Xuanbin Peng

Contact: xuanbin.peng@gmail.com
Website: https://peng-bryant.github.io

Education

Harbin Institute of Technology Shenzhen, CHN
Second-year Undergraduate in Automation *Sep. 2021 – now*

- CGPA: 95.44/100 Ranking: 2/256

Research Experience

Undergraduate Research Assistant Aug. 2022 – Present
Robotics and Control Lab Harbin Institute of Technology, Shenzhen
Supervisor: Prof. Xiaogang Xiong *School of Mechanical Engineering and Automation*
Co-Supervisor: Prof. Jie Mei *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

Excellent Student. 2023

"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