)
- Interested in deep learning, especially natural language processing, speech and efficient AI.

Research Experience

HanLab

RESEARCH ASSISTANT, SUPERVISED BY PROF. SONG HAN

Massachusetts Institute of Technology, USA

Jul. 2019 - Jan. 2020 (expected)

- Focusing on privacy preserving and efficient machine learning.
- Working on efficient natural language processing, especially for machine translation. Proposed a novel primitive with higher capacity than the original transformer under mobile settings and submitted to ICLR 2020.
- Designed an efficient privacy-preserving cloud-edge inference method utilizing the linearity of neural networks.
- Won first place in the CVPR'19 Visual Wake Words challenge and third place (first place of all academic groups) in CVPR'19 Low Power Image Recognition Competition.

SpeechLab

UNDERGRADUATE RESEARCHER, ADVISED BY PROF. YANMIN QIAN AND PROF. KAI YU

Shanghai Jiao Tong University, China

Jul. 2018 - PRESENT

- Focused on Rich Audio Analysis (RAA), analysis and classification of non-text information within human speech.
- Implemented Deep Canonical Correlation Analysis (DCCA) in pytorch and released the code on GitHub.
- Participated in the translation of the book: *Reinforcement Learning: An Introduction* by Sutton, R.S., Barto, A.G.
- Established a VAE based data augmentation to improve the robustness of speaker verification systems by modelling the patterns of noise and reverberation in the speaker embeddings. It was accepted by Interspeech 2019 (**oral**).

Publications

Data Augmentation using Variational Autoencoder for Embedding based Speaker Verification

ZHANGHAO WU, SHUAI WANG, YANMIN QIAN, KAI YU

Interspeech 2019 (**oral**), Sep. 2019

Real-Time Image Classification with Proxyless Neural Architecture Search And Quantization-Aware Finetuning

HAN CAI, TIANZHE WANG, ZHANGHAO WU, KUAN WANG, JI LIN, SONG HAN

ICCV 2019 workshop, Oct. 2019

Teaching Experience

Compiler (MS208), Teaching Assistant

Shanghai Jiao Tong University, Spring 2019

C++ Programming (CS152), Teaching Assistant

Shanghai Jiao Tong University, Spring 2018

Honors & Awards

First place, Visual Wakeup Words (VWW) Challenge

CVPR'19, 2019

Third place, Low Power Image Recognition Competition

ICCV'19, 2019

Outstanding Winner, Mathematical Contest in Modeling (Top 0.5%, international)

COMAP, 2017

National Scholarship, (Top 1%)

Ministry of Education of P.R. China, 2018 & 2019

Fan Hsu-Chi Chancellor's Scholarship, (Top 0.1%)

Shanghai Jiao Tong University, 2017

Merit Student

Shanghai Jiao Tong University, 2017

Zhiyuan Honorary Scholarship

Shanghai Jiao Tong University, 2016 - 2018

Selected Projects

VWW 🌐mit-han-lab/VWW

May. 2019

- Won first place in the CVPR'19 Visual Wake Words challenge. The task is human detection on IoT device that has a tight computation budget: <250KB model size, <250KB peak memory usage, <60M Mult-Adds.

DeepCCA 🌐Michaelvll/DeepCCA

Dec. 2018

- An implementation of Deep Canonical Correlation Analysis in pytorch with 40 stars.

MW Compiler 🌐Michaelvll/MWCompiler

Jun. 2018

- Designed a compiler implemented in Java from scratch, translating Mx*, a Java-and-C-like language, program into x64-nasm code.
- Implemented optimizations for the compiler, faster than gcc O1 on test set, **98/100**.

RISCV CPU 🌐Michaelvll/RISCV_CPU

Jan. 2018

- An FPGA-supported RISC-V CPU with 5-stage pipeline in Verilog HDL. It was the only two implementations that could actually be executed on the FPGA in class, **100/100**.