MUHAO GUO

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EDUCATION

Arizona State University, United States *2021 Jan -*
Ph.D. student in Electrical, Computer and Energy Engineering, Fellowship
Research Field Machine Learning, Neural Network, Quantum Computing
Selected Paper Transform Waveforms into Signature Vectors for General-purpose Incipient Fault Detection.

University of Southern California, United States *Jan 2019 - Dec 2020*
Master of Electrical and Computer Engineering

Shandong University, China *Jul 2014 - Jun 2018*
Bachelor of Communication Engineering

TECHNICAL STRENGTHS

Machine Learning, Data Mining, Python, PyTorch, Sklearn, SQL, Linux, Java, Git, Qiskit

RESEARCH EXPERIENCE

Quantum Machine Learning, Research Assistant at ASU *Oct 2021 -*

- Research on quantum machine learning including quantum kernel estimation, quantum circuits design, quantum encoding, and variational quantum algorithms.

Graph Neural Network, Directed Research at USC *Jan 2020 - May 2020*

- Research on popular GNN Algorithms: Node2vec, Deepwalk, GCN, GraphSage, PinSage, GAT, etc.
- Applied PinSage on Netflix prize dataset to predict how the users rate movies.

SELECTED PROJECT

Reinforcement Learning: Deep reinforcement learning for automated stock trading in quantitative finance.

- Optimize the cumulative return of the stock market by allowing RL trading agent buy, sell and hold the stock using pre knowledges of stock such as balance and close price.
- Using 5 different Actor-Critic Deep Reinforcement Learning algorithms (A2C, PPO, DDPG, SAC, TD3) and one ensemble learning method for stock trading agents.

WORK EXPERIENCE

Arizona State University, Laboratory Teaching Assistant *Aug 2021 - Dec 2021*

- Laboratory Teaching Assistant of the course EEE-120 Digital Design Fundamentals.

MOEV Inc. in Los Angeles, Software Developer Intern *May 2020 - Aug 2020*

- Based on OCPP (Open Charge Point Protocol), implemented the communication between Electric Vehicle Charging Stations and a Central Management System. Used WebSocket protocol to realize instant full-duplex communication between server and client.
- To simulate the real charging scene, designed a 3-tier model, including Web GUI of Central Management System, Central Management System and Charge Station Simulators.
- Software designed and implemented 30 functions such as Boot Notification, Authorize, etc.

Array Networks Technology Ltd. in Beijing, Test Development Engineer *July 2018 - Oct 2018*

- Module test including: MAC/IPv4/IPv6 address, DNS/routing/gateway detection, time and time-zone synchronization, concurrent connections between server and clients. Designed and executed thousands of test cases, fixed more than 90 bugs.