Rui-Chen Zheng | 郑瑞晨

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Education

PhD Candidate in Information and Communication Engineering *2021.09 – 2026.06 (Expected)*
University of Science and Technology of China *Hefei, Anhui, China*
- ➢ Supervised by Prof. Zhen-Hua Ling
- ➢ GPA: 3.9/4.3

Bachelor of Electronic Information Engineering *2017.09 – 2021.06*
University of Science and Technology of China *Hefei, Anhui, China*
- ➢ Thesis: Method and Practice on Text-to-Speech Without Text
- ➢ GPA: 3.89/4.3
- ➢ Minor in Business Administration

Experiences

Research Intern *2025.03 – 2025.07*
Tongyi Speech Group, Alibaba Inc. *Hangzhou, Zhejiang, China*
- ➢ Advised by Dr. Qian Chen, Mr. Chong Deng and Mr. Qinglin Zhang

Research Interest & Publications

➢ **Articulation-to-Speech Synthesis, Articulation-Acoustic Relationship**

[1]. **Rui-Chen Zheng**, Yang Ai, Zhen-Hua Ling, "Speech Reconstruction from Silent Lip and Tongue Articulation by Diffusion Models and Text-Guided Pseudo Target Generation", in *Proc. ACM Multimedia 2024*, pages 6559-6568.

[2]. **Rui-Chen Zheng**, Yang Ai, Zhen-Hua Ling, "Incorporating Ultrasound Tongue Images for Audio-Visual Speech Enhancement", *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (Volume: 32), pages 1430-1444.

[3]. **Rui-Chen Zheng**, Yang Ai, Zhen-Hua Ling, "Incorporating Ultrasound Tongue Images for Audio-Visual Speech Enhancement Through Knowledge Distillation", in *Proc. INTERSPEECH 2023*, pages 844-848.

[4]. **Rui-Chen Zheng**, Yang Ai, Zhen-Hua Ling, "Speech Reconstruction from Silent Lip and Tongue Articulation by Pseudo Target Generation and Domain Adversarial Training", in *Proc. ICASSP 2023*, pages 1-5.

➢ **Speech Coding, Speech Synthesis**

[1]. **Rui-Chen Zheng**, Hui-Peng Du, Xiao-Hang Jiang, Yang Ai, Zhen-Hua Ling, "ERVQ: Enhanced Residual Vector Quantization with Intra-and-Inter-Codebook Optimization for Neural Audio Codecs", accepted by *IEEE/ACM Transactions on Audio, Speech, and Language Processing*.

[2]. Yao Guo, Yang Ai, **Rui-Chen Zheng**, Hui-Peng Du, Xiao-Hang Jiang, Zhen-Hua Ling, "Vision-Integrated High-Quality Neural Speech Coding", accepted by *INTERSPEECH 2025*.

[3]. Xiao-Hang Jiang, Yang Ai, **Rui-Chen Zheng**, Zhen-Hua Ling, "A Streamable Neural Audio Codec With Residual Scalar-Vector Quantization for Real-Time Communication", *IEEE Signal Processing Letters* (Volume: 32), pages 1645-1649.

[4]. Hui-Peng Du, Yang Ai, **Rui-Chen Zheng**, Zhen-Hua Ling, "APCodec+: A Spectrum-Coding-Based High-Fidelity and High-Compression-Rate Neural Audio Codec with Staged Training Paradigm", in *Proc. ISCSLP 2024*, pages 676-680.

[5].Xiao-Hang Jiang, Yang Ai, **Rui-Chen Zheng**, Hui-Peng Du, Zhen-Hua Ling, "MDCTCodec: A Lightweight MDCT-based Neural Audio Codec towards High Sampling Rate and Low Bitrate Scenarios", in *Proc. SLT 2024*, pages 540-547.

[6].Fei-Liu, Yang Ai, Hui-Peng Du, Ye-Xin Lu, **Rui-Chen Zheng**, Zhen-Hua Ling, "Stage-Wise and Prior-Aware Neural Speech Phase Prediction", in *Proc. SLT 2024*, pages 638-644.

[7].Yang Ai, Ye-Xin Lu, Xiao-Hang Jiang, Zheng-Yan Sheng, **Rui-Chen Zheng**, Zhen-Hua Ling, "A Low-Bitrate Neural Audio Codec Framework with Bandwidth Reduction and Recovery for High-Sampling-Rate Waveforms", in *Proc. Interspeech 2024*, pages 1765-1769.

Selected Honors

- ➢ JAC-NIO Scholarship *2024.12*
- ➢ Honor Rank for Top 5% Graduates of USTC. *2021.06*
- ➢ Huawei Scholarship *2020.12*
- ➢ USTC Outstanding Student Scholarship, Gold Award *2019.12 & 2018.12*
- ➢ Top-Notch Program Funding *2019.12 & 2018.12*

Service

➢ Invited Reviewers for *Speech Communication*, *IEEE Signal Processing Letters* and *IEEE/ACM Transactions on Audio, Speech, and Language Processing*.

Teaching Assistant Experience

➢ Fundamentals of Speech Signal Processing by Prof. Zhen-Hua Ling, USTC   *2022 Fall*
➢ Fundamentals of Speech Signal Processing by Prof. Zhen-Hua Ling, USTC   *2021 Fall*
➢ Computer Programing Design A by Lecturer. Hu Si, USTC   *2020 Fall*

Skills

Language – Chinese/English

➢ TOEFL iBT: 106 (Reading: 28, Listening: 29, Speaking: 26, Writing: 23)   *2023.11*