Jingxu Gu 谷景旭

Software Engineering · Robot Manipulation and Vision · Embodied AI

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Undergraduate in Intelligent Science and Technology at Nanjing University (2025 entering cohort). Conducting research on robot manipulation and **vision-language-action** (**VLA**) models in Prof. Dongze Lian's group at PRLab. Developed **DEED** for the RoboFineMani Challenge at CoRL 2026, achieving an official Overall score of **85.55%**, with a **first-author arXiv preprint**. Additional experience in RoboMaster vision and mechanical systems, and LLM explainability research with a manuscript under review at **ICSE**.

Education and Coursework

2025–present	**Nanjing University** • Undergraduate, Intelligent Science and Technology
Course grades	C Programming : 100/100 ; **Python** Programming : 95/100
Completed	MIT 6.S184 : Generative AI with Stochastic Differential Equations ; Introduction to **Flow Matching** and **Diffusion Models** (2026), self-study

Research Experience

Under review — Software Engineering Research, Prof. Wei Ma, Singapore Management University,

- Collaborated with Prof. Wei Ma to investigate dependency behaviors introduced by large language models and their explainability.
- Manuscript submitted to **ICSE 2027** ; currently under review.

LLMs · Explainability · Software Engineering

Current — Research Intern, PRLab, Nanjing University,

- Conduct **VLA** research under Prof. Dongze Lian's supervision, covering hardware, data collection, training, inference, and evaluation.
- Developed a reusable data collection pipeline for **AgileX Piper** dual-arm robots ; worked on robot-camera calibration, teleoperation, and demonstration collection.
- Investigated and experimented with open-source **VLA** models, including π_0, $\pi_{0.5}$, and **Xiaomi-Robotics-1**.
- Configured **CUDA/PyTorch** environments on an RTX 5090 workstation and remote GPU servers for model experiments and deployment.

VLA · AgileX Piper · Data Collection

Competitions and Activities

2023 — **NOI Spring Test · Second Prize**
Participated in high-school informatics Olympiad competitions.

2026 — **Nanjing University EL Algorithm Competition**
5th place in the university competition.

2026 — **AMD AI Developer Conference**
Conference attendee.

2026 season	**RoboMaster RUML, Jiangsu** · **Team Top 8** Designed an engineering robot's manipulator gripper in SolidWorks and used Bambu Studio for 3D printing.
Oct. 2026	**RoboFineMani @ CoRL 2026** · **MetaFine Open Competition** Developed DEED (Demonstration Expansion and Execution Design), adapting Xiaomi-Robotics-1 to five fine-grained manipulation tasks with an official Overall score of 85.55%. Expanded training data through instruction-paired demonstrations, camera/lighting re-rendering, and hierarchical sampling. Designed execution using inverse kinematics, task-specific gripper mappings, and closed-loop replanning; evaluated execution horizons and denoising budgets. First-author arXiv preprint with Dongze Lian : *Improving Fine-Grained Manipulation through Demonstration Expansion and Execution Design* (Oct. 2026). Paper : `https://arxiv.org/abs/2610.40430`
2027 season	**RoboMaster Aerial Robot Group Lead, Nanjing University** Responsible for robot design and assembly, algorithm debugging, and team coordination.

Projects

RM Vision System

Code : https://github.com/JingxuGu/rm_vision

Developed a real-time perception system for RoboMaster : trained YOLO26 for armor-plate detection, implemented NMS post-processing, PnP pose estimation, and EKF tracking, and deployed the system on NVIDIA Orin NX.

YOLO26 | Orin NX | NMS | PnP | EKF

Personal Website and Algorithm Notes

Homepage : https://jingxugu.com

Blog : https://blog.jingxugu.com

Built a personal academic website and independently developed a Hexo blog to document algorithm study and problem-solving experience.

Web Development | Hexo | Technical Writing

Technical Skills

Programming & AI	C, Python, PyTorch; diffusion models, DDPM, flow matching, VLA policies
Robotics	AgileX Piper, robot-camera calibration, teleoperation, demonstration collection, manipulation policy training and evaluation
Systems	Ubuntu, CUDA, Docker, Conda, SSH, remote development and GPU training environments
Hardware & CAD	LCEDA, PCB design, Arduino, SolidWorks mechanical design, Bambu Studio