Haofei Lu

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Research Interests

My research interests mainly lie in **deep generative models**, **robot learning**, and **reinforcement learning**. I am now focusing on the **unified, general training** of robotic locomotion and manipulation, and leveraging diffusion models for **generative embodied task-solving**. I also bring extensive experience in AI-driven content generation, and self-supervised learning across modalities including video, trajectory and human motion.

Education

Tsinghua University   *Beijing, China*

M.S. in Computer Science and Technology, Pervasive Computing Lab, Advised by Junliang Xing and Yuanchun Shi   *Sep. 2023 - Jun. 2026*

GPA: 4.00 / 4.00 (Rank: 1 / 61)

Southeast University,   *Nanjing, China*

B.Eng. in Computer Science and Technology, Intelligent Systems & Algorithms Lab, Advised by Weiwei Wu   *Sep. 2019 - Jun. 2023*

GPA: 3.97 / 4.00 (Rank: 1 / 261)

Selected Publications *(* stands for equal contribution. Listed reverse chronologically.)*

PREPRINTS

[1] Habitizing Diffusion Planning for Efficient and Effective Decision Making

Haofei Lu, Yifei Shen, Dongsheng Li, Junliang Xing, Dongqi Han

Under Review [Paper] [Code] [Project]

CONFERENCE PUBLICATIONS

[2] BodyGen: Advancing Towards Efficient Embodiment Co-Design

Haofei Lu, Zhe Wu, Junliang Xing, Jianshu Li, Ruoyu Li, Zhe Li, Yuanchuan Shi

ICLR 2025 Spotlight *(Top 5.1%) [Paper] [Code] [Project]*

[3] What Makes a Good Diffusion Planner for Decision Making?

Haofei Lu, Dongqi Han, Yifei Shen, Dongsheng Li

ICLR 2025 Spotlight *(Top 5.1%) [Paper] [Code]*

[4] PAE: Reinforcement Learning from External Knowledge for Efficient Exploration

Zhe Wu*, **Haofei Lu***, Junliang Xing, You Wu, Renye Yan, Yaozhong Gan, Yuanchun Shi

ICLR 2024 poster [Paper] [Code]

[5] Universal Video Style Transfer via Crystallization, Separation, and Blending

Haofei Lu, Zhizhong Wang

IJCAI 2022 poster [Paper] [Code]

Research Experience

Microsoft Research Asia (MSRA)   *Shanghai, China*

Research Intern at AI/ML Group, advised by Dongqi Han and Dongsheng Li   *Feb. 2024 - Feb. 2025*

• **Research Topics:** diffusion model, generative decision-making, offline reinforcement learning

Tsinghua University (THU)   *Beijing, China*

Research Assistant at Pervasive Computing Lab, advised by Junliang Xing and Yuanchun Shi   *Sep. 2023 - Current*

• **Research Topics:** reinforcement learning, embodied learning

Microsoft Research Asia (MSRA)   *Beijing, China*

Research Intern at MC Group, advised by Yan Lu   *Jul. 2022 - Jan. 2023*

• **Research Topics:** generative model, sampling algorithm, undergraduate thesis
• **Bechelor's thesis:** *Momentum-driven Noise-free Guided Conditional Sampling for Denoising Diffusion Probabilistic Models*

Zhejiang University (ZJU) *Remote*

Visiting Student at Network & Media Lab, working with Zhiwen Zuo and Zhizhong Wang *May. 2021 - Feb. 2022*

- **Research Topics:** generative model, AI-driven content generation

Southeast University (SEU) *Nanjing, China*

Research assistant at Intelligent Systems & Algorithms Lab, advised by Yan Lyu and Weiwei Wu *Api. 2021 - Jan. 2022*

- **Research Topics:** multi-agent trajectory prediction, crowd simulation, urban computing

Selected Honors & Awards

SCHOLARSHIPS

2024	**TangZeSheng Scholarship (top 3%)**	Tsinghua University
2022	**CCF Elite Collegiate Award (top 102 students nationwide)**	China Computer Federation (CCF)
2022	**Provincial Outstanding Student (top 0.1%)**	Jiangsu Department of Education
2021	**Presidential Scholarship (top 1%)**	Southeast University
2020	**National Scholarship (top 0.2% students nationwide)**	China Ministry of Education

COMPETITIONS

2023	**National Runner-up, Tencent AI Arena: National Open Competition**	Tencent AI & Honor of Kings
2021	**Meritorious Winner, Interdisciplinary Contest in Modeling (ICM)**	COMAP
2020	**First Prize, Chinese Mathematics Competitions (CMC)**	Chinese Mathematical Society

Academic Services

Teaching Assistant *Beijing, China*

Fundamentals of Programming (Undergraduates), Tsinghua University *2024 Fall*

Teaching Assistant *Beijing, China*

Computer Vision (Graduates), Tsinghua University *2024 Fall*

Teaching Assistant *Beijing, China*

Fundamentals of Programming (Undergraduates), Tsinghua University *2023 Fall*

Reviewer *Remote*

ICLR, NeurIPS, AAMAS, AAAI, IJCAI *2023 - Present*