Zhisheng Zheng

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 Homepage | ⅌ Scholar | Github | twitter

EDUCATION

Bachelor of Information Engineering   Shanghai, China
School of Electronic Information and Electrical Engineering, SJTU; GPA: 3.79   *Sept. 2020 - June 2024 (expected)*

Member of Zhiyuan Honors Program of Engineering   Shanghai, China
Zhiyuan College, Shanghai Jiao Tong University; Top 5%   *Sept. 2020 - June 2024 (expected)*

Visiting Scholar of Computer Science   Austin, USA
College of Natural Science, The University of Texas at Austin   *May 2023 - Present*

EDUCATION PERFORMANCES

- **MATH1205: Linear Algebra** 97/100
- **NIS1336: Programming Practice** 99/100
- **CS1501: Thinking and Methodology in Programming(C++)** 96/100
- **CS249: Intelligent Speech Technology** 95/100
- **CS4314: Natural Language Processing** 98/100

PUBLICATIONS

- **MT4SSL: Boosting Self-Supervised Speech Representation Learning by Integrating Multiple Targets**   *—INTERSPEECH 2023* **Best student paper shortlist**
  Ziyang Ma, **Zhisheng Zheng**, Changli Tang, Yujin Wang, Xie Chen.

- **Unsupervised Active Learning: Optimizing Labeling Cost-Effectiveness for Automatic Speech Recognition**   *—INTERSPEECH 2023*
  Zhisheng Zheng, Ziyang Ma, Yu Wang, Xie Chen.

- **Pushing the Limits of Unsupervised Unit Discovery for SSL Speech Representation**
                                                                           —INTERSPEECH 2023
  Ziyang Ma, **Zhisheng Zheng**, Guanrou Yang, Yu Wang, Chao Zhang, Xie Chen.

- **Fast-HuBERT: An Efficient Training Framework for Self-Supervised Speech Representation Learning**   *—ASRU 2023*
  Guanrou Yang, Ziyang Ma, **Zhisheng Zheng**, Yakun Song, Zhikang Niu, Xie Chen.

- **Exploring Effective Distillation of Self-Supervised Speech Models for Automatic Speech Recognition**   *—ASRU 2023*
  Yujin Wang, Changli Tang, Ziyang Ma, **Zhisheng Zheng**, Xie Chen, Wei-Qiang Zhang.

- **Front-End Adapter: Adapting Front-End Input of Speech based Self-Supervised Learning for Speech Recognition**   *—ICASSP 2023*
  Xie Chen, Ziyang Ma, Changli Tang, Yujin Wang, **Zhisheng Zheng**.

RESEARCH EXPERIENCE

MoE Key Lab of Artificial Intelligence, AI Institute, X-LANCE Lab, SJTU Shanghai, China
Research Intern, Advised by Prof. Xie Chen   *Dec. 2021 - Present*

- **Improve ASR Performance Through Self-Supervised and Unsupervised Learning**
  Utilizing the *fairseq* framework, replicated mainstream Self-Supervised Learning (SSL) models such as wav2vec 2.0, HuBERT, data2vec, and Wav2vec-U 2.0. By synergistically integrating the unique features of these models, further boosted their performance in Automatic Speech Recognition (ASR).

- **Unsupervised Active Learning for Automatic Speech Recognition**
  This work enhances SSL's capability to further reduce labeling costs using active learning. Through unsupervised derivation of speech units and a contrastive data selection method, achieve an over 11% improvement in word error rate (WER) with equivalent labeled data or halve the labeling cost while maintaining the same WER, compared to random selection.

- **Speech, Audio, and Language Technologies (SALT) Lab, UT-Austin**   Austin, USA
  Research Intern, Advised by Prof. David Harwath and Eunsol Choi   *May, 2023 - Present*
  - ○ **Audio and Language Understanding (LLM)**
    Leveraging advanced language models (llama), for audio understanding.

SELECTED AWARDS

- Rongchang Science and Technology Innovation Scholarship (<1%)   2023
- Tencent Scholarship (Top 2%)   2021
- Zhiyuan College Honors Scholarship (Top 5%)   2021, 2022, 2023
- SJTU Excellent Scholarship (Top 30%)   2021

SKILLS

- **Coding**: Python (Pytorch), C/C++, Bash.
- **Languages**: Chinese (Native), English (TOEFL 104).