KaitongZheng 郑凯桐

Tel：15959520089　　　　　　　Email：a593170280@gmail.com　　　Age：27

Nationality: China　　　　　　　Education：Master

Personal website：https://kaitongzheng.github.io/

Research Interests：Deep learning and signal processing for audio applications

Education

➢ **Xiamen University**				
College of ocean and earth sciences	**Marine Technology**	**Bachelor**		**2015.9-2019.7**
Rank：Top 1% in Class	**GPA:3.59**			
➢ **Institute of Acoustics, Chinese Academy of Sciences**				
Key laboratory of noise and vibration control	**Signal Processing**	**Master**		**2019.9-2022.7**
Advisor: Chengshi Zheng, Xiaodong Li	**GPA:3.57**			

Career

➢ **IFlytek, Suzhou（Junior audio algorithm engineer）** 　　　　　　　**2022.7-Now**

Publications

Zheng K, Zheng C, Sang J, et al. Noise-robust blind reverberation time estimation using noise-aware time–frequency masking [J]. Measurement, 2022, 192: 110901.

Zheng K, Meng R, Zheng C, et al. EmotionBox: A music-element-driven emotional music generation system based on music psychology [J]. Frontiers in Psychology, 2022: 5189.

Chen Y, **Zheng K**, Fang X, et al. QMCR: A Q-learning-based multi-hop cooperative routing protocol for underwater acoustic sensor networks[J]. China Communications, 2021, 18(8): 224-236. (as an undergraduate student)

Zheng K, Zheng C, Sang J, et al. A room impulse response generator and its application on blind reverberation time estimation [J]. Applied Acoustics (Chinese Version) 2022:1-12

Projects

➢ **Road noise control (RNC) in automotive** 　　　　　　　　　　　**2022.7-Now**
Goal: To reduce or eliminate unwanted road noise inside vehicles.
Methods: Implementation of multi-channel Filtered-x Least Mean Squares (FxLMS) algorithms and their variants in both time and frequency domains. This involves secondary path identification and resampling algorithms.

➢ **Noise-dependent music gain compensation in automotive** 　　　　**2022.7-2024.7**
Goal: To maintain a consistent listening experience for in-car audio systems, even in noisy environments.
Methods: Implementation of multi-channel echo cancellation, noise estimation, and volume mapping algorithms to compensate for media volume in noisy music scenarios.

➢ **Blind estimation of room acoustic parameters based on deep learning (Master thesis)** 　　**2020.10-2022.7**
Goal: To accurately estimate room acoustic parameters (e.g., reverberation time) from noisy and reverberant speech signals without requiring prior knowledge of the room or signal.
Methods: Utilization of deep learning models to analyze audio signals and extract relevant acoustic features.

➢ **Emotional music generation using Recurrent Neural Network** 　　　**2020.5-2020.10**
Goal: To create music that evokes specific emotions using deep learning models.
Methods: Employment of recurrent neural networks to generate music sequences with desired emotional characteristics.

➢ **Research on room equalization methods** 　　　　　　　　　　　**2020.1-2020.5**
Goal: To improve the sound quality in a room by compensating for frequency response variations caused by multi-path effects.
Methods: Application of sound field equalization techniques to counteract the negative impacts of room acoustics.

Skill

➢ Proficient in acoustic signal processing, adaptive filtering, beamforming, and deep learning.

➢ Familiar with basic in-car audio, spatial audio, speech front-end, and active noise cancellation algorithms.

➢ Proficient in MATLAB and Python, and PyTorch framework.

➢ Familiar with C language, VST plugin development, and basic acoustic experiments.

➢ IELTS score of 7 (L8 R7.5 W6.5 S6).

➢ Skilled in guitar playing, with a good understanding of music theory and a strong sense of music.

Patents

Zheng C, **Zheng K**, Sang J, et al. Noise robust blind reverberation time estimation method based on deep neural network. CN: CN114255780A, 2022-03-29.

Zheng K, Xia L, Hu M, et al. Noise-following gain method and device, vehicle-mounted system, electronic equipment and storage medium. CN: CN115862657B, 2023-07-28.

Zheng K, Xia L, Hu M, et al. Volume compensation method and device for in-vehicle media source and vehicle. CN: CN115938389B, 2023-07-28.