# Yi Zhou

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## Education

**2024 – Present**   **Hong Kong Polytechnic University**, Ph.D. in Computing.
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.

**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)". Under Review on *ACM Computing Surveys (**CSUR**)*, 2025.

## 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". CN113946730A.

**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". CN115171780A.

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". CN115831217A.

PT4 (USE) Min Zhu, Jiamin Zhu, Meixuan Wu, **Yi Zhou**, Haotian Zhu. "A Dynamic Visualization Recommendation Method Based on User Tasks". CN116204704A.

PT5 (USE) Min Zhu, Meixuan Wu, Jiamin Zhu, **Yi Zhou**, Haotian Zhu. "An Analytical Task Perception Method that Integrates Deep Learning Models and Rules". CN116303737A.

## Research Experience

**Jul 2024 – Now**
**Research in AI for Protein**.
- Authored a comprehensive survey on protein language models, highlighting foundation models and their adaptation advancements in the field of computational protein science. [P1, arXiv]

**Jan 2021 – Jun 2024**
**Research in Biomedical Network Analysis**.
- Contributed to *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 for biomedical entity link prediction in the project proposal, and drove a series of publications as student leader.
- Proposed LDAformer, a lncRNA-disease association prediction method achieving state-of-the-art performance. [J1, DOI, GitHub, PT2]
- Developed Timely-MDA, a benchmark for generalizable 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]
- Contributed to the development of DLMV, a visual analytic system for RNA-disease network that enables interactive exploration and analysis of specific biomedical entities. [Online 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 analytic platform with functions like topological association domain prediction. [PT1, PT3 (USE)]
- Participated in the development of Dowsing, a recommendation approach for the generation of multiple-view visualizations, therefore enhancing user-driven data exploration. [J3, PT4 (USE), PT5 (USE), DOI, Webpage, Online Demo]
- Participated in the development of GBDTCTRVis, a visual analytic 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)

**Fall 2024 & Spring 2025**
**Teaching Assistant**, Hong Kong Polytechnic University.
- Introduction to Artificial Intelligence and Data Analytic (COMP1004)

**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 |