# Yuming Zhou

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## Education

**University of Illinois Urbana-Champaign** — **Champaign, United States**
*PhD in Plant Biology* — *Aug 2025–Present*
**Advisors:** Prof. Andrew Leakey; Prof. Diwakar Shukla

**The Chinese University of Hong Kong, Shenzhen (CUHK-SZ)** — **Shenzhen, China**
*BSc (Hons) in Bioinformatics, First Class Honors* — *Sep 2021–July 2025*

**University of North Carolina at Chapel Hill** — **Chapel Hill, United States**
*Global Visiting Program* — *Aug 2023–Dec 2023*

## Research & Working Experiences

**Prof. Andrew Leakey's group, U of I** — **Urbana, United States**
*Research Assistant* — *Aug 2025–Present*
**Focus:** Computational Protein-DNA Interactions
- Conducted research and curated various types of DNA/ Protein datasets/ benchmarking frameworks for model development and evaluation.
- Designing and implementing a large-scale benchmarking pipeline to evaluate multiple variants of xTrimoDNA, a company-developed DNA LLM, along with mambaDNA, EVO, and other SOTA DNA language models.
- Conducting delivery testing for company horizontal DNA models.

**BioMAP** — **Beijing, China**
*Algorithm Internship* — *Jun 2025–Aug 2025*
**Focus:** DNA Large Language Model (LLM)
- Conducted research and curated various types of DNA/ Protein datasets/ benchmarking frameworks for model development and evaluation.
- Designing and implementing a large-scale benchmarking pipeline to evaluate multiple variants of xTrimoDNA, a company-developed DNA LLM, along with mambaDNA, EVO, and other SOTA DNA language models.
- Conducting delivery testing for company horizontal DNA models.

**Prof. Hsien-Da Huang's group, CUHK-SZ** — **Shenzhen, China**
*Research Internship* — *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 accepted by Nature Communications.

**Prof. Hsien-Da Huang's group, CUHK-SZ** — **Shenzhen, China**
*Research Internship* — *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** — **Remote**
*Student-led Research Project* — *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** — **Shenzhen, China**
*Research Internship* — *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.

## Teaching Experiences

**CUHK-SZ** — **Shenzhen, China**
*Secondary Principal Investigator (PI)* — *Apr 2025–Present*
**Focus:** the International Genetically Engineered Machine (iGEM) Competition
- Supervising the team CUHK-Shenzhen (undergraduate track) in the iGEM competition (Ongoing; Primary PI: Dr. Zhi Ping).

**CUHK-SZ** — **Shenzhen, China**
*Undergraduate Student Teaching Fellow* — *Sep 2024–Dec 2024*
**Course:** Organic Chemistry and Biomolecules
- Completing paperwork, invigilating exams, grading assignments, and delivering tutorials (Paid).

**Imperial College London** **Remote**
*Advisor* *Jun 2024–Oct 2024*
**Focus:** the International Genetically Engineered Machine (iGEM) Competition
- Advising the team imperial-college (undergraduate track) in the iGEM competition.

**Shanghai Renascence Biotechnology Co., Ltd.** **Remote**
*Lecturer* *Jun 2023–Jun 2024*
**Focus:** iGEM Wiki Website Development
- Tutoring iGEM wiki development for iGEM teams (high school track, paid).

**CUHK-SZ** **Shenzhen, China**
*Student Help Room Preceptor* *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** **Shenzhen, China**
*Founding Member & Deputy Head* *Sep 2023–Sep 2024*
- Developing plans for events in collaboration with other organizations.
- Organizing and hosting an academic seminar on ADHD (Link to recording in Chinese).

**Biomedical Engineering Association, CUHK-SZ** **Shenzhen, China**
*Head of the Planning Department* *Sep 2022–Sep 2023*
- Developing plans for events in collaboration with other organizations.

## 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 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-based, Arch-based); 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 typesetting systems (Markdown, LaTeX, Typst)

## Honors and Awards

**iGEM Foundation**
***Gold Medal*** *Supervising (as a PI) in the iGEM competition (undergraduate track)* *Oct 2025*

**School of Medicine, CUHK-SZ**
***Outstanding Research Pioneer Award*** *Awarded for research during undergraduate studies* *May 2025*

**School of Medicine, CUHK-SZ**
***KUNPENG Academic Award*** *Awarded for academic performance in 2023-2024 (Scholarship of 10,000 CNY)* *Mar 2025*

**iGEM Foundation**
***Gold Medal*** *Advising in the iGEM competition (undergraduate track)* *Oct 2024*

**iGEM Foundation**
***6 Gold Medals and 1 Silver Medal*** *Advising in the iGEM competition (high school track)* *Oct 2022, Oct 2023*

**CUHK-SZ**
***Undergraduate Research Award*** *Sponsored for the TCM Database project* *Apr 2023, Aug 2023*

**School of Medicine, CUHK-SZ**
***Dean's List*** *Awarded for excellent academic performance in 2021-2024 (three consecutive years)* *Sep 2022, Sep 2023, Nov 2024*

**Apple**
***Innovative Award*** *Awarded in the Showcase of the Mobile Application Innovation Contest* *Oct 2019*

## 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 Optimiza-

tion 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.