

Yuming Zhou

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Education

University of Illinois Urbana-Champaign

PhD in Plant Biology (Incoming)

Focus: Computational Genomics; **Advisor:** Prof. Amy Marshall-Colon

Champaign, United States

Starting from Aug 2025

The Chinese University of Hong Kong, Shenzhen (CUHK-SZ)

BSc in Bioinformatics

Shenzhen, China

Sep 2021–Present

University of North Carolina at Chapel Hill

Global Visiting Program

Chapel Hill, United States

Aug 2023–Dec 2023

Research Experiences

Prof. Hsien-Da Huang's group, CUHK-SZ

Research Internship

Shenzhen, China

Apr 2024–Present

Focus: Drug-target Interaction Prediction

- Contributing to the development of SCOPE, a novel platform for semi-inductive drug-target interaction (DTI) prediction.
- Curating large-scale DTI datasets from multiple sources, focusing on data quality and diversity.
- Implementing and evaluating various ML models across different prediction scenarios.
- Assessing model performance using comprehensive metrics including AUROC, AUPRC, accuracy, sensitivity, and specificity.
- Designing and implementing a responsive web interface and REST APIs for SCOPE.
- Co-authoring a manuscript submitted to Nature Communications (NCOMMS-25-26389, available at Arvix).

Prof. Hsien-Da Huang's group, CUHK-SZ

Research Internship

Shenzhen, China

Apr 2024–Sep 2024

Focus: miRNA Upstream TSS Identification

- Contributing to the development of miRStart 2.0, an advanced database for microRNA TSS identification and TF regulation analysis.
- Conducting comprehensive benchmarking of the miRStart 2.0 model against existing tools.

Imperial College London

Student-led Research Project

Remote

Jun 2023–Dec 2023

Project: Aptamer-based Lateral Flow Test (ALFT) Device for NoroVirus

- Cooperating with students from Imperial to screen aptamer candidates for lateral flow device to detect Norovirus.
- Performing SELEX and building a workflow using tools like NSP and Haddock for massive screening.

Prof. Hsien-Da Huang's group, CUHK-SZ

Research Internship

Shenzhen, China

Apr 2023–Nov 2024

Focus: Traditional Chinese Medicine (TCM) Database

- Curating drug-target interaction records from existing TCM databases.
- Deploying crawlers to collect data from multiple sources, resulting in over 22,000 ingredients and 19,000 interactions.
- Sponsored via the Undergraduate Research Awards program.

Prof. Jian Huang's group, Soochow University

Research Training

Suzhou, China

Aug 2022–Sep 2022, Jul 2023–Aug 2023

Focus: Protein Prokaryotic Expression and Molecular Cloning

- Performing molecular biology experiments including PCR, gel electrophoresis and protein expression.

Teaching Experiences

CUHK-SZ

Undergraduate Student Teaching Fellow

Shenzhen, China

Sep 2024–Dec 2024

Course: Organic Chemistry and Biomolecules

- Completing paperwork, invigilating exams, grading assignments, and delivering tutorials (Paid).

Imperial College London

Advisor

Remote

Jun 2024–Oct 2024

Focus: the International Genetically Engineered Machine (iGEM) Competition

- Advising the team imperial-college (undergraduate track) in the iGEM competition.

Shanghai Renaissance Biotechnology Co., Ltd.

Lecturer

Remote

Jun 2023–Jun 2024

Focus: iGEM Wiki Website Development

- Tutoring iGEM wiki development for iGEM teams (high school track, paid).

CUHK-SZ

Student Help Room Preceptor

Shenzhen, China

Sep 2022–May 2023

Courses: General Chemistry, Introduction to Computer Science: Programming Methodology, and Computational Laboratory

- Tutoring students via walk-in meetings on their coursework (Paid).

Extracurricular Activities

Bioinformatics Association, CUHK-SZ <i>Founding Member & Deputy Head</i> ○ Developing plans for events in collaboration with other organizations. ○ Organizing and hosting an academic seminar on ADHD (Link to recording in Chinese).	Shenzhen, China <i>Sep 2023–Sep 2024</i>
Biomedical Engineering Association, CUHK-SZ <i>Head of the Planning Department</i> ○ Developing plans for events in collaboration with other organizations.	Shenzhen, China <i>Sep 2022–Sep 2023</i>

Skills

Programming & Data Analysis: Proficient in Python (scientific computing, data analysis, visualization) and R; Familiar with C and Swift; Experienced with big data analysis tools (Numpy, Pandas, Seaborn); Familiar with Machine Learning / Deep Learning techniques.

Bioinformatics: Gene expression data analysis, gene enrichment analysis, regulatory network analysis; Experienced with bioinformatics tools (GEO Dataset, iDEP, BLAST, GESA, JASPAR).

Wet Lab Techniques: Proficient in molecular biology techniques including SELEX, PCR, gel electrophoresis, microscopy, cell transformation, plasmid extraction, cell fractionation, and cell culture; Familiar with mouse autopsy and Western blot.

Molecular Modeling: Experienced in VMD, GROMACS, UCSF Chimera, Avogadro, GAMESS, OpenBabel, AutoDock Vina and their APIs; Proficient in automating research workflows through scripting.

Web Development: Proficient in front-end technologies (HTML, CSS, JavaScript); Familiar with back-end frameworks (e.g., Flask); Experienced in Chrome extension development; Familiar with iOS app programming using Swift.

System Administration: Linux system maintenance and configuration (Debian, Ubuntu, Arch); Familiar with virtualization (Proxmox VE, KVM+QEMU, VirtualBox); Experienced with Docker; Familiar with Windows Server (RDP and Hyper-V).

Version Control & Documentation: Skilled in Git for version control and collaborative development; Proficient in type-setting systems (Markdown, L^AT_EX, Typst)

Honors and Awards

School of Medicine, CUHK-SZ <i>Dean’s List</i> Awarded for excellent academic performance in 2023-2024	<i>Nov 2024</i>
iGEM Foundation <i>Gold Medal</i> Advising in the iGEM competition (undergraduate track)	<i>Oct 2024</i>
CUHK-SZ <i>Undergraduate Research Award (Extd.)</i> Sponsored for the TCM Database project	<i>Aug 2023</i>
iGEM Foundation <i>6 Gold Medals and 1 Silver Medal</i> Advising in the iGEM competition (high school track)	<i>Oct 2022, Oct 2023</i>
School of Medicine, CUHK-SZ <i>Dean’s List</i> Awarded for excellent academic performance in 2022-2023	<i>Sep 2023</i>
CUHK-SZ <i>Undergraduate Research Award</i> Sponsored for the TCM Database project	<i>Apr 2023</i>
School of Medicine, CUHK-SZ <i>Dean’s List</i> Awarded for excellent academic performance in 2021-2022	<i>Sep 2022</i>
Apple <i>Innovative Award</i> Awarded in the Showcase of the Mobile Application Innovation Contest	<i>Oct 2019</i>

Publications

Chen, Yigang, Xiang Ji, Ziyue Zhang, **Yuming Zhou**, Yang-Chi-Dung Lin, Hsi-Yuan Huang, Tao Zhang, Yi Lai, Ke Chen, Chang Su, Xingqiao Lin, Zihao Zhu, Yanggyi Zhang, Kangping Wei, Jiehui Fu, Yixian Huang, Shidong Cui, Shih-Chung Yen, Ariel Warshel, and Hsien-Da Huang. “SCOPE-DTI: Semi-Inductive Dataset Construction and Framework Optimization for Practical Usability Enhancement in Deep Learning-Based Drug Target Interaction Prediction”, version 1, 2025, <https://doi.org/10.48550/ARXIV.2503.09251>, <https://arxiv.org/abs/2503.09251>. Accessed 08 Apr. 2025.

Deng, Ming-Hao, Xue-Wen Yang, **Yu-Ming Zhou**, Lv-Zhong Xie, Tao Zou, and Ji-Gen Ping. “In Silico Research of Coagulation- and Fibrinolysis-Related Genes for Predicting Prognosis of Clear Cell Renal Cell Carcinoma”. *Translational Andrology and Urology*, vol. 14, no. 2, Feb. 2025, pp. 307–24. <https://doi.org/10.21037/tau-24-483>, <https://tau.amegroups.com/article/view/135048/html>. Accessed 10 Mar. 2025.

Xu, Jiatong, Jingting Wan, Hsi-Yuan Huang, Yigang Chen, Yi-xian Huang, Junyang Huang, Ziyue Zhang, Chang Su, **Yuming Zhou**, Xingqiao Lin, Yang-Chi-Dung Lin, and Hsien-Da Huang. “miRStart 2.0: Enhancing miRNA Regulatory Insights Through Deep Learning-based TSS Identification”. *Nucleic Acids Research*, 2024.