





Jiating Yu, Ph.D.


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Employment History




2023 – Now  **Nanjing University of Information Science and Technology (NUIST)**
Assistant Professor, School of Mathematics and Statistics
Courses Taught: Linear Algebra, Machine Learning

Education

2018 – 2023  **Ph.D., University of Chinese Academy of Sciences (UCAS)**
Academy of Mathematics and Systems Science (AMSS)
Major in *Operational Research and Cybernetics*
Advisor: Ling-Yun Wu, Professor, Director of the Bioinformatics Center, AMSS





2014 – 2018  **B.D., Xiangtan University (XTU)**
School of Mathematics and Computational Science
Major in *Information and Computing Science (Shaofeng class)*




Research Interests

1.  **Multi-omics Data Integration and Analysis:** Focused on developing computational methodologies for the integration of multi-omics datasets to elucidate complex biological systems, aiming to uncover novel biomarkers and pathways that contribute to disease states.
2.  **Spatial Transcriptomics:** Dedicated to the analysis of spatial transcriptomics data to understand cellular interactions and tissue heterogeneity at single-cell resolution, with an emphasis on identifying spatially distinct gene expression patterns that may inform on developmental processes or disease mechanisms.
3.  **Network Modeling and Optimization in Biological Systems:** Interested in applying graph theory and network science principles to model biological networks (e.g., GRNs), with the goal of optimizing network analysis algorithms for improved predictive power and biological insight.

Research Publications

Journal Articles




- 1  **Jiating Yu, J. Leng, Z. Hou, D. Sun, and L.-Y. Wu, “Incorporating network diffusion and peak location information for better single-cell ATAC-seq data analysis,” *Briefings in Bioinformatics*, vol. 25, no. 2, bbae093, Mar. 2024, ISSN: 1477-4054.  DOI: 10.1093/bib/bbae093.**
- 2  **Jiating Yu, J. Leng, F. Yuan, D. Sun, and L.-Y. Wu, “Reverse network diffusion to remove indirect noise for better inference of gene regulatory networks,” *Bioinformatics*, vol. 40, no. 7, btae435, Jul. 2024, ISSN: 1367-4811.  DOI: 10.1093/bioinformatics/btae435.**

- 3 Z. Hou, J. Leng, **Jiating Yu**, Z. Xia, and L.-Y. Wu, "Pathexpsurv: Pathway expansion for explainable survival analysis and disease gene discovery," *BMC Bioinformatics*, vol. 24, p. 434, 2023, ISSN: 1471-2105.  DOI: 10.1186/s12859-023-05535-2.
- 4 **Jiating Yu**, J. Leng, D. Sun, and L.-Y. Wu, "Network refinement: Denoising complex networks for better community detection," *Physica A: Statistical Mechanics and its Applications*, vol. 617, p. 128 681, 2023, ISSN: 0378-4371.  DOI: 10.1016/j.physa.2023.128681.
- 5 **Jiating Yu** and L.-Y. Wu, "Multiple order local information model for link prediction in complex networks," *Physica A: Statistical Mechanics and its Applications*, vol. 600, p. 127 522, 2022, ISSN: 0378-4371.  DOI: 10.1016/j.physa.2022.127522.

Articles under review and accepted




- 1 **Jiating Yu**, J. Leng, X. Xu, *et al.*, "Research on chain retailer supply chain intelligent replenishment system," *Operations Research and Management Science (Chinese version, accepted)*; J. Yu and J. Leng contributed equally, 2024.
- 2 **Jiating Yu**, J. Zhao, T. Ren, D. Sun, and L.-Y. Wu, "Spatial cellular communication inference with ligand diffusion and transportation model," under review, 2024.
- 3 J. Leng, **Jiating Yu**, L.-Y. Wu, and H. Chen, "Spot2vector: Flexible integration of spatial and expression information for precise spot embedding via zinb-based graph autoencoder," under review; J. Yu and J. Leng contributed equally, 2024.

Skills



Languages	 Strong reading, writing and speaking competencies for English, Mandarin Chinese.
Coding	 Python, R, Matlab
Misc.	 Academic research, teaching, training.

Projects and Funds

Projects

2020-2021	 Research on analyzing the chain of security incidents 13th Five-Year Plan "Comprehensive Risk Assessment Technology for Public Security in the Winter Olympics" project. Participating members.
2021-2022	 Research on Performance Evaluation System for Research Institutes Cooperative Project of Beijing Institute of Labour Protection Science. Participating members.
2022-2024	 Research on Non-Oil Integrated Supply Chain China National Petroleum Corporation Co-operation Project. Participating members.

Funds

2020-2025	 Graph models and algorithms for cancer regulatory network construction and pathway analysis National Key Research and Development Special Project. Participating members.
2024-2027	 Heterogeneous network-based single-cell multi-omics data integration study The Startup Foundation for Introducing Talent of NUIST. Responsible person.



Miscellaneous Experience

Awards and Achievements

- 2022  **Schlumberger Scholarships**, University of Chinese Academy of Sciences.
- 2020  **Merit students**, University of Chinese Academy of Sciences.

- 2018  **Xiangtan University 2018 Outstanding Graduates**, Xiangtan University.
-  **Xiangtan Outstanding Graduates**, Xiangtan University.
- 2017  **National Inspiration Scholarship**, Xiangtan University.
- 2016  **Outstanding Student Cadre**, Xiangtan University.
-  **National Scholarships**, Xiangtan University.
-  **Scholarships in Basic Subjects**, Xiangtan University.
-  **Advanced Individual**, Xiangtan University.
-  **Second Prize of Mathematics Competition for College Students in Hunan Province (Mathematics Category)**, Xiangtan University.
-  **Third Prize of the Eighth National University Student Mathematics Competition (Mathematics Major)**, Xiangtan University.
- 2015  **Class A Scholarships**, Xiangtan University.
-  **Xiangjiang Scholarships**, Xiangtan University.

Certification

- 2018  **National Computer Rank Examination level 2.**
- 2016  **College English Test-6.**