Haihao Lin

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Research interests: Multimodal and embodied model post-training; visual representation learning; cross-task generalization.

Education

University of Chinese Academy of Sciences (UCAS) Sep. 2024–Jun. 2027 (expected)
M.S. in Computer Science (Artificial Intelligence). Advisor: Prof. Xiangsheng Huang.

Jiangsu University Sep. 2020–Jun. 2024
B.E. in Computer Science and Technology. GPA rank: **1/171**.

Research

FiberTune: Preserving Action-Fiber Visual Residuals in Vision-Language-Action Fine-Tuning
First and corresponding author | Accepted at CoRL 2026
arXiv:2606.08653 | Project page: fibertune.github.io

- Developed FiberTune to preserve transferable visual structure during action-supervised VLA fine-tuning. An action probe identifies action-predictive feature directions; the remaining visual representation is aligned with a frozen visual teacher and regularized with an effective-rank prior. This training-only objective leaves the deployed policy and inference cost unchanged.
- Implemented training and representation diagnostics for $\pi 0.5$ on CALVIN, LIBERO, and an SO-101 manipulation task, and for OpenVLA-OFT on LIBERO. Built the SO-101 data-collection and out-of-distribution evaluation pipeline using LeRobot.
- Outperformed task-loss-only fine-tuning in all six controlled settings; CALVIN ABC→D five-step sequence success rate (SR(5)) increased from 61.4% to 72.1%, and SO-101 task success from 72.7% to 78.1%.

Honors and Competitions

- National Scholarship (twice); Jiangsu Provincial Merit Student; Jiangsu University President's Medal; Outstanding Graduate; Outstanding Undergraduate Thesis.
- Three silver medals at ICPC Asia Regional Contests; highest-ranked bronze-medal team at the 2024 ICPC Asia-East Continent Final; two First Prize awards at the Lanqiao Cup National Finals, one each in C/C++ and Python (Python: 1st in Jiangsu, 9th nationally).

Teaching and Academic Service

Jiangsu University Programming Contests

- Served as team captain and helped develop the university's contest training and selection process. Took full responsibility for problem setting, review, and editorials for all warm-up and main contests in 2022 and 2023; also proctored and answered contestants' questions on site.

Lanqiao Cloud Courses

- Independently developed the Python preparation course for the 17th Lanqiao Cup, including curriculum and algorithm content; contributed problems to the online judge problem bank.

Robotic Systems

ROS2 Systems Engineering for a Commercial Cleaning Robot
Mar. 2026–Aug. 2026

- Designed and implemented autonomous docking for charging and cliff avoidance, including sensor selection and placement, charger communication, state monitoring, and docking control. Built a docking simulator for parameter tuning and stress testing, then deployed and validated the system on the robot using ROS2.
- Implemented an initial coverage-path planner and integrated an external planning algorithm. Improved wake-word detection and speech recognition under operating noise, and integrated these functions into the robot's state machine with system-level testing.

Intelligent Logistics Robot System Design and Prototype Validation
Aug. 2025–Jan. 2026

- For logistics applications, built an xArm + RGB-D tabletop manipulation prototype and deployed it on Jetson, covering hand-eye calibration, suction/gripper integration, and Web API integration.

Additional Research and Engineering

Property Prediction and Screening for an AI-Enabled Pharmaceutical Platform
Sep. 2023–Jun. 2024

- Completed data processing and model replication for the large-molecule workstream of an AI-enabled pharmaceutical platform; developed a property-prediction and screening system; contributed to service API implementation and platform integration. The resulting thesis was recognized by the university as an Outstanding Undergraduate Thesis.

MaaAssistantArknights Open-Source Automation Project
Jun. 2022–Apr. 2026 | GitHub 20k+ stars

- As an early key contributor to MaaAssistantArknights, developed multiple C++ core modules and WPF GUI features, and implemented and iteratively improved a task-planning algorithm for mutual-exclusion constraints.

Skills

Programming and frameworks: Python, PyTorch, LeRobot, and RLinf.
Embodied models: the π family (including π0.5), the OpenVLA family (including OpenVLA-OFT), SmolVLA, and FastWAM.
Robotics and systems: ROS2, C++/CMake, OpenCV, RealSense/RGB-D, xArm SDK, Jetson/RK, and Linux/Docker.