JINXUAN ZHU

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EDUCATION BACKGROUND

Harbin Institute of Technology, Shenzhen *Sep. 2021-Jul. 2025*
BEng in Automation *Shenzhen, China*

- **GPA:** 89.7/100 (top10%)
- **Exchange：University of Oxford** (*Aug 2023*); **City University of Hong Kong** (*Jan – May 2025*)

National University of Singapore *Aug. 2025-Jan.2027(expected)*
Master of Computing in Artificial Intelligence (Mcomp AI) *Singapore*

RESEARCH INTEREST

My research focuses on **robotic manipulation**, particularly on integrating foundation models with classical perception and control to enable adaptive and dexterous manipulation. I am also interested in robotic hardware design and task and motion planning.

PUBLICATIONS

[1] **Jinxuan Zhu***, Zihao Yan*, Yangyu Xiao, Jingxiang Guo, Chenrui Tie, Xinyi Cao, Yuhang Zheng, Lin Shao, "SayWhen: Low-Cost Soft Robotic Wrist for Contact-Rich Manipulation". [Website] (Under Review) (Best Demo Finalist, IROS CIM Workshop 2025)

[2] **Jinxuan Zhu*,** Chenrui Tie*, Xinyi Cao*, Yuran Wang, Jingxiang Guo, Zixuan Chen, Haonan Chen, Junting Chen, Yangyu Xiao, Ruihai Wu, Lin Shao, "AdaptPNP: Integrating Prehensile and Non-Prehensile Skills for Adaptive Robotic Manipulation". [Website] (Under Review)

[3] Hanyi Zhao*, **Jinxuan Zhu***, Zihao Yan*, Yichen Li, Yuhong Deng, and Xueqian Wang, "Learning Generalizable Language-Conditioned Cloth Manipulation from Long Demonstrations". Accepted by International Conference on Intelligent Robots and Systems (IROS 2025) [Website] [Arxiv] [Code]

[4] Chenrui Tie*, Shengxiang Sun*, **Jinxuan Zhu**, Yiwei Liu, Jingxiang Guo, Yue Hu, Haonan Chen, Junting Chen, Ruihai Wu, Lin Shao, "Manual2Skill: Learning to Read Manuals and Acquire Robotic Skills for Furniture Assembly Using Vision-Language Models". Accepted by Robotics: Science and Systems (RSS 2025) [Website] [Arxiv] [Code]

[5] Chenrui Tie*, Shengxiang Sun*, Yudi Lin, Yanbo Wang, Zhongrui Li, Zhouhan Zhong, **Jinxuan Zhu**, Yiman Pang, Haonan Chen, Junting Chen, Ruihai Wu, Lin Shao. "Manual2Skill++: Connector-Aware General Robotic Assembly from Instruction Manuals via Vision–Language Models". (Under Review) [Website]

[6] Qi Liu*, Jingxiang Guo*, Sixu Lin, Shuaikang Ma, **Jinxuan Zhu**, Yanjie Li, "MASQ: Multi-Agent Reinforcement Learning for Single Quadruped Robot Locomotion". Accepted by International Conference on Machine Learning (ICML workshop 2025). [Arxiv]

RESEARCH EXPERIENCE

LinS Lab (Topic: Robotic Furniture Assembly) *Dec. 2024 - Present*
Research Assistant (Supervisor: Prof. Lin Shao, National University of Singapore) *Singapore*

- Targeting fully automatic furniture assembly, we explores multiple aspects of furniture assembly. **Manual2Skill (P.4, RSS'25)** and **Manual2Skill++ (P.5, UR)** focus on extracting task-relevant information from manuals to guide planning and provide target poses for assembly. **SayWhen (P.1, UR)** aims to develop a low-cost, plug-and-play force sensor for enabling contact-rich tasks. **AdaptPNP (P.2, UR)** integrates prehensile and non-prehensile skills to achieve adaptive manipulation in complex environments.

AI&Robotics Lab (Topic: Generalizable Cloth Manipulation) *Jul. 2024 – Mar. 2025*
Research Assistant (Supervisor: Prof. Xueqian Wang, Tsinghua University SIGS) *Shenzhen, China*

- Developed a method leveraging Large Language Models (LLM) to decompose benchmark and discover basic skills, and subsequently recompose them to multi-step unseen tasks. **(P.3 IROS'25)**

Reinforcement Learning Group Lab (Topic: Multi-Agent Reinforcement Learning for Quadruped) *Nov. 2023 – Oct. 2024*
Research Assistant (Supervisor: Prof. Yanjie Li, HITSZ) *Shenzhen, China*

- Applied multi-agent reinforcement learning for quadruped robot locomotion, achieving faster training convergence and enhancing robustness in real world experiments. **(P.6 ICML'25 Workshop)**

INTERNSHIP

Dobot Robotics *Jul. 2024– Nov.2024*
Robot Algorithm Development Engineer (R&D Division - Core Technology Research Department) *Shenzhen, China.*

RoboScience *Mar. 2025– Jul.2025*
Robot Algorithm Intern *Shenzhen, China.*

AWARDS

- **Academic Awards:** 2023-2024 Second Prize Scholarship for Undergraduate Student (15%), 2021-2022 Outstanding Student, 2021-2022 Third Prize Scholarship for Undergraduate Student (25%)

MISCELLANEOUS

- **Professional Skills:** Python, C++, C, Linux, IsaacSim, Solidworks, Blender, ROS, Arduino, STM32.
- **Language:** Chinese (native), English (IELTS 7.5 (6.5)), French (amateur)
- **Service:** Reviewer for ICRA IROS