Xuanbin Peng

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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