

Curriculum Vitae

Name: Ju Xiang

Position: Professor, Doctoral supervisor

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Research Interests

- Computational Biology & Bioinformatics
- Machine Learning & Deep Learning
- Complex networks

Work Experience

- 2025.12-Now, Professor, Changsha University of Science and Technology, China
- 2022.09-2025.11, Associate Professor, Changsha University of Science and Technology, China
- 2016.12-2022.07, Associate Professor, Changsha Medical University, China
- 2014.02-2016.12, Instructor, Changsha Medical University, China
- 2008.09-2014.01, Instructor, The First Aeronautical College of Air Force, China

Education Experience

- 2018.09-2022.05, Doctoral degree, Central South University, China
- 2005.09-2008.06, Master's Degree, Xiangtan University, China
- 2001.09-2005.06, Bachelor's Degree, Xiangtan University, China

Professional Affiliations

- **Member:** PC member of international conferences for bioinformatics and computational biology (BIBM, ISBRA, ICIC, ACM-BCB, and APBC), CCF Senior Member, IEEE Member, Member of Chinese Association for Artificial Intelligence, and Director of Hunan Provincial Society for Neuroscience.
- **Reviewer:** American Journal of Human Genetics, Computers in Biology and Medicine, Computer Methods and Programs in Biomedicine, International Journal of Biological Macromolecules, Health Information Science and Systems, Methods, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Knowledge and Information Systems, GigaScience, Scientific Reports, BMC Bioinformatics, Briefings in functional genomics, Frontiers in Pharmacology, Frontiers in Aging Neuroscience, Frontiers in Genetics, Frontiers in Oncology, Frontiers in Physics, Frontiers in Applied Mathematics and Statistics, International Journal of Systems Science, Swarm and Evolutionary Computation, IEEE Systems Journal, Physica A, Chinese Physics B, Canadian Journal of Physics, International Journal of Systems Science, International Journal of Modern Physics B, Canadian Journal of Infectious Diseases and Medical Microbiology, Peer-to-Peer Networking and Applications.

Research Projects

- National Natural Science Foundation of China (Grant No. 62472051), 2025/01~2028/12, Principal Investigator.
- Hunan Provincial Natural Science Foundation of China (Grant No. 2024JJ5006), 2024/01~2026/12, Principal Investigator.
- National Natural Science Foundation of China (Grant No. 61702054), 2018/01-2020/12, Principal Investigator.
- Hunan Provincial Natural Science Foundation of China (Grant No. 2018JJ3568), 2018/01-2020/12, Principal Investigator.
- Training Program for Excellent Young Innovators of Changsha (Grant No. kq1802024), 2018/10-2023/10, Principal Investigator.
- Scientific Research Fund of Education Department of Hunan Province (Grant No. 17A024), 2018/01-2020/12, Principal Investigator.

Selected Publications (First/Corresponding author)

Over 100 academic papers have been published in renowned journals (e.g., Briefings in Bioinformatics, Bioinformatics, GPB, IEEE/ACM TCBB, IEEE JBHI, and IEEE TNSE), as well as in international conferences (e.g., BIBM (CCF B) and ISBRA (CCF C)). Among them, the papers where I am the first author or corresponding author are listed below.

- [1] Jin A, **Ju Xiang***, Xiangmao Meng, Yue Sheng, Hongling Peng, Min Li*. DyNDG: Identifying Leukemia-related Genes Based on Time-series Dynamic Network by Integrating Differential Genes, Genomics, Proteomics & Bioinformatics, 2025, 23(2): qzaf037. **(SCI, JCR:Q1)**
- [2] **Ju Xiang**, Kaixin Zeng, Shengkai Chen, Xiangmao Meng, Ruiqing Zheng, Ying Zheng, Yahui Long, Min Li*. Incorporating multi-scale module kernel for disease-gene identification in biological networks, Tsinghua Science and Technology, 2025. DOI: 10.26599/TST.2025.9010088 **(SCI, JCR:Q1)**
- [3] **Ju Xiang**, Yuting Qu, Zihao Guo, Xiangmao Meng, Ying Zheng, Yuzhou Wu*. Identifying MicroRNA-Disease Associations by Multiple Kernel Learning with Higher-Order Interactions, in: 2025 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2025, pp. 365–370. **(EI, CCF B)**
- [4] Wuguang Jiang, Min Zeng, **Ju Xiang***, Min Li*. MDDGCN: A Graph Convolutional Network-Based Framework for Identifying Depression-Related Pathogenic Genes, in: 2025 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2025, pp. 999–1004. **(EI, CCF B)**
- [5] Zihao Guo, Shengkai Chen, Jie Jiang, Yuting Qu, Yuzhou Wu, **Ju Xiang***. Predicting miRNA-Disease Associations by Multikernel Learning and Relational Graph Convolutional Neural Network, in: 2025 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2025, pp. 268–273. **(EI, CCF B)**
- [6] Shengkai Chen, Yuanyuan Liu, Xiaofei Mi, **Ju Xiang***, Dianyi Song*. Intelligent Algorithms of Action Recognition for Cardiopulmonary Resuscitation Based on Wearable Device, in: ISBRA 2025, Springer Nature Singapore, Singapore, 2025, pp. 361–372. **(EI, CCF C)**
- [7] Yan Zhang, **Ju Xiang***, Jianming Li. Denoising self-supervised learning for disease-gene association prediction, BMC Bioinformatics, 2025, 26(1): 260. **(SCI, JCR:Q1)**

- [8] **Ju Xiang**, Shengkai Chen, Lin-Cong-Hua Wang, Xiangmao Meng, Min Li*. Heterogeneous network impulsive dynamics for identifying disease-associated genes, in: 2024 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2024, pp. 377–382. **(EI, CCF B)**
- [9] **Ju Xiang**, Shengkai Chen, Xiangmao Meng, Ruiqing Zheng, Ying Zheng, Min Li*. MSMK: Multiscale Module Kernel for Identifying Disease-Related Genes, in: ISBRA 2024, Springer Nature Singapore, Singapore, 2024, pp. 13–24. **(EI, CCF C)**
- [10] Yan Zhang, **Ju Xiang***, Liang Tang, Jialiang Yang, Jianming Li, PGAGP: Predicting pathogenic genes based on adaptive network embedding algorithm, *Frontiers in Genetics*, 2023, 13: 1087784. **(SCI, JCR:Q2)**
- [11] Jinlong Ma, Tian Qin, **Ju Xiang***. Disease-gene prediction based on preserving structure network embedding, *Frontiers in Aging Neuroscience*, 2023, 15: 1061892. **(SCI, JCR:Q1)**
- [12] Jin A, **Ju Xiang***, Min Li*. DyNRW: Time-Series Dynamical Networks for Identifying HCC-Related Genes, in: 2023 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2023, pp. 147–152. **(EI, CCF B)**
- [13] Yibai Wang#, **Ju Xiang#***, Cuicui Liu, Min Tang, Rui Hou, Meihua Bao, Geng Tian, Jianjun He*, Binsheng He*. Drug repositioning for SARS-CoV-2 by Gaussian kernel similarity bilinear matrix factorization, *Frontiers in Microbiology*, 2022, 13: 1062281. **(SCI, JCR:Q1)**
- [14] **Ju Xiang**, Xiangmao Meng, Yichao Zhao, Fang-Xiang Wu, Min Li*. HyMM: hybrid method for disease-gene prediction by integrating multiscale module structure, *Briefings in Bioinformatics*, 2022, 23: bbac072. **(SCI, JCR:Q1)**
- [15] **Ju Xiang**, Jiashuai Zhang, Yichao Zhao, Fang-Xiang Wu, Min Li*. Biomedical data, computational methods and tools for evaluating disease-disease associations, *Briefings in Bioinformatics*, 2022, 23: bbac006. **(SCI, JCR:Q1)**
- [16] **Ju Xiang**, Jiashuai Zhang, Ruiqing Zheng, Xingyi Li, Min Li*. NIDM: network impulsive dynamics on multiplex biological network for disease-gene prediction, *Briefings in Bioinformatics*, 2021, 22: bbab080. **(SCI, JCR:Q1)**
- [17] **Ju Xiang#**, Ning-Rui Zhang#, Jia-Shuai Zhang, Xiao-Yi Lv, Min Li*. PrGeFNE: Predicting disease-related genes by fast network embedding, *Methods*, 2021, 192: 3-12. **(SCI, JCR:Q2)**

- [18] Yan Zhang#, [Ju Xiang#](#), Liang Tang, Jianming Li*, Qingqing Lu, Geng Tian, Bin-Sheng He*, Jialiang Yang*. Identifying breast cancer-related genes based on a novel computational framework involving KEGG pathways and PPI network modularity, *Frontiers in Genetics*, 2021, 12: 876. (SCI, JCR: Q2)
- [19] Ke Hu, [Ju Xiang*](#), Yun-Xia Yu*, Liang Tang, Qin Xiang, Jian-Ming Li, Yong-Hong Tang, Yong-Jun Chen, Yan Zhang. Significance-based multi-scale method for network community detection and its application in disease-gene prediction, *Plos One*, 2020, 15: e0227244. (SCI, JCR:Q2)
- [20] [Ju Xiang](#), Yan Zhang, Jian-Ming Li, Hui-Jia Li, Min Li*. Identifying multi-scale communities in networks by asymptotic surprise, *J. Stat. Mech.*, 2019, 2019: 033403. (SCI, JCR: Q2)
- [21] Guo Li-Juan*, Hu Ji-Song, Ma Xin-Guo, [Xiang Ju*](#). Interfacial interaction and Schottky contact of two-dimensional WS₂/graphene heterostructure, *Acta Physica Sinica (物理学报)*, 2019, 68: 20190020. (SCI, JCR:Q4)
- [22] [Ju Xiang](#), Yan-Ni Tang, Yuan-Yuan Gao, Lang Liu, Yi Hao*, Jian-Ming Li*, Yan Zhang*, Shi Chen. Phase transition of Surprise optimization in community detection, *Physica A*, 2018, 491: 693-707. (SCI, JCR: Q2)
- [23] [Ju Xiang](#), Hui-Jia Li*, Zhan Bu, Zhen Wang, Mei-Hua Bao, Liang Tang, Jian-Ming Li*. Critical analysis of (Quasi-)Surprise for community detection in complex networks, *Scientific Reports*, 2018, 8: 14459. (SCI, JCR:Q1)
- [24] Ke Hu, Jing-Bo Hu, Liang Tang, [Ju Xiang*](#), Jin-Long Ma, Yuan-Yuan Gao, Hui-Jia Li*, Yan Zhang*. Predicting disease-related genes by path structure and community structure in protein-protein networks, *J. Stat. Mech.*, 2018, 2018: 100001. (SCI, JCR: Q2)
- [25] Shi Chen, Zhi-Zhong Wang, Liang Tang, Yan-Ni Tang, Yuan-Yuan Gao, Hui-Jia Li, [Ju Xiang*](#), Yan Zhang*. Global vs local modularity for network community detection, *Plos One*, 2018, 13: e0205284. (SCI, JCR:Q2)
- [26] Shi Chen, Zhi-Zhong Wang, Mei-Hua Bao, Liang Tang, Ji Zhou, [Ju Xiang*](#), Jian-Ming Li*, Chen-He Yi. Adaptive multi-resolution Modularity for detecting communities in networks, *Physica A*, 2018, 491: 591-603. (SCI, JCR: Q2)
- [27] 郝一, 张煦, 李红超, [项炬*](#). 糖类抗原 19-9 及噬酸粒细胞与血红蛋白鉴别自身免疫性胰

- 腺炎与胰腺癌的临床价值研究, 中国全科医学, 2018, 21: 1-5. (北大核心)
- [28] **Ju Xiang**, Zhi-Zhong Wang, Hui-Jia Li*, Yan Zhang, Fang Li, Li-Ping Dong, Jian-Ming Li*, Li-Juan Guo*. Community detection based on significance optimization in complex networks, *J. Stat. Mech.*, 2017, 2017: 053213. (SCI, JCR: Q2)
- [29] **Ju Xiang**, Zhi-Zhong Wang, Hui-Jia Li*, Yan Zhang, Shi Chen, Cui-Cui Liu, Jian-Ming Li*, Li-Juan Guo*. Comparing local modularity optimization for detecting communities in networks, *International Journal of Modern Physics C*, 2017, 28: 1750084. (SCI, JCR:Q3)
- [30] **Ju Xiang**, Tao Hu, Yan Zhang*, Ke Hu, Yan-Ni Tang, Yuan-Yuan Gao, Ke Deng. Linear analysis of degree correlations in complex networks, *Pramana*, 2016, 87: 84. (SCI, JCR:Q2)
- [31] **Ju Xiang**, Tao Hu, Yan Zhang*, Ke Hu*, Jian-Ming Li, Xiao-Ke Xu, Cui-Cui Liu, Shi Chen. Local modularity for community detection in complex networks, *Physica A*, 2016, 443: 451-459. (SCI, JCR: Q2)
- [32] **Ju Xiang**, Ke Hu*, Yan Zhang, Mei-Hua Bao, Liang Tang, Yan-Ni Tang, Yuan-Yuan Gao, Jian-Ming Li*, Benyan Chen, Jing-Bo Hu. Enhancing community detection by using local structural information, *J. Stat. Mech.*, 2016, 2016: 033405. (SCI, JCR: Q2)
- [33] **Ju Xiang**, Yan-Ni Tang, Yuan-Yuan Gao, Yan Zhang*, Ke Deng, Xiao-Ke Xu, Ke Hu*. Multi-resolution community detection based on generalized self-loop rescaling strategy, *Physica A*, 2015, 432: 127-139. (SCI, JCR: Q2)
- [34] **Ju Xiang***, Tao Hu, Ke Hu*, Yan-Ni Tang, Yuan-Yuan Gao, Chun-Hong Chai, Xi-Jun Liu. Analysis of community-detection methods based on Potts spin model in complex networks, *Canadian Journal of Physics*, 2015, 93: 418-423. (SCI, JCR:Q4)
- [35] **Ju Xiang**, Ke Hu*, Yan Zhang*, Tao Hu, Jian-Ming Li. Analysis and perturbation of degree correlation in complex networks, *Europhys. Lett.*, 2015, 111: 48003. (SCI, JCR:Q3)
- [36] Hai-Long Yan, **Ju Xiang***, Xiao-Yu Zhang, Jun-Feng Fan, Fang Chen, Gen-Yi Fu, Er-Min Guo, Xin-Guang Hu, Ke Hu, Ru-Min Wang. Community detection using global and local structural information, *Pramana*, 2013, 80: 173-185. (SCI, JCR:Q2)
- [37] Xin-Guang Hu, **Ju Xiang***, Zheng Jiao, Yang Liu, Guo-Qiu Xie, Ke Hu. Boson bound states in the β -Fermi–Pasta–Ulam model, *Pramana*, 2013, 81: 839-848. (SCI, JCR:Q2)
- [38] **Ju Xiang**, Xin-Guang Hu, Xiao-Yu Zhang, Jun-Feng Fan, Xian-Lin Zeng, Gen-Yi Fu, Ke Deng,

Ke Hu*. Multi-resolution modularity methods and their limitations in community detection, Eur. Phys. J. B, 2012, 85: 1-10. **(SCI, JCR:Q4)**

[39] [Ju Xiang*](#), Ke Hu. Limitation of multi-resolution methods in community detection, Physica A, 2012, 391: 4995-5003. **(SCI, JCR: Q2)**

[40] [Ju Xiang](#), Ke Hu, Yi Tang*. A class of improved algorithms for detecting communities in complex networks, Physica A, 2008, 387: 3327-3334. **(SCI, JCR:Q2)**