

Zihan Wang

zihanw600@gmail.com | Website | Linkedin | Github

Education

The Chinese University of Hong Kong <i>M.Sc. in Robotics</i>	Aug 2025 – Nov 2026
Beihang University <i>B.S. in Automation Engineering</i> <ul style="list-style-type: none">GPA: 88/100 (3.7/4.0)	Sep 2021 – Jun 2025

Publications and Patents

Plasma-propelled ultra-quiet flying robotic system and power combination control method	2024
Yixing Zhang, Zihan Wang , Jiawei Zhang, Xuanlin Fan, Zhijun Li, Shaoping Wang	

Research Experience

Tsinghua Laboratory of Brain and Intelligence , Tsinghua University Research Intern <ul style="list-style-type: none">Topic: 2D&3D SLAM algorithms for autonomous car.	Mar 2025 – Jun 2025 Advisor: Jia Liu
Department of Mechanical Engineering , National University of Singapore Research Intern(Remote) <ul style="list-style-type: none">Topic: 6-Dof grasp based on VLA model.	Jul 2023 – Dec 2023 Advisor: Wenshuo Wang

Industry Experience

Beijing Kaiyun Technology Co. , Beijing <ul style="list-style-type: none">Designed scripted test programs with LUA on the Semi-Physical Simulation Test Software ETESTAccomplished semi-physical simulation on an embedded system lab box to design a smart clock with temperature and humidity sensing capabilities	Jul 2024 – Sep 2024
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Projects

Wheel-legged Robot <ul style="list-style-type: none">Designed a comprehensive embedded control architecture on STM32H7 MCU, leveraging its high computational capabilities for real-time motion control and attitude stabilization.Implemented cascaded PID control loops for precise servo motor position control, with carefully tuned parameters for optimal performance in different operating conditions.Developed an LQR-based state feedback controller for attitude stabilization, maintaining balance during locomotion by continuously adjusting leg positions based on IMU feedback.Tools Used: STM32, MIT-driven brushless servo motor; Solidworks, LQR&PID Control	Code
VLA Navigation Car <ul style="list-style-type: none">Implemented 2D SLAM with Cartographer, enabling high-accuracy localization and mapping for improved Nav2 autonomous navigation capabilities on NVIDIA Jetson®.Designed URDF models for mobile robots and conducted simulations in Isaac Sim and Gazebo for navigation, semantic segmentation, and other tasks to facilitate real-world deployment.Implemented real-time ESDF and other occupancy map generation using NVBlox with a RealSense camera, enabling robust robot navigation, collision avoidance, and detailed scene understanding for enhanced autonomy.Tools Used: NVIDIA Jetson®, Intel® Realsense™; ROS2(IsaacROS), Solidworks, IsaacSim	Code

Treasure Hunting Car	Code
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- Created a car with Arduino main control board and ESP32 communication board.
- Achieved fast and automatic route design and navigation that avoids randomly positioned obstacles, using proportional-integral-derivative (PID) control and Dijkstra’s algorithms.
- Utilized OpenCV libraries to binarize and rectify the competition field to generate color block coordinates for target tracking.
- Tools Used: Arduino, ESP32; OpenCV, A* Algorithm

Zhi Xing Mini Car

Demo

- Designed and developed an autonomous navigation robot system based on ROS, supporting real-time LiDAR obstacle avoidance, SLAM mapping, and path planning.
- Deploying 2D SLAM algorithm for real-time debugging and visualization of map construction and path planning to ensure precision and reliability.
- Integrated Baidu Voice Recognition SDK to enable voice command features, enhancing human-robot interaction and control.
- Tools Used: Vehicle-mounted LiDAR; ROS, OpenCV, Baidu Voice Recognition SDK

Skills

Programing: C/C++ , Python, Pytorch, MATLAB

Robotics Tools: ROS/ROS2, OpenCV, PCL, IsaacSim, Gazebo, Mujoco

Hardware: Solidworks, Fusion360; Multisim; STM32, ESP32, Arduino, NVIDIA Jetson®; 3D Printing

Language: TOEFL:101 (R:26 L:25 W:27 S:23), \LaTeX

Awards

National College Students Innovation and Entrepreneurship Training Program	2024
Academic Excellence Award	2024
Academic Excellence Award	2023