

# Weixian Shi

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## Education

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

## Work

2021 - 2022	<b>Humanoid Robots Lab</b>	Student research assistant
2020 - 2022	<b>Fraunhofer IAIS</b>	Software engineer
2017 - 2022	<b>Zhuhai Guangge Technology</b>	Software engineer
2017 - 2017	<b>JD.com</b>	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](https://weixians.github.io/about_me)

## Skill Summary

- 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.