

Xian Nie

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🎓 Education

Shanghai Jiao Tong University (SJTU)

Sep. 2023 – Present

B.S. in Computer Science and Technology

GPA: 92.2/100 (Rank: 15/112)

Advisor: Prof. Junzhi Yan, Prof. Xiaosong Jia, Prof. WenChao Ding

🔬 Research Experience

GuidedVLA: Specifying Task-Relevant Factors via Plug-and-Play Action Attention

Robotics: Science and Systems (RSS) 2026, co-first author; SJTU ReThink Lab Nov. 2025 – Feb. 2026

- Implemented the key model components of GuidedVLA and took charge of simulation experiments.
- Designed a ControlNet-style residual adapter to disentangle object, skill, and geometry attention during decoding.
- From **68.2% to 75.4%** on **LIBERO-Plus** and **77.4% to 90.6%** on **RoboTwin 2.0**, with successful zero-shot transfer to a physical robotic arm.

TacForeSight: Force-Guided Tactile Prediction for Contact-Rich Manipulation

RA-L under review, co-first author; Research Intern, TARS

Mar. 2026 – May. 2026

- Implemented the complete training framework and model components, including temporal cross-attention and adaptive gating, for force-guided latent visuo-tactile dynamics prediction.
- Deployed a flow-matching action pipeline on a UFactory xArm7 at **20 Hz**, improving contact recovery across 5 manipulation tasks.

IPR-1: Interactive Physical Reasoner

CVPR 2026, RHOS Lab

Nov. 2024 – Nov. 2025

- Implemented a VQ-VAE-based action representation to align visual dynamics with action semantics.
- Integrated world-model rollouts into a GRPO training pipeline for physical reasoning in **3A-games**.

⚙️ Robotics Competitions & Projects

RoboMaster University Championship, Project Lead (Team JiaoLong)

Sep. 2023 – Aug. 2025

- Designed and implemented a **hierarchical decision system** for sentry robots, combining autoencoder, autoregressive model for tactical reasoning and behavior trees for execution control.
- Built a Unity-based simulator with complete match rules and realistic vehicle dynamics. It managed to support **real-time multiplayer training** and host **inter-university competitions**.

Robot Learning Platform for Contact-Rich Manipulation

May. 2026 – Jun. 2026

- Built a robot learning platform on AgileX NERO, integrating synchronized vision, force, tactile, and **Pico VR teleoperation**, **DAGger-based online intervention**, policy training, and real-world deployment.

♡ Honors and Awards

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| • National First Prize (National Champion) , RoboMaster University Championship | 2025 |
| • National First Prize (National Champion) , RoboMaster University Championship | 2024 |
| • SCSK Scholarship (Second Prize) , Shanghai Jiao Tong University | 2024 |

🔧 Technical Skills

- **Programming:** Python, C++, C#
- **Frameworks & Tools:** ROS2, Unity, Isaac Sim, PyTorch, Blender, OpenCV, Docker