

Ziyang Xu

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EDUCATION BACKGROUND

•The Chinese University of Hong Kong	Aug. 2024 -
Ph.D. in Mathematics	Hong Kong SAR, China
•Lanzhou University	Sept. 2020 - Jun. 2024
B.S. in Statistics GPA: 92.69/100 Ranking: 1/52	Lanzhou, China
•High School Affiliated To Nanjing Normal University	Sept. 2017 - Jul. 2020
	Nanjing, China

INTERESTS AND SKILLS

- **Research Interests:** AI for Science, Bioinformatics, Medical Image Processing
- **Programming:** Python, Pytorch, C/C++, Matlab, R, Linux

SELECTED HONORS AND AWARDS

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

PUBLICATIONS

PTransIPs: Identification of phosphorylation sites enhanced by protein PLM embeddings	[PDF] [Code]
<i>Ziyang Xu, Haitian Zhong, Bingrui He, Xueying Wang, Tianchi Lu. IEEE Journal of Biomedical and Health Informatics(SCI Q1)</i>	
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.	

RESEARCH PROJECTS

•Deep Learning for Integrating Multimodal Data for Precision Medicine	[PDF] [Code]	Jun. 2023 - Present
<i>Mitacs Globalink Research Internship 2023 (Advisor: Pingzhao Hu)</i>		Western University, Canada
– Purposes: Developing deep learning algorithms for predicting spatial transcriptomics from histology images.		
– Methods: Using contrastive learning architecture, autoencoder, and graph neural network to achieve higher prediction accuracy and downstream clustering performance.		
•Multi-Resolution Tensor Learning for High-Dimensional Spatiotemporal Data		Mar. 2022 - Mar. 2023
<i>Hui-Chun Chin and Tsung-Dao Lee Chinese Undergraduate Research Endowment(CURE)(Advisor: Zhouping Li)</i>		Lanzhou University, China
– Purpose: Developed an adaptive multi-resolution tensor learning algorithm applied to precipitation prediction inland;		
– Methods: Dynamically optimized Batch size, Finegraining criteria, and Patience threshold, not only showing slightly improved loss and interpretability but also achieving 3-4 times speedup compared to the original algorithm MRTL.		
•Fundamental Theory of Visual Cryptography Scheme: Linear Algebra Construction	[PDF]	Mar. 2021 - Mar. 2023
<i>National Training Program of Innovation and Entrepreneurship for Undergraduates (Advisor: XingXing Jia)</i>		Lanzhou University, China
– Constructed multi-share XVCS with perfect pixel expansion and contrast, providing necessary and sufficient conditions.		
– Proposed a noise-free solution to SXVCS, provided a series of conclusions and proofs, constructed the optimal (2,n)-XVCS.		

ACADEMIC SERVICES

- **Reviewer:** IEEE Journal of Biomedical and Health Informatics(IF=7.7)
- **Membership:** IEEE Student Member