Qianqian Yang

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EDUCATION

Carnegie Mellon University **Pittsburgh, PA**
Master of Science in Mechanical Engineering - Research 2023.08-2025.05 (Expected)

- Cumulative QPA: 4.0/4.0
- Related Modules: Robot Localization and Mapping, Computer Vision, AIML for Engineers

University College London **London, United Kingdom**
Bachelor of Engineering in Engineering - Mechanical 2020.09-2023.06

- UK First Class Honors, US Scale: 3.933/4.0
- Related Modules: Machine Learning for Robotics, Introduction to Robotics, Mathematical Modelling and Analysis, Design and Professional Skills

EXPERIENCE

CERLAB, Carnegie Mellon University **Pittsburgh, PA**
Research Assistant 2024.05 – 2024.08

- Write ROS1 wrapper for Spot control and data acquisition
- Implemented YOLO to detect and map window frames
- Implemented LiDAR-based mapping and exploration algorithms in construction-like scenarios

Bosch Powertrain Systems Co, Ltd (RBCD) **Wuxi, China**
Rail Intern, MOE 4.3 2021.07 – 2021.09

- Updated Working Instruction according to organizational change and risk assessment
- Created inventory management system using EXCEL
- Visualized the production data using Power BI to improve the efficiency of daily meetings

RESEARCH EXPERIENCE

Semantic Mapping with Legged Robots, *Master Research Thesis* 2023.10-present

- Created the simulation environment for heterogeneous robots using NVIDIA Isaac Sim
- Implemented mapping and exploration algorithms on UAV and UGV in the simulator
- Developed the lidar-camera fusion algorithm for the Spot system
- Implemented YOLO and integrated with LiDAR-based SLAM method to generate semantic maps

2023 Virtual RobotX Competition, *Team Member* 2023.07-2023.11

- Worked on the standardization of the code layout and version control with C++ and ROS2
- Created Docker Images and tested performance of each task
- Implemented the USV keyboard control and robot localization modules in Gazebo simulation
- Implemented Butterworth filter and line-of-sight guidance law to perform acoustic perception

UAV Indoor Visual SLAM, *Individual Research* 2022.11-2023.07

- Assembled and Configured HEX-TD650 Quadrotor platform using Mission Planner
- Performed indoor and outdoor test flights after setting up the remote controller
- Setup ROS1 Drivers for the DJI Tello Platform
- Implemented fiducial and ORBSLAM3 algorithms on Tello in both Gazebo and the real world
- Applied trajectory generation methods for drone navigation in the simulator

SKILLS

- Engineering Software: Fusion 360, ANSYS, Abaqus, Mission Planner, Q Ground Control, ROS1, ROS2, Gazebo, Isaac Sim
- Programming: Python, C++, MATLAB