Guo Jingxiang

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Education

Harbin Institute of Technology, Shenzhen **Sep. 2021 – Jul. 2025**
Bachelor of Engineering in Automation — GPA: 3.7/4.0 (Ranking: Top 20%) *Shenzhen, China*

National University of Singapore **Jul. 2024 – May. 2025**
NGNE Program *Singapore*

Research Experience

RLGroup Lab **Jun 2022 – Jun 2024**
Research Assistant — Advisor: Yanjie Li *Shenzhen, China*

- We investigate the effect of logarithmic bases on policy gradient methods in deep reinforcement learning, introducing the Logarithmic Basis Policy Gradient (LBPG) and Adaptive LBPG algorithms.
- We propose a novel method to improve locomotion learning for a single quadruped robot using multi-agent deep reinforcement learning (MARL).

LinS Lab **Jul 2024 – Present**
Research Assistant — Advisor: Lin Shao *Singapore*

- We propose a novel representation, $\mathcal{D}(\mathcal{R}, \mathcal{O})$, tailored for dexterous grasping tasks. This interaction-centric formulation transcends conventional and object-centric paradigms, facilitating robust generalization across diverse robots, objects, and environments.
- We developed Mobot, a mobile manipulation robot, to serve as a platform for conducting dual-arm manipulation experiments in controlled environments.
- We developed a teleoperation data collection system to gather real-world data for training dexterous manipulation with multi-tactile fusion.

Publications

1. **Jingxiang Guo***, Jiayu Luo*, Zhenyu Wei*, Yiwen Hou, Zhixuan Xu, Xiaoyi Lin, Chongkai Gao, Lin Shao, "**TelePreview: A User-Friendly Teleoperation System with Virtual Arm Assistance for Enhanced Effectiveness**". In submission.[Web]
2. Qi Liu*, **Jingxiang Guo***, Sixu Lin, Shuaikang Ma, Jinxuan Zhu, Yanjie Li, "**MASQ: Multi-Agent Reinforcement Learning for Single Quadruped Robot Locomotion**". In submission.[arXiv]
3. Zhenyu Wei*, Zhixuan Xu*, **Jingxiang Guo**, Yiwen Hou, Chongkai Gao, Zhehao Cai, Jiayu Luo, Lin Shao, "**$\mathcal{D}(\mathcal{R}, \mathcal{O})$ Grasp: A Unified Representation for Cross-Embodiment Dexterous Grasping**". ICRA 2025. CoRL 2024 @ MAPoDeL, **Best Robotics Paper Award** & **Oral Presentation**. CoRL 2024 @ LFDM, **Spotlight Presentation**. [Web]
4. Qi Liu, **Jingxiang Guo**, Zhongjian Qiao, Pengbin Chen, Jinxuan Zhu, Yanjie Li, "**Logarithmic Function Matters Policy Gradient Deep Reinforcement Learning**". Accepted to DAI 2024 [Oral].
5. Lixin Xu, Zhewei Gui, Zixuan Liu, Zeyu Jiang, Zixuan Liu, **Jingxiang Guo**, Zhixuan Xu, Chongkai Gao, Zhixuan Xu, Lin Shao, "**Learning Synergistic Dexterous Singulation in Cluttered Environments**". In submission to IROS 2025.[Web]
6. 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**". In submission.[Web]
7. Haonan Chen, Junxiao Li, Ruihai Wu, Yiwei Liu, Chongkai Gao, Zhixuan Xu, Yiwen Hou, **Jingxiang Guo**, Zhenyu Wei, Siang Chen, Chenting Wang, Shensi Xu, Jiaqi Huang, Weidong Wang, Lin Shao, "**MetaFold: Language-Guided Cross-Category Garment Folding Framework via Trajectory Generation and Foundation Model**". In submission to IROS 2025.[Web]
8. Qi Liu, Jianqi Gao, Dongjie Zhu, Zhongjian Qiao, **Jingxiang Guo**, Pengbin Chen, Yanjie Li, "**Multi-Agent Target Assignment and Path Finding for Intelligent Warehouse: A Cooperative Multi-Agent Deep Reinforcement Learning Perspective**". In submission to IROS 2025.
9. Kuntian Dai, **Jingxiang Guo**, Nengfeng Liu, Guanyu Hou, Jinbin Guo, Junkai Wang, Ruiquan Dong, "**Momentum Prediction for Tennis Matches Based on Counter-Factual Analysis and Multi-LGBM**". National Patent, Published 2025.[Web]

Awards

Best Robotics Paper Award in CoRL 2024 @ MAPoDeL **Nov 2024**
National First Prize in RoboMaster University Championship (RMUC) **Mar 2023**
National First Prize in The 6th China Intelligent Robots Innovation Competition **Jul 2023**
Provincial First Prize in China Undergraduate Mathematical Contest in Modeling (CUMCM) **Sep 2023**
Honorable Mention in Mathematical Contest in Modeling (MCM) **Mar 2023**

Miscellaneous

Language: English (IELTS 7.5, GRE 321), Chinese (Native)
Academic Service: Reviewer for ICRA 2025
Programming Skills: Python, C/C++, MATLAB, HTML, CSS, Javascript
Tools:SOLIDWORKS, ROS, PCB Design, STM32, Arduino, WebXR, LaTeX
Interest: Experienced in trekking and climbing, forging a resilience will that stands unwavering