

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

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

SELECTED AWARDS

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| • 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).