

ZeYi Li

Shenyang Railway Experimental High School, China



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Education

Shenyang Railway Experimental High School

Sep. 2021 — June. 2025

Main courses: History, Politics, and Geography.

Shenyang, Liaoning

Experience

Lehigh University

May 2023 —

Present

Intern of Medical AI Advisor: Lichao Sun

Remote

Co-Advisor: Xiang Li, Massachusetts General Hospital and Harvard Medical School

Selected Leded Projects

Bora: Biomedical Generalist Video Generation Model | Diffusion Model, LLM Instruct, Efficient Training **Jun. 2024**

- Collected, filtered, and preprocessed open-source video data from four modalities: endoscopy, ultrasound, RT-MRI, and cellular, obtaining about 30,000 high-quality medical videos.
- Through prompt engineering, the LLM is enabled to accept images inputted in a sequential decomposition and provide accurate descriptions using biomedical terminology. Utilizing this method of LLM instruct, the world's first biomedical text-video pair dataset has been constructed.
- Using our dataset, we efficiently trained the world's first model on STDiT (Space-Temporal Diffusion with Transformer), which can accurately understand and generate professional biomedical descriptions.

Project Page(Click)

Medical Unlearnable Example | Unauthorized Training, Data Security

Feb. 2024

- Efficiently filter important pixels in sparse medical data through simple gradient thresholds.
- Further utilizing the sparsity characteristics of medical data, selectively introduce invisible noise into pixels to prevent them from being used for unauthorized training.
- Both performance and efficiency are improved.

Accepted by ICML2024 NextGenAISafety. Paper(Click)

Publications

- [1] Sun, Weixiang, Xiaocao You, Ruizhe Zheng, Xiang Li, and Lichao Sun. Bora: Biomedical generalist video generation model. arXiv preprint arXiv:2407.08944, 2024.
- [2] Zhengqing Yuan, Ruoxi Chen, Yang Wang, Sun, Weixiang, Yanfang Ye, and Lichao Sun. Fine-tuning text-to-video diffusion transformers via image guidance. Under Review, 2024.
- [3] Sun, Weixiang, Yixin Liu, Zhiling Yan, Kaidi Xu, and Lichao Sun. Medical unlearnable examples: Securing medical data from unauthorized training via sparsity-aware local masking. ICML2024 NextGenAISafety, 2024.
- [4] Sun, Weixiang. Research and application of improved neural network optimization algorithm. In Third International Symposium on Computer Engineering and Intelligent Communications (ISCEIC 2022), volume 12462, pages 602–606. SPIE, 2023.
- [5] Rong Zhou, Zhengqing Yuan, Zhiling Yan, Sun, Weixiang, Kai Zhang, Yiwei Li, Yanfang Ye, Xiang Li, Lifang He, and Lichao Sun. Ttt-unet: Enhancing u-net with test-time training layers for biomedical image segmentation. arXiv preprint arXiv:2409.11299, 2024.
- [6] Zhiling Yan, Sun, Weixiang, Rong Zhou, Zhengqing Yuan, Kai Zhang, Yiwei Li, Tianming Liu, Quanzheng Li, Xiang Li, Lifang He, et al. Biomedical sam 2: Segment anything in biomedical images and videos. arXiv preprint arXiv:2408.03286, 2024.

Scholarship

Third Class Scholarship (Top 15%)

Sept. 2021 — Jun. 2022

Award by Northeastern University

Second Class Scholarship (Top 10%)

Sept. 2022 — Jun.

2023

Award by Northeastern University

Tuoxin Scholarship (Top 5%)

Award by Tuoxin

Sept. 2022 — Jun. 2023