SHANGYUAN QIAN

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EDUCATION

University of Southern California — Los Angeles, US
Degree: Master of Science — January 2024-December 2025
- Major in Computer Engineering

University of Liverpool — Liverpool, UK
Degree: Bachelor of Engineering with Honours — September 2021-June 2023
- Major in Computer Science & Electronic Engineering

Xi'an Jiaotong-liverpool University — Suzhou, CN
Degree: Bachelor of Engineering with Honours — September 2019-June 2021
- Major in Computer Science and Technology

SKILLS

- Back-end development, Algorithms, Computer Systems Organization, Embedded System, Distributed and Parallel Systems, Database (MySQL), Computer Network, Digital system design, Microprocessor Systems, Machine Learning
- Programming: Java, Verilog, C++, Python

WORK EXPERIENCE

Business-intelligence of Oriental Nations Corporation — Beijing, CN
Software Development Engineer Intern, Development Department — June 2021-September 2021
- Acted in a project to develop a PC application for a client company, working as a team member on back-end development leveraging Java
- Built back-end architecture of application using Spring Framework to accomplish the main business logic, including user authentication, service request processing and order management module development
- Integrated and optimized database management systems by communicating with databases operating JDBC to handle user data storage, request processing, and product information queries
- Executed RESTful API with Spring Boot for supporting front-end interaction with the server
- Completed the development of several functional modules in the back-end, ensured time consumption of the project decreased 15% compared to the plan, and the work accomplished contributed positively to the team's development efficiency

ACADEMIC PROJECTS

RL Based Planning of a Self-Driving Car in CARLA — Liverpool, UK
Individual Project — September 2022-May 2023
- Applied DQN (Deep Q-Network) reinforcement learning algorithms to train a self-driving car's planner in a simulated urban traffic environment generated by CARLA simulator. The goal is to make the error rate of the trained model below 10%
- Applied training of neural network models such as CNN and Xception, leveraging TensorFlow framework and comparing the data obtained through Tensorboard. Focused on evaluating and refining RL algorithms to enhance the vehicle's performance in obstacle avoidance and road following
- Achieved the goal of vehicle learning from the environment to improve its performance, controlled the error rate around 7%, and proved the effectiveness and potential of the DQN algorithm
- Github: https://github.com/Komorebi452/Project-RL-Based-Planning-of-a-Self-Driving-Car-in-CARLA

Digital Transformation of Local Textile and Garment Industry — Liverpool, UK
Developer — November 2021-August 2022
- Conducted research on the digital transformation of the apparel industry, and identified ways to create an online library to serve the industry in a region. Specialized in back-end development, and implemented the communication forum submodule operating Java
- Set WebSocket to implement real-time information distribution between users, applied multi-threading and asynchronous processing to improve message handling in highly concurrent situations, and used JDBC to make database integration for optimizing data storage and query performance
- Executed testing, communicated with other members and fixed two problems of episodic delay and loss of messages through adjusting the reconnection mechanism and message acknowledgement flow of WebSocket