HE LI

EDUCATION

Tsinghua University (THU)   *July 2026 (expected)*
B.E. in Computer Science (Yao Class, IIIS)
GPA: 3.954/4.000 (Major GPA 3.984/4.000)
Rank: 5/94 among Yao Class

RESEARCH INTERESTS

I am interested in modern visual generative model and multimodal language model, together with the vision-centric applications in the other domains, especially cell biology and medical.

RESEARCH EXPERIENCES

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

· Leading project on analyzing Multimodal LLM natural robustness against catastrophic forgetting [1] and its potential application in medical foundation model [2].
· Participating in CellFlux V2 project aiming for simulating cellular morphology changes via Flow Matching. Accelerating the training by 6 times and developing the results on JUMP datasets [3].

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

· Exploring the autoregressive method without vector quantisation [4]. Leading project on improving this methods with adversarial training, one-step diffusion-based method and causal autoregressive.
· Leading project on finetuning generation model from pretrained representation model. Also investigating the co-training of representation models and generative models.
· Help developing a new family of single-step generative model. (In processing, 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)

· Finish baseline testing and help develop progressive $N:M$ sparsity method for diffusion model [5].

PUBLICATIONS

[1] **He Li**, Y. Zhang, X. Wang, K. Lyu, and S. Yeung-Levy, Fine-tuning vlms without forgetting is easier than you think, in *ResponsibleFM @ NeurIPS 2025, ICLR 2026 Submission*.
[2] **He Li**, Y. Zhang, X. Wang, and S. Yeung-Levy, Replay-free sequential fine-tuning of medical vlms, in *ML4H 2025*.
[3] Y. Zhang, Y. Su, Z. Wefers, S. Su, **He Li**, T. Li, C. Wang, J. Burgess, A. Lozano, L. Zhou, D. Ding, J. J. Nirschl, E. Lundberg, and S. Yeung-Levy, Cellfluxv2: An image generative foundation model for virtual cell modeling, in *ML4H 2025, Nature Method 2025 Submission*.
[4] T. Li, Y. Tian, **He Li**, M. Deng, and K. He, Autoregressive image generation without vector quantization, in *NeurIPS 2024 **Spotlight***.
[5] K. Wang, J. Chen, **He Li**, Z. Mi, and J. Zhu, Sparsedm: Toward sparse efficient diffusion models, in *ICME 2025*.

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.