

# Dayou Li

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## EDUCATION

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**Department of Mechanical Engineering, Texas A&M University**

*College Station, USA*

Ph.D. student in Mechanical Engineering

*Aug. 2025 - Present*

Advisor: [Dr. Zhiwen Fan](#) & [Minghui Zheng](#)

**School of Control Science and Engineering, Shandong University**

*Jinan, China*

M.Eng. in Electronic Information

*Sept. 2022 - Jun. 2025*

Advisor: [Prof. Wei Zhang](#)

GPA: 87/100

**School of Engineering, Northeast Agricultural University**

*Harbin, China*

B.Eng. in Mechanical Engineering

*Sept. 2018 - Jun. 2022*

GPA: 88/100

Ranking: 1/18 (Agricultural Mechanization and Automation Honors Class)

## PUBLICATIONS

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- [1] **Dayou Li\***, Lulin Liu\*, Bangya Liu, Shijie Zhou, Jiu Feng, Ziqi Lu, Minghui Zheng, Chenyu You, Zhiwen Fan, “Egocentric World Model for Photorealistic Hand Object Interaction Synthesis”, *European Conference on Computer Vision (ECCV)*, under review, 2026.
- [2] **Dayou Li**, Jiuzhou Lei, Hao Wang, Lulin Liu, Yunhao Yang, Zihan Wang, Bangya Liu, Minghui Zheng, Zhiwen Fan, “Learning Actionable Manipulation Recovery via Counterfactual Failure Synthesis”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, under review, 2026.
- [3] Lulin Liu\*, **Dayou Li\*** Yiqing Liang, Sicong Jiang, Hitesh Vijay, Hezhen Hu, Xuhai Xu, Zirui Liu, Srinivas Shakkottai, Manling Li, Zhiwen Fan, “EgoTL: Egocentric Think-Aloud Chains for Long-Horizon Tasks”, *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Findings*, 2026.
- [4] Xinmiao Xiong, Bangya Liu, Hao Wang, **Dayou Li**, Nuo Chen, Andrew Feng, Mingyu Ding, Banerjee Suman, Yang Zhou, Zhiwen Fan, “Accelerating Transformer-Based Monocular SLAM via Geometric Utility Scoring”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, under review, 2026.
- [5] Chenkun Zhao, Shuo Yang, **Dayou Li**, Ran Song, Xiaolei Li, Pengkun Wei, Wei Zhang, “Semantic-Aware Multi-Object Spatial Coordination: Bridging Human Intentions and Intelligent Robotic Manipulation,” *IEEE/ASME Transactions on Mechatronics (T-MECH)*, under review, 2025.
- [6] **Dayou Li**, Chenkun Zhao, Shuo Yang, Ran Song, Xiaolei Li, Wei Zhang, “MPGNet: Learning Move-Push-Grasping Synergy for Target-Oriented Grasping in Occluded Scenes”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Abu Dhabi, UAE, 2024.
- [7] Pengkun Wei, Shuo Cheng, **Dayou Li**, Ran Song, Yipeng Zhang, Wei Zhang, “Coarse-to-Fine Detection of Multiple Seams for Robotic Welding”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Abu Dhabi, UAE, 2024.
- [8] **Dayou Li**, Chenkun Zhao, Shuo Yang, Lin Ma, Yibin Li, Wei Zhang, “Learning Instruction-Guided Manipulation Affordance via Large Models for Embodied Robotic Tasks”, *IEEE International Conference on Advanced Robotics and Mechatronics (ICARM)*, Tokyo, Japan, 2024.
- [9] **Dayou Li**, Chenkun Zhao, Shuo Yang, Lin Ma, Yibin Li, Wei Zhang, “A Mobile Manipulation System

for Automated Replenishment in the Field of Unmanned Retail,” *IEEE International Conference on Mechatronics and Automation (ICMA Best Paper Finalist)*, Harbin, China, 2023.

- [10] Shuo Yang, **Dayou Li**, Chenkun Zhao, Pengkun Wei, Yibin Li, Wei Zhang, “Multi-class 4-DoF Carton Box Detection for Heterogeneous Robotic Container Unloading,” *IEEE International Conference on Real-time Computing and Robotics (RCAR Best Paper Finalist)*, Datong, China, 2023.

## PROJECTS

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### 3D Bin Packing and Unpacking in Logistics Industry [Demo]

Since August 2022, facing the actual project requirements of [BlueSword Co., Ltd](#), we have carried out a series of work such as robotic depalletizing, robotic online and offline palletizing, communication, and interaction development between WCS and the host computer. The relevant algorithms were deployed and verified in the simulation environment and the real environment of the lab, and then were actually deployed in the pilot plant of BlueSword, which has achieved good results.

### Vision-Based Intelligent Welding Robot [Demo]

Based on the cooperation with [Aotai Electric Co., Ltd](#), we have developed a set of vision-based intelligent welding robots. We propose an automatic welding pipeline that synthesizes RGB images and point cloud information to generate welding paths and combine them with a laser seam tracker for precision welding. We have already tested it in the lab and in the factory. A related paper has been submitted to IROS2024.

### Designing Mobile Platform for Language-Guided Robotic Manipulation [Demo]

We present a visual scene representation built with large visual-language models to generate a feature representation of the environment that can match map information with natural language queries, which will be used to highlight the destinations that are most relevant to the instructions. Combined with large language models, our system can parse language instructions into action sequences for a robot to follow, and accomplish goal navigation with querying the scene representation. In practice, we chose the composite mobile robot from [RealMan Intelligent Technology Co., Ltd](#) and added a lifting function.

## PROFESSIONAL EXPERIENCE

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### Teaching Assistant

Aug. 2025 – Present

J. Mike Walker '66 Department of Mechanical Engineering, Texas A&M University

- Serve as Teaching Assistant for **MEEN 365: Dynamic Systems & Control Lab**.
- Independently instruct and manage **three lab sections** (50+ students in total), covering system modeling, PID control, and real-time implementation on Quanser twin-tank platforms.
- Lead pre-lab lectures, live demonstrations, and in-lab troubleshooting sessions; evaluate lab reports and provide feedback on experimental design and control performance.

## REVIEW SERVICE

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**Conference:** Humanoids 2025, IROS 2024, ICARM 2024, ICRA 2024, ICMA 2023

**Journal:** T-ASE