ZEJIN WANG

+86 18868675188 | wangzejin1504@gmail.com

EDUCATION

University of Bristol **Bristol，UK**
Master of Science in Robotics 2019.09-2020.12
- Merit Classification

Zhejiang University **Hangzhou, China**
Bachelor of Engineering in Mechanical Engineering 2015.09-2019.07
- Cumulative GPA: 3.76/4.0
-

PROFESSIONAL EXPERIENCE

Cowa Robot **Shanghai, China**
Algorithm Engineer at R&D Department 2022.02-Present
- The company is the leading provider for self-driving solutions focused on city clean-up in China
- Developed decision-making and planning algorithms for a sidewalk cleaning robot as the primary responsibility
- Established the prediction system with the judgement criteria according to the features of the obstacles on the sidewalk and at the intersection to predict its path
- Established the obstacles avoidance system with rule-based planner for normal cases and learning-based planner for corner cases
- Applied MLP to extract environment features and PPO to train the agents
- Applied curriculum learning with Hybrid A* to improve model training speed and accuracy
- Managed to launch and adapt the robot with prediction and obstacles avoidance system in a 2km-long sidewalk route in Shanghai

JAKA **Shanghai, China**
Algorithm Engineer at R&D Department 2021.05-2022.01
- The company develops collaborative robotic arms and provides intelligent solutions
- Designed an adaptive algorithm to be applied to the collision detection of collaborative robots based on the base sensor, which reduces the collision force detection threshold by 50%, and the frequency of false alarm collisions to 0
- Designed and developed the overall functions of a massage platform based on a composite robot (robotic arm & automated vehicle) which was displayed at the China International Industrial Fair
-

RESEARCH ACTIVITY

Modelling of Capture Decision by POMDP **Bristol, UK**
Dissertation Project 2020.05-2020.10
- Designed a human-computer interaction game where the computer observed the movement of color blocks and human hands
- Processed coordinate information of hundred groups of hands and color blocks to remove the error noise and transformed the coordinate information into trajectory information as the basis for judging human actions
- Extracted a series of features required in POMDP method from trajectory information and set the values of transformation and reward functions to verify the success rate of human-computer cooperation
- Defined 16 observation states, 16 actual states, 8 actions including their transformation and reward functions and built mathematical model with Matlab
- Built a decision model to respond to the observed information with game success rate of 90%

Structure Design of Humanoid Robot's Shoulder and Neck **Hangzhou, China**
Dissertation Project 2018.12-2019.06
- Built a shoulder *Dissertation* neck hardware platform of humanoid robot which was used as a mannequin to try clothes for buyers
- Replaced electric motor by pneumatic structure for the driver due to its advantages of small volume and light weight which doubled the number (9-18) of new drivers
- Designed flexible surface structures and connection modes and performed control programming with Arduino

Cutting Tool Wear Detection **Hangzhou, China**
Individual Project (Students Research Team Project) 2016.12-2017.06
- Developed a system to extract cutting tool feature from images with computer vision method
- Achieved detection accuracy greater than 90%

ADDITIONAL INFORMATION

Awards and Scholarships: From 2016 to 2018, won the Excellent Student Scholarship of Zhejiang University
Computer Skills: C++ (experienced), Matlab (experienced), Pytorch (familiar), Python (familiar), ROS (familiar)