

Xuanbin Peng

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EDUCATION

Harbin Institute of Technology

Second-year Undergraduate in Automation

- CGPA: 95.44/100 Ranking: 2/256

Shenzhen, CHN

Sep. 2021 – now

RESEARCH EXPERIENCE

Undergraduate Research Assistant

Robotics and Control Lab

Supervisor: Prof. Xiaogang Xiong

Co-Supervisor: Ms. Tianlin Zhang

Aug. 2022 – Present

Harbin Institute of Technology, Shenzhen

School of Mechanical Engineering and Automation

School of Mechanical Engineering and Automation

- Developing an quadruped manipulation platform operating in dynamic environments.
- Model Predictive Controller joint torques control for quadruped manipulator to track dynamic targets.
- Robust super-twisting observer for dynamic object velocities estimation without depth information.

SELECTED PROJECTS

A Vision-Guided UAV for Precision Targeting of Moving Objects

Dec.2021–Feb.2022

Critical HIT Lab

HITSZ

- * High-speed flight capabilities for fast moving objects targeting.
- * Vision-based automatic aiming and tracking system with high accuracy and robustness against interference.
- * Adaptive control algorithms for improved resilience and adaptability during flight and shooting operations.

A Versatile Mobile Robot With a Visual-aided Suction Gripper

Apr.2022–Aug.2022

Critical HIT Lab

HITSZ

- * Three-DOF suction gripper: Enhanced grasping flexibility and precision.
- * Multifunctionality: Versatile robot for various tasks.
- * Vision-based alignment: Improved accuracy and efficiency in positioning.

A Visualizing Pandemic Simulator for Analyzing Epidemic Dynamics

Jan.2022–Feb.2022

Advisor: Prof. Xiaojun Wu

HITSZ

- * Interactive visualization interface.
- * Improved population modeling using a normal distribution model.
- * Optimized simulation performance with quadtree collision detection algorithm.

A Hybrid Legged-Wheeled Robot with Robustness and Efficiency

Apr.2022–Aug.2022

NG.XY Lab

HITSZ

- * Hybrid legged-wheeled robot design for improved mobility and terrain adaptability.
- * Integration of LQR and VMC control methods for enhanced control performance.
- * Optimization of robot parameters for optimal efficiency and robustness.

HONORS & AWARDS

National Scholarship.	2022
National First Prize in RoboMaster2022 Robotics Contest.	2022
National Second Prize in RoboMaster2022 Engineering-Mining-Challenge.	2022
Fisrt-Class Undergraduate Acadamic Scholarship. (Ranking 1st)	2022
Pacemaker to Merit Student.	2022
Excellent League Member.	2022
"Mechatronics Orator" Speech Contest, Champion	2021

SKILLS

Languages: English (*CET-6* :604), Mandarin Chinese (native)
Programming: C/C++, Python, HTML, JavaScript
Tools: Git, MATLAB/Simulink, PyTorch, ROS, VS Code, \LaTeX