Xilin Zhang

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Education

Carnegie Mellon University Aug 2024 – Present
MS in Mechanical Engineering - Robotics and Control Systems

- GPA: 4.0/4.0
- **Coursework:** Robot Learning, Optimal Control, Reinforcement Learning, Computer Vision, C++

Tianjin University Sept 2020 – Jun 2024
Bachelor of Engineering in Mechanical Design, Manufacture and Automation

- GPA: 3.72/4.0

Publications

- Zhang, X., Tian, W., Huo, M., **Zhang, X**. (2023). Kinematic Calibration of Stable Platform Based on Joint Space Configuration Optimization. *Journal of Tianjin University (Science and Technology)*. DOI: 10.11784/tdxbz202209021
- Zhang, X., Tian, W., Zhao, K., Wang, L.,**Zhang, X**. (2022). Kinematic Calibration of 3-UPS/S Stabilized Platform Based on RBF Neural Network. *Journal of Tianjin University (Science and Technology)*. DOI: 10.11784/tdxbz202206006

Projects

Research Assistant, Carnegie Mellon University, Robotics Institute *Aug 2024 – Present*

- **Vision-based Grasping System with GraspNet** *Jul 2025 – Aug 2025*
  Developed a grasping system integrating a ZED stereo camera with an xArm robotic arm. Applied GraspNet for grasp pose prediction and validated on real multi-object grasping tasks.
- **Visual Servoing with ROS2** *Aug 2025– Aug 2025*
  Built a ROS2-based visual servoing system with ZED and xArm. Achieved real-time ArUco marker tracking and improved trajectory stability through closed-loop control.
- **TriFinger Platform with Proprioception** *May 2025 – Present*
  Implemented a TriFinger manipulation platform in MuJoCo with impedance control. Integrated proprioception and force estimation to enhance precision and Sim2Real robustness.

Research Assistant, Tianjin University, Mechanical Engineering *Mar 2023 – May 2024*

- **Kinematic Calibration of a Stabilized Platform** *Dec 2022 – Jun 2023*
  Modeled error sources and optimized joint configurations for a shipborne stabilized platform. Improved stability and reliability through calibration and experiments.
- **Innovative Design of a DBS Neurosurgical Mechanism** *Jun 2022 – Jun 2023*
  Designed and prototyped a novel deep brain stimulation mechanism. Completed 3D modeling, dynamic analysis, and prototype validation for neurosurgical applications.

Experience

Industrial Robot Engineer Intern *Shenyang, China*
Siasun Robot & Automation Co., Ltd. *June 2023 – July 2023*

- Contributed to the design and verification of industrial robotic arms adaptable to multiple environments.
- Performed structural strength analysis and developed control programs, enhancing system stability and application scalability.

Skills

Languages: C++, Python, MATLAB

Tools: Solidworks, Fusion, PyTorch, OpenCV, ANSYS, ROS2