Zijian Zhao

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Education

Sun Yat-sen University Sep. 2020 – Jul. 2024
BEng in Computer Science and Technology *GPA: 90/100 (93.6 in core courses)*

Experience

Visiting Student Aug. 2023 – Jul. 2024
Shenzhen Research Institute of Big Data *Associated with Chinese University of Hong Kong (Shenzhen)*
Tutor Dec. 2020 – Sep. 2021
Shanghai Zhangxiaomen Education Technology Co., Ltd. *Online*

Publications

Adaptive Quadruped Locomotion of a Rat Robot Based on a Hierarchical Reinforcement Learning Framework, IEEE ROBIO (Accepted on October 3rd 2023)
Zitao Zhang, Yuhong Huang*, **Zijian Zhao**, Zhenshan Bing, Alois Knoll, Kai Huang
Autonomous Locomotion of a Rat Robot Based on Reinforcement Learning, CCF CIRAC 2023 (Accepted on August 5th 2023)
Zitao Zhang, Yuhong Huang, **Zijian Zhao**, Zhenshan Bing, Kai Huang*
Patent: A Motion Control Method for Small Bionic Rat Based on Reinforcement Learning (under review, submitted on April 2023)
Kai Huang; Zitao Zhang; **Zijian Zhao**; Ruoyi Tao
KD-ACR: Knowledge Distilling for Automatic Chord Recognition Model (under revision, first submitted on January 31st 2023 to IEEE Access)
Zijian Zhao
PianoBART: Symbolic Piano Music Understanding and Generating with Large-Scale Pre-Training (in progress)
Zijian Zhao, Weichao Zeng, Fupeng He, Yutong He, Yiyi Wang, Xiao Liang, Chengying Gao*

Skills and Interests

PROGRAMMING SKILLS: C/C++, Python, Matlab, Java, MySQL, Git, Linux
English: IELTS 6.5, CET4: 605, CET6: 561
Interests: Writing Songs, Playing Instruments (including guitar, bass, piano, drum, ukulele, and hulusi)

Research Experience

1.Wifi Sensing (Supervisor: Dr. Guangxu Zhu, 2023.08-2024.07):
(1)CSI-BERT: Recover Loss Wifi Chanel State Information by BERT (independently accomplish)
Description: A CSI-BERT model capable of processing continuous CSI data was designed to recover loss packages during communication. The recovered data improves the performance of other models in tasks like gesture and people recognition.
(2)Skeleton Estimation by Wifi CSI
(3)Realtime Wifi Sensing System (horizontal project)
Duty: I'm mainly responsible for developing functional modules such as intrusion detection in ESP32 and a Wifi Router.

2.Music AI (Supervisor: Prof. Chengying Gao & Prof. Ning Liu, 2021.12-2023.12):
(1)Piano Music Generation Based on BART (served as team leader)
Description: We first introduced Bart to music generation task by designing novel prertaining methods. Our model also shows the most advanced performance in eight downstream tasks like music generation and style classification.
Duty: I'm the host in this project and mainly response for model building and coding work.
(2)Improve Chord Recognition Algorithm by Knowledge Distilling (independently accomplish)
Description: Knowledge Distilling (KD) is first introduced to Automatic Chord Recognition (ACR) problem to compress model for small devices. Currently, I'm trying some Reinforcement Learning (RL) methods for the optimization of KD.

3.Robot Reinforcement Learning (Supervisor: Prof. Kai Huang, 2022.09-2024.07):
Description: We define a bionic robot rat with a flexible structure. And we designe some new RL methods in it including time cluster and a safer control method, which perform better than traditional methods like PPO.
Duty: I took responsibility of some coding and writing work in this project.

4.Others: Implementation of a Compressed Sensing Algorithm Based on DSP (Supervisor: Prof. Xizhang Wei, 2021.01-2021.12)

Honors And Awards

1. First-class Scholarship for Outstanding student of Sun Yat-sen University
2. Meritorious Winner in the Mathematical Contest in Modeling
3. Provincial First Prize in the Chinese Mathematics Competitions
4. Second Prize in Asia and Pacific Mathematical Contest in Modeling
5. Provincial Second Prize in SPSS University Contest in Modeling
6. Provincial Third Prize in the Chinese Mathematics Competitions