Xin Xiong

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Education

- **PhD in Computational Biology**
  Hong Kong Baptist University, Expected 2025
  Advisor: Professor Liang Tian

- **Master of Engineering in Computer Technology**
  Shanghai Jiao Tong University, 2021
  Advisor: Professor Hai Zhao

- **Bachelor of Engineering in Bioengineering**
  Xi'an Polytechnic University, 2010

Work Experience

- **Research Assistant**
  Shenzhen Institutes of Advanced Technology (SIAT), CAS, 2020–2021
  - Focused on the deconvolution of bulk cell RNA-seq data from primary solid tumors.
  - Investigated the relationship between specific gene expression programs (e.g., EMT) and the abundance of infiltrated immune cells in the tumor microenvironment.
- **Research Assistant**
  Interdisciplinary Research Center of Biology and Chemistry (IRCBC), CAS, 2016–2019
  - Developed machine-learning-based prediction algorithms for CCS values and contributed to web server development (MetCCS and LipidCCS).
- **R&D Department Member**
  Genminix Informatics Ltd.Co., 2011–2016
  - Developed a method for quick search and visualization of feed-forward loops, leading to a Chinese patent (201410112193X).

Teaching Experience

- **Teaching Assistant**, Thermal and Statistical Physics (PHYS3047), 2023–2024
- **Teaching Assistant**, Thermal and Statistical Physics (PHYS3047), 2022–2023

Presentations

- **DeSide: A Unified Deep Learning Approach for Cellular Decomposition of Bulk Tumors Based on Limited scRNA-seq Data**
  Poster Presentation, *28th IUPAP International Conference on Statistical Physics*, August 7-11, 2023, University of Tokyo, Tokyo, Japan
- **DeSide: A unified deep learning approach for cellular deconvolution of tumor microenvironment**
  Oral Presentation, Best Speaker Award in the "AI for Biology" section, *1st AI for Science PhD Student Academic Forum in the Guangdong-Hong Kong-Macao Greater Bay Area*, November 1, 2024, Peking University Shenzhen Graduate School, Shenzhen, China

Publications

$ denotes equal contributions

* denotes corresponding author(s)

- **Xiong, X.**[$], Liu, Y.[$], Pu, D., Yang, Z., Bi, Z., Tian, L.*, and Li, X.* (2024). DeSide: A unified deep learning approach for cellular deconvolution of tumor microenvironment. *Proc. Natl. Acad. Sci. U. S. A.* 121, e2407096121.
- Zhou, Z., Luo, M., Chen, X., Yin, Y., **Xiong, X.**, Wang, R., and Zhu, Z.-J.* (2020). Ion mobility collision cross-section atlas for known and unknown metabolite annotation in untargeted metabolomics. *Nat. Commun.* 11, 4334.
- Shen, X., Wang, R., **Xiong, X.**, Yin, Y., Cai, Y., Ma, Z., Liu, N., and Zhu, Z.-J.* (2019). Metabolic reaction network-based recursive metabolite annotation for untargeted metabolomics. *Nat. Commun.* 10, 1516.
- Zhou, Z., Shen, X., Chen, X., Tu, J., **Xiong, X.**, and Zhu, Z.J.* (2019). LipidIMMS Analyzer: integrating multi-dimensional information to support lipid identification in ion mobility—mass spectrometry based lipidomics. *Bioinformatics* 35.
- Zhou, Z., Tu, J., **Xiong, X.**, Shen, X., and Zhu, Z.J.* (2017). LipidCCS: prediction of collision cross-section values for lipids with high precision to support ion mobility–mass spectrometry-based lipidomics. *Anal. Chem.* 89, 9559–9566.
- Zhou, Z., **Xiong, X.**, and Zhu, Z.-J.* (2017). MetCCS predictor: a web server for predicting collision cross-section values of metabolites in ion mobility-mass spectrometry based metabolomics. *Bioinformatics* 33, 2235–2237.

Skills

- **Software**: Python (9 years), R (8 years), TensorFlow (8 years), PyTorch (1 year), MySQL, Docker
- **Languages**: Chinese (native), English (fluent)
- **Data Analysis**: Bulk RNA-seq and Single-cell RNA-seq, LC-MS, Machine Learning Methods, Statistical Methods

References

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  Shenzhen Institutes of Advanced Technology (SIAT), CAS
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