Yi Zhou

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Education

2024 – Present **Hong Kong Polytechnic University**, Ph.D. in Computing, *GPA: 4.1/4.3*.
Advisor: Prof. **Wenqi Fan** and Prof. **Qing Li**

2021 – 2024 **Sichuan University**, M.E. in Computer Science and Technology, *GPA: 3.76/4*.
Advisor: Prof. **Min Zhu**, Lab: Vision Computing Lab

2017 – 2021 **Sichuan University**, B.E. in Computer Science and Technology, *GPA: 3.77/4*.
Under the Wu Yuzhang Honors Program

Research Interests

AI4Science, Large Language Models, Graph Machine Learning & Data Mining

Publications & Preprints

J - Journal, C - Conference, P - Preprint

J1 **Yi Zhou**, Xinyi Wang, Lin Yao, Min Zhu. "LDAformer: Predicting LncRNA-Disease Associations based on Topological Feature Extraction and Transformer Encoder". *Briefings in Bioinformatics (**BIB**)*, 2022. (JCR-Q1, IF: 13.994)

J2 Wenwen Gao, Shangsong Liu, **Yi Zhou**, Fengjie Wang, Feng Zhou, Min Zhu. "GBDT4CTRVis: Visual Analytics of Gradient Boosting Decision Tree for Advertisement Click-Through Rate Prediction". *Journal of Visualization (**JoV**)*, 2024.

J3 Jiamin Zhu, Meixuan Wu, **Yi Zhou**, Nan Cao, Haotian Zhu, Min Zhu. "Dowsing: A Task-Driven Approach for Multiple-View Visualizations Dynamic Recommendation". *Journal of Visualization (**JoV**)*, 2024.

J4 Lin Gan, Xinyi Wang, **Yi Zhou**, Min Zhu. "Protein-binding RNA Prediction Based on Integrated Sequence-Structure-Function Pre-training". *IEEE Transactions on Computational Biology and Bioinformatics (**TCBB**)*, 2025.

C1 **Yi Zhou**, Xian Guan, Meixuan Wu, Chengzhou Ouyang, Min Zhu. "Timely-MDA: A Benchmark for Generalizable MiRNA-Disease Association Prediction". *International Conference on Bioinformatics and Biomedicine (**BIBM**)*, 2024.

C2 Meixuan Wu, Yizhou Yang, **Yi Zhou**, Kai Wang, Junqi Bai, Min Zhu. "PLHGMDA: Pre-trained Language Model and Heterogeneous Graph Neural Network for MiRNA-Disease Association Prediction". *International Conference on Intelligent Computing (**ICIC**)*, 2025, **Oral**.

P1 Wenqi Fan, **Yi Zhou**, Shijie Wang, Yuyao Yan, Hui Liu, Qian Zhao, Le Song, Qing Li. "Computational Protein Science in the Era of Large Language Models (LLMs)".

P2 **Yi Zhou**, Haohao Qu, Yunqing Liu, Shanru Lin, Le Song, Wenqi Fan. "HD-Prot: A Protein Language Model for Joint Sequence-Structure Modeling with Continuous Structure Tokens".

Patents

PT- Patent; USE - Under Substantial Examination

PT1 Min Zhu, Fuqiu Chen, Chunlin Long, **Yi Zhou**, Xinyi Wang. "A Visualization Method for Chromatin Hierarchy Analysis Based on Genetic Data". CN202111217034.2.

PT2 Min Zhu, **Yi Zhou**, Xinyi Wang, Lin Yao. "Method and System for Long Non-coding RNA-Disease Association Prediction Based on Self-Attention Mechanism". CN202210818621.5.

PT3 (USE) Min Zhu, Xiyao Li, Chunlin Long, **Yi Zhou**, Xinyi Wang. "A Prediction Method for Chromatin Topological Association Domain Boundary Based on Multimodal Fusion". CN202211477002.0.

PT4 (USE) Min Zhu, Jiamin Zhu, Meixuan Wu, **Yi Zhou**, Haotian Zhu. "A Dynamic Visualization Recommendation Method Based on User Tasks". CN202211610962.X.

PT5 (USE) Min Zhu, Meixuan Wu, Jiamin Zhu, **Yi Zhou**, Haotian Zhu. "An Analytical Task Perception Method that Integrates Deep Learning Models and Rules". CN202211104004.5.

PT6 (USE) Min Zhu, Jiamin Zhu, Meixuan Wu, **Yi Zhou**. "A Visual Analytics Method for RNA-Disease Associations Based on Density Relational Graphs". CN202311187212.0.

PT7 Min Zhu, Meixuan Wu, **Yi Zhou**. "A MicroRNA-Disease Association Prediction Method Based on Graph Neural Networks". CN202411841640.5.

Research Experience

Jul 2024 – Now **Research in AI for Protein**.
- Authored a comprehensive survey for protein language models. [P1, arXiv]
- Proposed HD-Prot, a multimodal protein language model. [P2, arXiv, GitHub]

Jan 2021 – Jun 2024 **Research in Biomedical Network Analysis**, *Project "Visual Analysis of Heterogeneous Graph for Disease-Regulatory Factor"*, supported by the **General Program of National Natural Science Foundation of China** (Grant No.62172289).
- Drafted the research contents of biomedical entity link prediction in the project proposal, and drove a series of publications as the student leader.
- Proposed LDAformer, a lncRNA-disease association prediction method. [J1, DOI, GitHub, PT2]
- Developed Timely-MDA, a benchmark for miRNA-disease association prediction. [C1, DOI, GitHub]
- Contributed to MTP-RBP, a protein-binding RNA prediction method. [J4, DOI, GitHub]
- Contributed to PLHGMDA, a miRNA-disease association prediction method. [C2, DOI, PT7]
- Contributed to DLMV, a visual analytic system for RNA-disease networks. [PT6 (USE), Demo]

Dec 2020 – Apr 2023 **Research in Data Visualization and Analytics**.
- Contributed to *Project "Platform for Visual Analysis of Chromatin Multi-Level Structures and Gene Regulation Relationships"*, supported by **Chengdu Science and Technology Program** (Grant No.2021-YF05-02071-SN). Drafted the project proposal, and developed a visual analytics platform as the student leader. [PT1, PT3 (USE)]
- Participated in the development of Dowsing, a recommendation approach for the generation of multiple-view visualizations. [J3, PT4 (USE), PT5 (USE), DOI, Webpage, Online Demo]
- Participated in the development of GBDTCTRVis, a visual analytics system for GBDT-based advertisement click-through rate prediction. [J2, DOI, Video]

Teaching & Services

Fall 2023 - Spring 2024 **Teaching Assistant**, Sichuan University.
- Data Visualization (311301030) × 2

Fall 2024 - Fall 2025 **Teaching Assistant**, Hong Kong Polytechnic University.
- Introduction to Artificial Intelligence and Data Analytic (COMP1004) × 2
- Computational Thinking and Problem Solving (COMP1010)

Journal Reviewer.
- Expert Systems With Applications (ESWA)

Jul 2022 – Jun 2024 **Mentor of Bioinformatics Group**, Vision Computing Lab.
Mentored Meixuan Wu, Xiyao Li, Wanjing Zhang, Lin Gan, Xian Guan and Chengzhou Ouyang.

Sep 2021 – Aug 2023 **Living Manager**, Vision Computing Lab.
Responsible for all non-working tasks in the lab.

Honors & Awards

2024 PolyU Research Postgraduate Scholarship (PRPgS)
2024 Outstanding Undergraduate Teaching Assistant at Sichuan University
2024 Outstanding Graduate of Sichuan University
2023 Outstanding Graduate Student of Sichuan University
2023 First-class of Excellent Graduate Scholarship by Sichuan University
2023 Tencent Scholarship of Sichuan University
2021 Certificate of Honor from Wu Yuzhang Honors College

Skills

Programming Python, PyTorch, PyTorch Geometric, SQL, Linux command, Git
Languages Chinese, English (IELTS: 7.0), Fuzhou dialect