Xiaotong Li

TEL：+86 18136601928 | Email：xiaotongli0105@gmail.com | Website：bojack-bj.github.io

Education

Delft University of Technology (TU Delft) 2023/09-2025/09
Master in Robotics *GPA：8.4/10.0*

Nanjing University of Aeronautics and Astronautics 2019/09-2023/06
Bachelor in Aircraft Design and Engineering *GPA：89/100*

Korea Advanced Institute of Science & Technology(KAIST) 2022/07
Robotics summer school

Internships

TU Delft Autonomous Multi-Robots Lab 2024/09 – 2024/12
Research Intern on Real-time Point Cloud Completion for Robots Delft, The Netherlands

- Studied and implemented state-of-the-art point cloud completion methods using Transformer-based architectures on the ShapeNet dataset.
- Addressed the limitation of existing completion networks that require canonical poses by integrating a category-level object pose estimation module, enabling point cloud completion on real-world ZED camera data with arbitrary object orientations.

Bayer Crop Science Co. Ltd. 2023/07–2023/08
ROS Engineer Shanghai, China

- Using Isaac Sim to build the Digital Twin platform in the smart agriculture scenario to help improve the efficiency of algorithm iteration for agricultural robots.

BJROBOT Technology Co. Ltd. 2023/04–2023/06
ROS Assistant Engineer Beijing, China

- Multi-tasking development on TurtleBot3, including but not limited to reproducing the functions in Autorace Contest;
- Multi-sensor data fusion; road sign detection using traditional image feature extraction combined with SVM

Research Projects

Explicit World model for Open-world Object Manipulation 2025/01 – 2025/10
Supervised by Javier Alonso-Mora and Clarence Chen @ TU Delft [project link]

- This thesis presents a novel pipeline for performing open-world manipulation tasks on arbitrary objects, including object-level grasp pose prediction, world model construction and manipulation strategy sampling.
- The object-level grasp pose prediction module utilizes AnyGrasp, combined with Grounded-SAM and VLM-based open-set segmentation.
- A 3D AIGC model was used to create an object-level world model. The generated 3D model was aligned with real objects using camera observation data with respect to scale/position. The material information is also predicted to better set the physical properties in Isaac Sim.
- Manipulation strategies are sampled and evaluated in simulation using the constructed world model, and successful candidates are selected for execution in the real world.

Two-stage Multi-UAV Planning Solution Combining A*, Model Predictive Control, and Artificial Potential Field

2023/12–2024/01

Supervised by Javier Alonso-Mora @ TU Delft [project link]

- We present a global and local two-stage multi-UAV planning solution that incorporates A*, model predictive control (MPC), and artificial potential field (APF) to achieve the path planning of UAV clusters in dynamic environments. This navigation solution can empower multiple UAVs to avoid obstacles and collaborate in complex environments.

Model Predictive Control Approach for Multi-UAVs Planning and Motion Control

2024/03-2024/04

Supervised by Sergio Grammatico @ TU Delft [project link]

- We implemented and simulated a Model predictive control (MPC) approach for multi-UAVs control. A state-based MPC approach for signal UAV position control was designed and was used to explore the effect of parameters on the results.
- We designed a path-planning method and an output MPC method with trajectory tracking and collision avoidance for multiple UAVs in complex environments. A stability analysis is also performed to prove the stability of the approach. Project link

Competitions

RoboMaster2020 (Online), second prize 2020/08

RoboCup China Open (Medical robots track), third prize 2020/11

The 6th Jiangsu Provincial Engineering Training Comprehensive Ability Competition for College Students, second prize 2021/04

RoboMaster2021 (Central Division), second prize 2021/08

RoboMaster2021 (National), third prize 2021/11

RoboCup China Open (3D detection), third prize 2022/04

Awards

Received multiple academic honors at Nanjing University of Aeronautics and Astronautics, including: First-Class Academic Scholarship ×3, Second-Class Excellent Student Scholarship ×2 Merit Student Honor ×2

Languages

English: C2 Reading, C1 Writing, Listening & Speaking

Chinese: Native

Skills

Programming: Python, C++, Pytorch, ROS, Matlab

Hobbies

- Photography, music, and outdoor activities.
- Completed a 7-day solo backpacking trip in the Swiss Alps and a 9-day Tour du Mont Blanc trek.
- Maintain a healthy balance between academics, physical training, and personal hobbies.