HE LI

Personal Website ◇ Github Profile ◇ Google Scholar
Phone: (+86) 133-7036-2727 ◇ Email: lihe22@mails.tsinghua.edu.cn & lihe50hz@gmail.com

EDUCATION

Tsinghua University (THU) *July 2026 (expected)*
B.E. in Computer Science (Yao Class, IIIS)
GPA: 3.954/4.000
Rank: 5/94 among Yao Class

RESEARCH EXPERIENCES

Every bullet point is a single research project. † Denotes leadership project.

Multimodal LLM and AI for Biology Jun 2025 - Present
Advisors: Prof. Yeung-Levy Serena Stanford (Onsite, UGVRI)

- Natural robustness of Multimodal LLM against catastrophic forgetting, in submission of ICLR 2026.†
- Privacy preserving training of medical Multimodal LLMs, ML4H 2025.†
- CellFlux V2: Simulating Cellular Morphology Changes via Flow Matching, ML4H 2025.

Visual Generative Model Jan 2024 - Present
Advisors: Prof. He Kaiming MIT (Onsite in 2025 Spring, RA)

- Autoregressive without vector quantisation [1], NeurIPS 2024 **(Spotlight)**.
- Adversarial training in autoregressive model.†
- Finetuning generation model from pretrained representation model.†
- Co-training of representation and generation.†
- Causal autoregressive with one-step method in image generation.†
- A new family of single-step generative model. (In processing, co-advised with Prof. Du Yilun)

3D Gaussian Splatting Oct 2025 - Present
Advisors: Prof. Yiming Li THU (Undergraduate Thesis)

- Exploring 3D Gaussian Splatting in visual encoder's latent space.† (In processing)

Sparsity for Diffusion Models Oct 2023 - May 2024
Advisors: Prof. Chen Jianfei and Prof. Zhu Jun THU (Undergrad. Intern)

- Progressive $N : M$ sparsity for better sparse diffusion model [2], ICME 2025.

PUBLICATIONS

[1] T. Li, Y. Tian, **Li, He**, M. Deng, and K. He, "Autoregressive image generation without vector quantization," in *Advances in Neural Information Processing Systems*, A. Globerson, L. Mackey, D. Belgrave, *et al.*, Eds., vol. 37, Curran Associates, Inc., 2024, pp. 56 424–56 445. [Online]. Available: https://arxiv.org/abs/2406.11838.

[2] K. Wang, J. Chen, **He Li**, Z. Mi, and J. Zhu, *Sparsedm: Toward sparse efficient diffusion models*, 2024. arXiv: 2404.10445 [cs.LG]. [Online]. Available: https://arxiv.org/abs/2404.10445.

ACADEMIA & TEACHING SERVICES

Reviewer for **ICCV, ARR, ML4H, NeurIPS, CVPR** *2025*
TA for **Machine Learning** by Prof. Yuan Yang *Sep 2025 - Jan 2026*
TA for **Advanced Computer Graphics** by Prof. Yi Li *Sep 2025 - Jan 2026*
Student TA for **Object-Oriented Programming** by Prof. Liu Zhiyuan *Feb 2023 - July 2023*

AWARDS & GRANTS

Yao Award *2025*
Technological Innovation Scholarship *2025*
Widjaja Scholarship *2025*
Academic Excellence Scholarship *2024*
Nanjing Turing Institute of Artificial Intelligence Scholarship *2024*
Tsinghua Freshman Scholarship *2022-2026*
First prize in provincial CMO (Tianjin) *2020,2021*
First prize in provincial CPhO (Tianjin) *2020,2021*
First prize in CSP-S (Tianjin) *2019*

SELECTED OPEN-SOURCE PROJECTS

Imitation Learning with Diffusion Policy Sep 2024 - Jan 2025
Repository: Imitation Learning with Diffusion Policy Collaborators: Rujia Yang

· Incorporating Low-Dimensional Self-Supervised Loss for Diffusion Policies in Imitation Learning.

Merged Contribution to Maniskill Repository Sep 2024 - Jan 2025
Repository: Enhance SAC with MoE and BEE Operator Collaborators: Guowei Xu, Muhan Wang

· Introducing two plug-and-play enhancements to the Soft Actor-Critic (SAC) algorithm.

Physically Based GPU Graphics Renderer Sep 2024 - Jan 2025
Repository: GPU Rendering for Interference and Dispersion Collaborators: Chenglin Liu

· GPU-based graphics renderer implemented in GLSL with original wave effect simulation feature.

AI Computing Acceleration on Chips July 2024 - Sep 2024
Repository: Torus Network on Chips with Adaptive Balanced Routing Collaborators: Haoyang Weng

· Based on gem5, implementing torus network and load-balanced adaptive routing algorithm.

KAN in Computer Vision Feb 2024 - July 2024
Repository: Computer Vision Meets KAN Collaborators: Yue Cao

· Classification by FFT/PCA preprocessing and Kolmogorov-Arnold Network, achieving higher accuracy.