

Weixian Shi

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Education

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| 2019 - 2022 | MSc, University of Bonn | Computer Science, Germany, English |
| 2007 - 2018 | BSc, Shandong University | Software Engineering, China, Bilingual |

Work

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

Research Project

Subgoal-driven robot navigation in indoor environments

- 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 environment.
 - This approach outperforms the previous state-of-the-art methods.
- **techniques:** Deep reinforcement learning (Double DQN, imitation learning), Python

Work project

Investment relation map for JD stock app

- 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.
- **Learned:** Quickly and efficiently aggregate useful information from large amounts of data.

Web match system for electronic laser shooting sports events

- A web-based match system to hold sports matches, collect scores from Android app and display the ranking information. (done all by myself)
- Containing sso, web-match, app-match backend 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.
- **Learned:** Spring boot, Vue.js, Websocket, Mysql

Android APP of laser shooting systems for sporting events

- An app for middle school student-athletes that receives hardware device data via Bluetooth, and visualizes laser transmitter firing positions, trigger pressure data, and more.
- This app can receive and parse data from different types of devices.
- In addition, synchronous backup of data is also implemented based on socket and http, as well as its use in competition scenarios.
- **Learned:** Android, Bluetooth, socket, http, Realm database, MVP design pattern

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

- Reinforcement Learning, Deep Learning, Machine Learning
- Programming Languages:
 - familiar with Python, Java, C++, Android
 - experienced on Vue.js
- 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.