Zhuoran Li

+86 151-8984-3657 | airplane@sjtu.edu.cn | iairplane.github.io

Research Interests

Robot learning; foundation model post-training; agentic robotics; multi-agent systems; tactile dexterous manipulation; robust world-model reinforcement learning.

Education

Shanghai Jiao Tong University (SJTU), Shanghai, China Aug. 2023 – Jun. 2027 (Expected)
B.Eng. in Software Engineering, School of Computer Science
Major GPA: **92.5/100**; Rank: **3/95**. Undergraduate researcher at the Institute of Parallel and Distributed Systems (IPADS), advised by Profs. Jinyu Gu and Haibo Chen.

Selected Publications

RoboHarness: A Memory-Augmented Policy Harness for Vision-Language-Action Model Robustness via In-Context Adaptation
Zhuoran Li, Zhiyang Li, Kaijun Zhou, and Jinyu Gu.
IROS, 2026. [Project] [Paper] [Code]

GKD-Recruiter: Jointly Modeling Social and Task Heterogeneity for Spatial Crowdsourcing via Graph Knowledge Distillation
Yucen Gao*, Zhemeng Yu*, Zhuoran Li*, Jianxiong Guo, and Xiaofeng Gao.
ICML, 2026. [Project] [Paper] [Code]

DRNCS: Dual-Level Route Generation Model Based on Node Contraction and Shortcuts
Zhuoran Li, Yucen Gao, Yu Yin, Xinle Li, Hui Gao, Xiaofeng Gao, and Guihai Chen.
ECML PKDD, 2025. [Paper] [Code]

ManiLadder: Benchmarking Robot Manipulation Through a Categorized and Multi-Level Task Ladder
Chongkai Gao*, Jieao Shi*, Zhaoyu Mu*, Zhuoran Li, Yudi Lin, Xuanwei Liu, Wei Ken Ng, Baiye Cheng, Anqi Chen, Kerun Liu, Xuchuan Huang, Shengjia Zhu, Nga Teng Chan, Xingyu Chen, and Lin Shao.
Under review at ICRA 2027. [Project] [Paper]
Outstanding Workshop Paper Award — IROS 2026 Bimanual Robot Learning Workshop

Algorithms for Shortest Path Tour Problem
Yucen Gao, Zhuoran Li, Jingyu He, Jun Fang, Hui Gao, Xiaofeng Gao, and Guihai Chen.
Theoretical Computer Science, 1054:115428, 2025. [Paper]
*Equal contribution.

Research Experience

The University of Hong Kong (HKU) Oct. 2026 – Present
Research Assistant | Advisor: Prof. Yi Ma

- **CaTS: Code as Tactile Supervisor** [Project] — Grounds robot agents in contact-rich manipulation: synthesizes stage-wise tactile supervisors from one RGB-D demonstration and tactile-pattern priors, compiled into a locally executable program; outperforms all baselines across 6 real-robot and 20 simulated tasks. *Under review at CVPR 2027.*

New York University (NYU) Aug. 2026 – Present
Research Intern | Advisor: Prof. Zhengyuan Zhou

- **DRWM: Reverse-KL Robust Targets for World-Model Reinforcement Learning** — Addresses tail failures hidden by mean world-model targets with a plug-in aggregator that upweights adverse sampled futures across four RL backbones; achieves the best CVaR10 and 100% success on WIMLE-Walk while preserving mean performance. *Under review at ICML 2027.*

Sharpa Robotics Oct. 2026 – Present
Research Intern | Mentor: Hao Ma

- **Tactile Agents for Dexterous Manipulation** — Explored the use of tactile agents for contact-aware reasoning and closed-loop control in dexterous manipulation.

Research Experience (continued)

ViTai Robotics May 2026 – Oct. 2026
Intern | Mentors: Yizhe Wu and Rui Li

- **Agentic Robot–Tactile Integration** — Explored architectures that fuse tactile feedback with agentic robot reasoning and control.
- **VTLA Post-Training** — Contributed to post-training vision-touch-language-action models for contact-rich manipulation.

Shanghai Jiao Tong University (SJTU) Jun. 2024 – Present
Undergraduate Researcher | Advisors: Profs. Xiaofeng Gao, Jinyu Gu, and Haibo Chen

- **RoboHarness: Memory-Augmented Policy Harness for VLA Robustness** — Built an inference-time reliability layer for frozen VLA policies using contrastive Dual-Memory retrieval and attribution-guided interventions; raised average success by 56.6 percentage points across three backbones. *IROS 2026.*
- **OpenHarmony Embodied Agent Systems** **NSFC-Funded | Student PI | RMB 100,000** Secured a nationally selected **NSFC** undergraduate research grant as **Student PI**; led research on embodied-agent systems for OpenHarmony.
- **GKD-Recruiter** — Framed spatial recruitment as heterogeneous multi-agent task allocation, matching agent capabilities and social influence to task demands through graph knowledge distillation and Rainbow DQN. *ICML 2026.*
- **DRNCS** — Built a hierarchical route-generation method for navigation agents on dense road graphs; node contraction and shortcut injection reduced planning to 0.3–0.8 ms per route and 3,356 routes/s. *ECML PKDD 2025.*
- **Shortest Path Tour Problem** — Implemented and benchmarked exact Stage and Global Dijkstra planners for agents visiting ordered waypoint sets, reaching up to a 50× speedup on million-node road networks. *Theoretical Computer Science, 2025.*

LinS Lab, National University of Singapore (NUS) Apr. 2025 – Dec. 2025
Research Intern | Advisor: Prof. Lin Shao

- **ManiLadder** — Developed simulation, data, and evaluation pipelines for 112 tasks across four calibrated difficulty levels spanning diverse embodiments and manipulation skills.

Awards and Honors

Grants	• **National Natural Science Foundation of China (NSFC)** — Basic Research Program for Undergraduate Students; **Student PI**, **RMB 100,000**, nationally selected	2026
	• **Chun-Tsung Foundation Award — Student PI**	2024
Paper Award	• **Outstanding Workshop Paper Award** — IROS Bimanual Robot Learning Workshop, "Scaling vs. Structure?"	2026
Honors	• **Zhiyuan Honor Scholarship**; **Academic Scholarship** (2024–2025)	2023–2025
	• **First Prize, Shanghai Undergraduate Mathematics Competition**	2024
	• **Jiangsu Province Excellent Student Award**	2023

Technical Skills

Programming	C++, Python, Java, JavaScript/TypeScript
AI and Robotics	PyTorch; reinforcement learning; world models; VLA and multimodal learning; tactile sensing; imitation learning; computer vision
Robotics Tools	ROS 2, MuJoCo, Isaac Sim/Lab, Gymnasium, Genesis
Systems and Tools	Linux, Git, LaTeX, React, Spring Boot, Nginx, Redis
English	TOEFL: 5.5; CET-4: 624; CET-6: 605