Ruichang Zhang

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Education Background

University of Electronic Science and Technology of China (UESTC), Chengdu, China 2019 - present
Master Student, Computer Science. **GPA**:3.8/4.0
Xiamen University, Xiamen, China 2015 - 2019
Bachelor of Chemistry
Bachelor of Economics (Minor Degreee)

Research Experience

Controlling Traffic flow in a Medium Road Net through Deep Reinforcement Learning Apr.2021 - Jun.2021

- Achieved a maximum average vehicle passing delay ratio of 1.54 and a maximum serving vehicle number of 126572 on a virtual road net of 2086 intersections by developing several deep reinforcement learning algorithms such as DQN and PPO.
- Designed an expert system based on maximum pressure to obtain trajectories. Stacked imitation learning and reinforcement learning by adding expert data into replay buffer.
- Concatenated information of neighboring intersections as input observation to improve accuracy.
- Ranked 28th out of 1156 teams in KDD Cup 2021, City Brain Challenge.

Running a Power Network through Deep Reinforcement Learning Jul. 2020 - Nov. 2020

- Deployed several deep reinforcement learning agent on IEEE-45, a simulated electric power network with 45 nodes, to prevent the grid from unexpected events and keep delivering reliable electricity.
- Reduced action space by previously simulating top k actions according to their corresponding reward.
- Ranked 33rd out of 256 competitors in L2RPN NEURIPS 2020, Robustness Track.

Screening Suspected Patient through Supervised Learning Mar. 2020 - May. 2020

- Selected feathers according to Pearson coefficient to cut off highly related feathers.
- Used random forest, kNN and XGBoost to predict the possibility of a suspected patient.

Predicting Physical Quantity of Well through Supervised Learning Aug. 2020 - Feb. 2021

- Preprocessed the curve by median filter to reduce noise.
- Divided the curve into several parts using k-means clustering and perform training and evaluating tasks on each segmentation.

Award and Honor

Second Prize Scholarship, UESTC, 2021
Second Prize Scholarship, UESTC, 2020
Third Prize Scholarship, UESTC, 2019

Publication

1. Yanru Zhang, Yingjie Zhou, Changkun Jiang, Yan Wang, **Ruichang Zhang**, George Chen. Plug-In Electric Vehicle Charging with Multiple Charging Options: A Systematic Analysis of Service Providers' Pricing Strategies. *IEEE Transactions on Smart Grid* 12.1 (2020): 524-537, doi:10.1109/TSG.2020.3020044
IF=8.267, JCR-1