

Ziyang Xu

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EDUCATION BACKGROUND

- The Chinese University of Hong Kong**
Ph.D. in Mathematics
Supervisor: Tieyong Zeng, Liu Liu
Aug. 2024 -
Hong Kong SAR, China
- Lanzhou University**
B.S. in Statistics | GPA: 92.69/100 | Ranking: 1/52
Supervisor: Zhouping Li, Xingxing Jia
Sept. 2020 - Jun. 2024
Lanzhou, China
- High School Affiliated To Nanjing Normal University**
Sept. 2017 - Jul. 2020
Nanjing, China

INTERESTS AND SKILLS

- Recent Research Interests:** Reinforcement learning for LLMs, On-policy distillation, Image processing
- Skills:** PyTorch, Transformers, LoRA/SFT, distributed training, on-device AI deployment.

ACADEMIC EXPERIENCES

- Huawei**
Research Intern, Theory Lab of Huawei in Hong Kong Research Institute
Project: Mathematical-Model-Based Image Algorithm Research, PI: Tieyong Zeng
Oct. 2024 - Oct. 2025
Hong Kong SAR, China
 - Developed an image restoration pipeline for information-missing artifacts caused by short-exposure sampling of screen refresh cycles in mobile photography. The pipeline uses Sa2VA-8B for language-guided screen/person segmentation, luminance-jump maps for banding-region detection, structure-aware mask refinement for moving occluders and boundary artifacts, and long-short exposure frame registration and fusion to recover the missing screen content.
- Western University**
Mitacs Globalink Research Intern, The Schulich School of Medicine & Dentistry,
Project: Deep Learning for Integrating Multimodal Data for Precision Medicine, Supervisor: Pingzhao Hu
Jan. 2023 - Oct. 2023
London, Canada

SELECTED PUBLICATIONS

- Deep Learning for Precision Grading of Schistosoma Japonicum-induced Liver Fibrosis in Ultrasound Images** [Code]
Ziyang Xu, Jianfeng Zhang, Tingting Wu, Haiyong Hua, Kun Yang, Tieyong Zeng. (Accept) Nature Communications
We developed SFibAI, an end-to-end deep learning framework for fine-grained fibrosis grading from B-mode ultrasound, trained on a large-scale multi-center dataset of 167,702 images with 36 discrete fibrosis stages. Designed a hybrid KL/MSE/boundary-sensitive loss, achieving 93.9% accuracy within ± 0.5 stages and MAE 0.116 on 16,811 independent test images. Built a Windows/Android SDK with average per-image latency below 400 ms.
- REACT: Representation Extraction And Controllable Tuning to Overcome Overfitting in LLM Knowledge Editing** [PDF]
Haitian Zhong, Yuhuan Liu, Ziyang Xu, Guofan Liu, Qiang Liu, Shu Wu, Zhe Zhao, Liang Wang, Tieniu Tan. EMNLP 2025 main
We introduce REACT (Representation Extraction And Controllable Tuning), a unified two-phase framework designed for precise and controllable knowledge editing. Relevant experiments on EVOKE benchmarks demonstrate that REACT significantly reduces overfitting across nearly all evaluation metrics, and experiments on COUNTERFACT and MQuAKE shows that our method preserves balanced basic editing performance (reliability, locality, and generality) under diverse editing scenarios.
- Biology Instructions: A Dataset and Benchmark for Multi-Omics Sequence Understanding Capability of Large Language Models** [PDF]
Haonan He, Yuchen Ren, Yining Tang, Ziyang Xu, Junxian Li, Minghao Yang, Di Zhang, Dong Yuan, Tao Chen, Shufei Zhang, Yuqiang Li, Nanqing Dong, Wanli Ouyang, Dongzhan Zhou, Peng Ye. EMNLP 2025 findings
We introduce Biology-Instructions, the first large-scale multi-omics biological sequences-related instruction-tuning dataset including DNA, RNA, proteins, and multi-molecules, designed to bridge the gap between large language models (LLMs) and complex biological sequences-related tasks.

PTransIPs: Identification of phosphorylation sites enhanced by protein PLM embeddings [PDF] [Code]

Ziyang Xu, Haitian Zhong, Bingrui He, Xueying Wang, Tianchi Lu. IEEE Journal of Biomedical and Health Informatics

PTransIPs, a new deep learning framework for the identification of phosphorylation sites. PTransIPs utilizes protein pre-trained language model (PLM) embeddings to achieve SOTA performance, with AUCs of 0.9232 and 0.9660 for S/T and Y sites, respectively. PTransIPs is also a universal framework for all peptide bioactivity tasks.

SELECTED HONORS AND AWARDS

• Brilliant Graduate of Lanzhou University - Academic Type , (Top 5 from university) [News]	<i>Jun. 2024</i>
• CUHK Vice-Chancellor’s PhD Scholarship ,	<i>Mar. 2024</i>
• Outstanding Graduate of Gansu Province , [News]	<i>Mar. 2024</i>
• Chun-Tsung Scholar , (The 25th Annual) [News]	<i>May. 2023</i>
• Mitacs Globalink Research Intern Scholarship , (2023) [News]	<i>April. 2023</i>
• National Scholarship , (Rank 1/117) [News]	<i>Dec. 2022</i>
• Merit Student of Gansu Province , (0.6%) [News]	<i>Jun. 2022</i>
• National Scholarship , (Rank 1/157) [News]	<i>Dec. 2021</i>