

TAO LIN

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ACADEMIC BACKGROUND

Shanghai Jiao Tong University

PhD. student in School of Artificial Intelligence

Advisor: Prof. Bo Zhao

Apr 2026 - Present

Shanghai

Imperial College London

Master of Science in Applied Computational Science and Engineering

Award: Graduated with Distinction

Sep 2023 - Aug 2024

London

Donghua University (Project 211)

Bachelor of Science in Computer Science and Technology

Average Score: 88.5% (top 5%)

Sep 2019 - Jun 2023

Shanghai

Honors:

Outstanding Student of 2019&2020&2021;

Academic Excellence Scholarship of 2019&2020&2021

PUBLICATIONS

Lin T, Zhong Y, Du Y, et al. Evo-1: Lightweight Vision-Language-Action Model with Preserved Semantic Alignment, accepted to 2026 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR).

Lin T, Li G, Zhong Y, et al. Evo-0: Vision-Language-Action Model with Implicit Spatial Understanding, submitted to 2026 European Conference on Computer Vision (ECCV).

Li Y, Zhang Y, **Lin T**, et al. Sti-bench: Are mllms ready for precise spatial-temporal world understanding?, accepted by 2025 International Conference on Computer Vision (ICCV).

Liu Z, Chen Y, Cai H, **Lin T**, et al. VLA-Pruner: Temporal-Aware Dual-Level Visual Token Pruning for Efficient Vision-Language-Action, submitted to 2026 International Conference on Machine Learning (ICML).

RESEARCH EXPERIENCE

Machine Intelligence and Interaction Lab (SJTU)

Research Assistant

Feb 2025 - Present

Shanghai

Research Focus: Embodied AI and Spatial Understanding Models (Advisor: Prof. Bo Zhao)

- **Evo-0 Model**: Led the development of Evo-0, a Vision-Language-Action (VLA) model with implicit 3D perception that does not rely on additional sensors. Achieved +15% average improvement over Pi0 in RL Bench simulations and +28.88% in real-world robot experiments.
- **Evo-1 Model**: Develop the lab's embodied AI foundation model Evo-1 from scratch, implementing model architecture, action expert, dataset loading, training (full-parameter, LoRA, multi-GPU), and inference. Achieved state-of-the-art performance on MetaWorld, RoboTwin benchmarks.
- **STI-Bench**: Designed and built STI-Bench, a spatial-temporal intelligence benchmark with 300+ videos and 2,000+ QA pairs, revealing core limitations of current MLLMs in precise 3D reasoning and motion understanding.
- **VLA-Pruner**: Proposed a dual-level, temporal-aware visual token pruning framework for VLA models, jointly considering semantic- and action-level importance. Enabled up to 87.5% token pruning with minimal performance degradation, and can improve task success at moderate pruning ratios.
- **Model Reproduction**: Successfully reproduced mainstream VLA models, including Pi0, OpenVLA, GR00T, OpenVLA-OFT, SmolVLA, RDT-1B, and GR-1, etc.
- **Teleoperation and data collection system**: Developed joystick-based teleoperation system for xArm6 and completed hardware debugging; Designed and implemented a ROS1-based data collection system capable of logging real-world robot data at arbitrary sampling rates, with support for exporting datasets in both RLDS and LeRobot v2.1 formats.

Antobot Ltd.

May 2024 - Dec 2024

Full-time Researcher

London

Research Focus: Computer Vision and Robotics (Advisor: Dr. Daniel Freer)

- **Detection Models:** Developed strawberry growth-stage detection models, enhancing YOLOv7 with Bi-Level Routing Attention, Explicit Visual Center modules, and Normalized Gaussian Wasserstein Distance loss, boosting mAP@0.5 from 48.8% to 86.5% (+37.7%). Further trained and deployed a six-category YOLOv11 model, reducing GFLOPS from 104.7 to 6.4 while maintaining accuracy, and enabled real-time deployment on Jetson Xavier.
- **Tracking & Yield Analysis:** Integrated OC-SORT and ByteTrack for growth-stage tracking; generated yield heatmaps and detection reports using GPS and farm maps, enabling precise agricultural data analysis.
- **Instance Segmentation:** Trained a YOLOv8 instance segmentation model for ripe strawberry detection, improving accuracy from 83% to 94% (+11%); combined with red-pixel ratio analysis to assess fruit ripeness.
- **Data Collection & Annotation:** Controlled agricultural robots in strawberry fields (day & night) to collect video data; performed data conversion, cleaning, enhancement, and annotated ~30,000 labels, building high-quality datasets for data-centric exploration (illumination, camera angle, night lighting, resolution, frame rate, robot speed).

Optimal Design of Intelligent Warehouse and Dispatch Systems

Nov 2021 - Jun 2022

Research Assistant

Shanghai

Research Focus: Intelligent Warehousing and Robotics (Advisor: Prof. Ming Du)

- **Real-Time Scheduling System:** Developed a multi-layer AGV real-time scheduling system for the Daqing Yili Intelligent Warehouse, enhancing warehouse utilization and outbound efficiency.
- **Management Platform:** Built a warehouse management platform for registering inbound/outbound operations, retrieving dispatch information, and querying storage data.

INTERNSHIP EXPERIENCE

Yunnan Beitaini Biotechnology Group Co.,Ltd.(Stock code 300957)

Jul 2021 - Aug 2021

Algorithm Engineer of AI Team

Shanghai

- Distinguished each dermatosis through contrastive learning algorithm with the labelled data and adjust the framework to enhance overall recognition accuracy continuously.
- Obtained an in-depth understanding of algorithm development and recurrence of algorithm through the usage of deep learning and machine learning.
- Took responsibility for crawler development, independently developing the core website crawler for the algorithm team.

Ping An Pension Insurance Co.,Ltd.(Stock code 601318)

Jan 2021 - Feb 2021

Back-End Development Engineer

Shanghai

- Took responsibility for timely modifying the payment back-end code of the Good Welfare app and adding the function of Alipay to the existing Yiqianbao and WeChat Payment
- Updated the WeChat service transformation of the Good Welfare app and assisted in organizing the source code interface information.

COMPETITION EXPERIENCE

The ACM team (Algorithm Competition School Team)

Sep 2019 - Sep 2022

Team leader

- Represented Donghua University in ACM programming competitions (ICPC, CCPC), competing in high-pressure, time-limited (5-hour) contest settings.
- Solved a wide range of algorithmic problems, including dynamic programming, greedy algorithms, graph algorithms, and recursion, requiring rapid reasoning and implementation.
- Demonstrated strong problem decomposition, algorithm selection, and coding efficiency under strict time constraints.

Honors:

The Bronze Prize in the 2020 ICPC Asia Nanjing Regional Contest;

The Second Prize in the National Contemporary Undergraduate Mathematical Contest in Modeling;

The First Prize of Shanghai Division in the Contemporary Undergraduate Mathematical Contest in Modeling;

The First Prize in the China University Computer Competition-Team Programming Ladder Competition;