Hongliang Lu

leonsny2017@gmail.com · leon_lhl@sjtu.edu.cn · GitHub @Lukebird17 ·

EDUCATION

Shanghai Jiao Tong University, *B.Eng. in Artificial Intelligence* Sep. 2023 – Jun. 2027

Core GPA: 4.15/4.3 | Ranking: 1/100
GRE: Total 330 (Verbal 160, Quantitative 170) Analytical Writing 3.5
TOEFL: Total 113 (Reading 30, Listening 30, Speaking 24, Writing 29)

RESEARCH EXPERIENCE

SJTU MVIG-RHOS Lab | Advisor: Prof. Yonglu Li & Cewu Lu Sep. 2024 – Present

Robotic Learning from Human Priors and Reinforcement (Core Contributor)

- Led real-robot RL experiments using the HILSERL framework, deploying multiple teleoperation modes (Koch arm, VR) on Flexiv.
- Successfully trained policies for high-precision tasks including USB insertion and bottle-cap manipulation, and explored various VLA+RL hybrid architectures.
- Contributed to building a three-stage generative framework leveraging human video pretraining to reduce robot data requirements.
- Managed hand keypoint annotation and robot fine-tuning phases, working extensively with OpenPI and LeRobot frameworks.
- Deployed state-of-the-art models (Pi0 series, Diffusion Policy, ACT) from fine-tuning to real robots.

The Great March 100: Detail-Oriented Tasks for Evaluating Embodied AI Agents (RSS 2026 | Contributor)

- Developed a 100-task benchmark evaluating embodied AI across six design dimensions including physics, semantics, and temporal reasoning.
- Conducted comprehensive evaluation of Diffusion Policy and $\pi_{0.5}$ models, revealing critical limitations in fine-grained manipulation capabilities.

SJTU | Advisor: Prof. Yulun Zhang Nov. 2025 – Present

Q-DiT4SR: Exploration of Detail-Preserving Diffusion Transformer Quantization for Real-World Image Super-Resolution (ICML 2026 Under Review | Third Author)

- Developed a quantization framework for Diffusion Transformer super-resolution models, achieving W4A4 precision with minimal quality loss.
- Introduced hierarchical SVD reconstruction and timestep-aware mixed-precision strategies, significantly outperforming SVDQuant while reducing memory footprint.

TACache: Accelerating Rectified Flow Models via Trajectory-Aware Caching (ICML 2026 Under Review | Third Author)

- Proposed a training-free acceleration framework using Parallel-Orthogonal Velocity Decomposition (POVD) and Taylor expansion compensation.
- Achieved 4.14x and 2.11x speedups on BAGEL and Wan2.1 models with quality preservation, successfully deploying on FLUX.1 and HunyuanVideo.

HONORS & AWARDS

- **A-Level Scholarship (Top 1%)** (2023-2024, 2024-2025);
- **Meritorious Winner**, Mathematical Contest in Modeling;
- **2nd Prize**, National Math Competition

SKILLS

- **Programming:** Python, C++; Linux, Docker, Git
- **ML & Robotics:** PyTorch | OpenPI, LeRobot frameworks | ROS | Flexiv, Aloha, Xtrainer arms | IsaacSim, Mujoco