Zhi (Leo) Wang

tx.leo.wz@gmail.com | tx-leo.github.io | TX-Leo | tx-leo

Education

Tsinghua University *Beijing, China*

B.Eng. in Electronic Engineering *Sep. 2020 - Present*

Publications

DoorMan: Closed-Loop Task Planning and Manipulation for Door Openning in the Wild with Haptic Feedback

Zhi Wang*, Yuchen Mo*, Shengmiao Jin, Wenzhen Yuan

*IEEE International Conference on Robotics and Automation (**ICRA**)* , 2025, Under Review

[Paper], [Video], [Code], [Website]

KOSMOS-E: Learning to Follow Instruction for Robotic Grasping

Zhi Wang*, Xun Wu*, Shaohan Huang, Li Dong, Wenhui Wang, Shuming Ma, Furu Wei

*IEEE International Conference on Intelligent Robots and System (**IROS**)* , 2024

[Paper], [Video], [Code], [Website]

Research Experience

University of Illinois Urbana-Champaign (UIUC) *Champaign, USA*

Research Assistant at RoboTouch Lab, ADVISED BY PROF. Wenzhen Yuan *Mar. 2024 - Present*

- **Research Topics: Mobile Manipulation, Bimanual Humanoid Manipulation for Articulated Objects in Open World**
- Proposed DoorBot, a haptic-aware closed-loop hierarchical control framework that enables robots to explore and open different unseen doors in the wild. We test our system on 20 unseen doors across different buildings, featuring diverse appearances and mechanical types. Our framework achieves a 90% success rate, demonstrating its ability to generalize and robustly handle varied door-opening tasks.

Microsoft Research Asia (MSRA) *Beijing, China*

Research Intern at NLC Group, ADVISED BY Dr. Shaohan Huang *June. 2023 - Mar. 2024*

- **Research Topics: Multimodal Large Language Model for Robotic Grasping**
- Proposed KOSMOS-E, a Multimodal Large Language Model (MLLM) that leverages instruction-following robotic grasping data to enhance capabilities for precise and intricate robotic grasping maneuvers.

Tsinghua University, IIIS *Beijing, China*

Research Assistant at ISR-LAB, ADVISED BY PROF. Jianyu Chen *Sep.2021 - Sep. 2022*

- **Research Topics: Bipedal Humanoid Robot in the Wild**
- Introducing STAR1, a versatile humanoid robot capable of superior locomotion performance in diverse environments.

Industry Experience

EncoSmart Technology (Beijing) Co., LTD. *Beijing,China*

Robotics and Computer Vison Intern. [Code] [Website] *Apr. 2023 - Jul. 2023*

- Developed a core component of LAVA, a fully automated intelligent frying system, by creating a highly precise hand-eye calibration tool that enabled complex robotic manipulation tasks like magnet suction, mobile manipulator calibration, and visual grasping.

Honors & Awards (selected)

Jul. 2023 **Fourth Place in RoboCup 2023 Humanoid KidSize League (3 %)**, Team Member *Bordeaux,France*

Oct, 2024 **Tsinghua University Science and Technology Innovation Scholarship (1 %)** , (2021, 2023, 2024) *Beijing,China*

Oct, 2024 **Grand Prize of Tsinghua University International Study Scholarship (1 %)** , EE Department *Beijing,China*

Skills

Programming Python, C/C++, Linux, MATLAB, LaTeX

Frameworks PyTorch, NumPy, OpenCV, Git, Anaconda, Docker

Hardware Arduino, STM32, ESP32, FPGA, PCB Design, BLDC-FOC Driver

Robotics UR5e Robot Arm, FR5 Robot Arm, RealMan Humanoid Robot, Aelos Robot, ROS1/2, PyBullet, Realsense, Kinect