Jinzhou Li

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Research interests

My research focuses on enabling robots to achieve **human-level dexterity** in complex environments by integrating multisensory intelligence with advanced control strategies and machine learning.

Education

2025 **Duke University** – Durham, NC
PhD in Robotics
Mentor: Prof. Xianyi, Cheng.

2022 – 2023 **Cornell University** – Ithaca, NY
M.Eng in Systems Engineering
Mentor: Prof. Maha, Haji.

2017 – 2021 **University of Vermont** – Burlington, VT
BS in Computer Science

Research experience

2025 **MIT, Multisensory Intelligence Group**
Mentor: Dr. Kaichen, Zhou.
Visuo-Tactile Manipulation.

2024 – 2025 **Peking University, PKU-Agibot Lab**
Mentor: Prof. Hao, Dong.
Tactile Dexterous Manipulation, Sim2Real, Real2Sim2Real

2022 – 2023 **Cornell University, SEA Lab & MIT, Engineering System Lab**
Mentors: Prof. Maha, Haji. & Prof. Daniel, Hasting.
1) System of Systems Concept for Effective Oceans to Near Space Observation
2) Hybrid Agent-Based Model and Discrete Event Simulation to Optimize AUV Fleet Operations

Honors and scholarships

2017 – 2021 Merit Scholars Award
Awarded for academic excellence; $5,000 per semester.

Publications

Paper (* denotes equal contribution):

6 **TwinAligner: Visual and Physical Real2Sim2Real All-in-one for Robotic Manipulation**
Hongwei Fan*, Hang Dai*, Jiyao Zhang*, **Jinzhou Li**, Qiyang Yan, Yujie Zhao, Xuanyu Lai, Hao Tang, Hao Dong
Submitted to the Conference on Robot Learning (CoRL), 2025.

6 **ClutterDexGrasp: A System for General Closed-Loop Dexterous Grasping in Cluttered Scenes**
Zeyuan Chen*, Qiyang Yan*, Yuanpei Chen*, Jiyao Zhang, Tianhao Wu, Zihan Ding, **Jinzhou Li**, Yaodong Yang, Hao Dong.
Submitted to the Conference on Robot Learning (CoRL), 2025.

4 **Adaptive Visual-Tactile Fusion with Predictive Force Attention for Dexterous Manipulation**
Jinzhou Li*, Tianhao Wu*, Jiyao Zhang, Zeyuan Chen, Haotian Jin, Mingdong Wu, Yujun Shen, Yaodong Yang, Hao Dong
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2025.

3 **SimLauncher: Launching Sample-Efficient Robotic Reinforcement Learning via Simulation Pre-training**
Mingdong Wu*, Lehong Wu*, Yizhuo Wu*, Weiyao Huang, Hongwei Fan, Zheyuan Hu, Haoran Geng, **Jinzhou Li**, Jiahe Ying, Long Yang, Yuanpei Chen, Hao Dong.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2025.

2 **Canonical Representation and Force-Based Pretraining of 3D Dexterous Visuo-Tactile Policy Learning**
Tianhao Wu, **Jinzhou Li***, Jiyao Zhang*, Mingdong Wu, Hao Dong.
IEEE International Conference on Robotics and Automation (ICRA), 2025.

1 **HGIC: A Hand Gesture Based Interactive Control System for Efficient and Scalable Multi-UAV Operations**
Mengsha Hu, **Jinzhou Li**, Runxiang Jin, Chao Shi, Lei Xu, Rui Liu.
IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), 2024.

Presentations:

1 **HGIC: A Hand Gesture Based Interactive Control System for Efficient and Scalable Multi-UAV Operations**
Jinzhou Li, Mengsha Hu, Lei Xu, Yibei Guo, Rui Liu
IEEE International Symposium on Multi-Robot & Multi-Agent Systems (MRS), 2023.

Teaching experience

Fall 2023 **Cornell University**
Teaching Assistant, Meta CS 4782: Intro to Deep Learning
Designed educational content for reinforcement learning, including slides and written/programming assignments, focusing on Markov Decision Processes (MDP), Q-Learning, and Policy Gradient, and Reinforcement learning from human feedback (RLHF).

Industry experience

2024 – 2025 **Agibot Inc.** – Beijing, CN
Research Intern

- Developed grasping strategies using reinforcement learning in Isaac Gym, designing observation/action spaces and reward functions while optimizing hyperparameters to achieve reliable object manipulation.
- Implemented and fine-tuned state-of-the-art robot learning models including diffusion-based variant policies, ACT, and Vision-Language-Action frameworks to enhance robotic understanding and execution capabilities.
- Engineered a comprehensive ROS-based teleoperation system that seamlessly integrated diverse hardware components (multi-fingered robotic hands, tactile sensors) and control algorithms, implementing precise finger-joint retargeting from human demonstrations and intuitive VR-based control interfaces for dexterous manipulation tasks.

Talks and tutorials

May 2025 — Canonical Representation and Force-Based Pretraining of 3D Dexterous Visuo-Tactile Policy Learning – Oral Presentation
ICRA 2025

April 2025 — AdapTac: Adaptive Visuo-Tactile Fusion with Predictive Force Attention for Dexterous Manipulation – Invited Talk
Peking University

Service

Reviewer
ICRA (2024, 2025)

Technical skills

Programming languages
Python, C++, Rust

Software
LaTeX, Git, ROS, PyTorch, Unreal Engine, IssacGym

Robot Experience
Leap Hand, Hello Robot, Franka, Aloha, Flexiv