

# Chenrui Tie

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## EDUCATION

### National University of Singapore, Singapore

PhD Student in Computer Science

Aug 2024 - present

### Peking University, Beijing, China

Bachelor of Intelligence Science and Technology

Sept 2019 - June 2024

## PUBLICATIONS

\* denotes equal contribution

- [1] **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" *Robotics: Science and Systems(RSS)2025* [\[Project\]](#) [\[Paper\]](#)
- [2] **Chenrui Tie\***, Yue Chen\*, Ruihai Wu\*, Boxuan Dong, Zeyi Li, Chongkai Gao, Hao Dong. "ET-SEED: Efficient Trajectory-level SE(3) Equivariant Diffusion Policy" *International Conference on Learning Representations(ICLR)2025* [\[Project\]](#) [\[Paper\]](#)
- [3] Yue Chen\*, **Chenrui Tie\***, Ruihai Wu\*, Hao Dong. "EqvAfford: SE (3) Equivariance for Point-Level Affordance Learning" *Conference on Computer Vision and Pattern Recognition(CVPR) 2024 Workshop EquiVision* [\[Paper\]](#)
- [4] Zhixuan Xu\*, Chongkai Gao\*, Zixuan Liu\*, Gang Yang\*, **Chenrui Tie**, Haozhuo Zheng, Haoyu Zhou, Weikun Peng, Debang Wang, Tianyi Chen, Zhouliang Yu, Lin Shao. "ManiFoundation Model for General-Purpose Robotic Manipulation of Contact Synthesis with Arbitrary Objects and Robots" *International Conference on Intelligent Robots and Systems(IROS)2024, Oral* [\[Project\]](#) [\[Paper\]](#)
- [5] Ruihai Wu\*, **Chenrui Tie\***, Yushi Du, Yan Zhao, Hao Dong. "Leveraging SE(3) Equivariance for Learning 3D Geometric Shape Assembly" *International Conference of Computer Vision (ICCV) 2023* [\[Project\]](#) [\[Paper\]](#)
- [6] Gang Yang, Siyuan Luo, Yunhai Feng, Zhixin Sun, **Chenrui Tie**, Lin Shao. "Jade: A Differentiable Physics Engine for Articulated Rigid Bodies with Intersection-Free Frictional Contact" *IEEE International Conference on Robotics and Automation (ICRA) 2024* [\[Project\]](#) [\[Paper\]](#)

## RESEARCH EXPERIENCE

### Research on Robot Learning and Intelligent System Lab

PhD student, Advisor: [Prof. Lin Shao](#)

National University of Singapore

Jul 2024 - present

### Research on HyperPlane Lab

Undergraduate Research Assistant, Advisor: [Prof. Hao Dong](#)

Peking University

Dec 2022 - Jun 2024

### Research on Embodied Perception and InteractIon (EPIC) Lab

Undergraduate Research Assistant, Advisor: [Prof. He Wang](#)

Peking University

Aug 2021 - Nov 2022

## TECHNICAL SKILLS

- Programming:** Python, C++, Matlab
- Simulators:** SAPIEN, ISAAC SIM, ISAAC GYM, Nimble, DiffCloth, Open Dynamics Engine
- Physical Robot Experience:** Franka, Flexiv rizon, Xarm
- Deep Learning Framework:** PyTorch(Proficient)

## HONORS AND AWARDS

- Research Scholarship , *National University of Singapore* 2024
- Lee Wai Wing Scholarship , *Peking University* 2023
- Merit Student award, *Peking University* 2023
- Merit Student award, *Peking University* 2022
- Achievement Improvement award, *Peking University* 2021
- Qin-Jin Scholarship, *Peking University* 2020