

Weixian Shi

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Education

2019 - 2022	MSc, University of Bonn	Computer Science, Germany, English
2014 - 2018	BSc, Shandong University	Software Engineering, China, Bilingual

Work

2021 - 2022	Humanoid Robots Lab	Student research assistant
2020 - 2022	Fraunhofer IAIS	Software engineer
2017 - 2017	JD.com	Java developer intern

Research Projects

Re-implementation of a Job Schedule paper based on Deep Reinforcement Learning

- Paper: “Research on Adaptive Job Shop Scheduling Problems Based on Dueling Double DQN”
- Four days from understanding the field to reproducing, to achieve basically the same effect as the paper (sometimes even better)
- Link: <https://github.com/weixians/JobSchedule>

Subgoal-driven robot navigation based on Deep Reinforcement Learning

- Master thesis project, with [project link](#) available.
 - A hierarchical navigation framework for a lidar equipped robot navigating in indoor environments with unknown static obstacles and pedestrians.
 - The high-level agent predicts subgoal position for next fixed time period, while the low-level agent aims to achieve the subgoal.
 - The result will be rearranged and submitted to ICRA 2023.
- **Techniques:** Deep reinforcement learning (DDPG, TD3), Pybullet, ROS, Python, C++

Enhanced Spatial Attention Graph for Motion Planning in Crowded, Partially Observable Environments

- Paper accepted by [ICRA 2022](#), with [link](#) available.
 - Propose a new neural network based on reinforcement learning for human-aware partially observable environments.
 - This approach outperforms the previous state-of-the-art methods.
- **Techniques:** Deep reinforcement learning (Double DQN, imitation learning), Python

Software Development Work projects

Investment relation map for JD stock app

- Company: JD.com
- A Spring project providing data for JD stock app.

- Integrate data from multiple MySQL databases, find and aggregate the relationship between major shareholders and companies in massive data, and store the results in Redis.
- **Techniques:** Quickly and efficiently aggregate useful information from large amounts of data.

Web match system for electronic laser shooting sports events

- Company: Zhuhai Guangge Technology
- A web-based match system to hold sports matches, collect scores from Android app and display the real-time ranking information.
- Separating the system into several modules, in which Spring cloud is used to help communicate with each other.
- Websocket is used to maintain the messaging between frontend, Java backend and Android app.
- **Techniques:** Spring boot, Vue.js, Websocket, Mysql, Redis, MongoDB

Other information

- Github: <https://github.com/weixians>
- LinkedIn: <https://in.linkedin.com/in/weixianshi-ab17b5148>
- Personal website (contain all projects): https://weixians.github.io/about_me

Skill Summary

- Deep Reinforcement Learning, Machine Learning, Deep Learning
- Familiar with Python, Java, Android, Git, Linux, Pytorch, Redis
- Experienced on C++, Vue.js, ROS, Tensorflow, Mysql, MongoDB
- Human Languages: Chinese (native speaker), English (fluent)
- High passion on learning new technologies
- Good team player

Publications

Shi, Weixian, et al. "Enhanced Spatial Attention Graph for Motion Planning in Crowded, Partially Observable Environments." 2022 International Conference on Robotics and Automation (ICRA). IEEE, 2022.