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School of Physical Science and Technology, Beijing University of Posts and Telecommunications
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EDUCATION

School of Systems Science, Beijing Normal University
Ph.D., supervisor: [Jiang Zhang](#)

2018.09 – 2023.07

Department of Physics, Beijing Normal University
Bachelor of Science

2014.09 – 2018.07

WORKING EXPERIENCE

School of Physical Science and Technology, BUPT
Tenure-Track Assistant Professor

2025.11 – Present

Institute of Theoretical Physics, Chinese Academy of Sciences
Postdoctoral Researcher, postdoc collaborator: [Pan Zhang](#)

2023.11 – 2025.10

Zhejiang Lab
Senior Research Specialist

2023.07 – 2023.10

RESEARCH GRANTS

Young Scientists Fund of the NSFC

2025.01 - 2027.12

PUBLICATIONS

1. Tensor Network Markov Chain Monte Carlo: Efficient Sampling of Three-Dimensional Spin Glasses and Beyond
Tao Chen, **Jing Liu**[†], Youjin Deng[†], Pan Zhang[†] ([†]corresponding author)
[arXiv:2509.23945](#)
2. BatchTNMC: Efficient sampling of two-dimensional spin glasses using tensor network Monte Carlo
Tao Chen, Jingtong Zhang, **Jing Liu**[†], Youjin Deng[†], Pan Zhang[†] ([†]corresponding author)
[arXiv:2509.19006](#)
3. Efficient optimization of variational autoregressive networks with natural gradient
Jing Liu, Ying Tang, Pan Zhang
Physical Review E **111** (2), 025304
4. Recurrent Dynamic Message Passing with Loops for Epidemics on Networks
Fei Gao, **Jing Liu**, Yaqian Zhao
Chaos, Solitons & Fractals **184**, 115045
5. Learning nonequilibrium statistical mechanics and dynamical phase transitions
Ying Tang*, **Jing Liu***, Jiang Zhang, Pan Zhang (*contributed equally)
Nature Communications **15** (1), 1117
6. Tensor networks for unsupervised machine learning
Jing Liu, Sujie Li, Jiang Zhang, Pan Zhang
Physical Review E **107** (1), L012103

7. Human mobility in interest space and interactive random walk
Fanqi Zeng, Li Gong, **Jing Liu**, Jiang Zhang, Qinghua Chen, Ruyue Xin
[Journal of Physics: Complexity 1 \(2\), 025004](#)
8. Gumbel-Softmax Optimization: A Simple General Framework for Combinatorial Optimization Problems on Graphs
Jing Liu, Fei Gao, Jiang Zhang
[COMPLEX NETWORKS 2019: Complex Networks and Their Applications VIII pp 879–890](#)
9. A general deep learning framework for network reconstruction and dynamics learning
Zhang Zhang, Yi Zhao, **Jing Liu**, Shuo Wang, Ruyi Tao, Ruyue Xin, Jiang Zhang
[Applied Network Science 4 \(110\), 1-17](#)
10. Chinese Address Similarity Calculation Based on Auto Geological Level Tagging
Jing Liu, Jianbin Wang, Changqing Zhang, Xiubo Yang, Jianbo Deng, Ruihe Zhu, Xiaojie Nan, Qinghua Chen
[ISNN 2019: Advances in Neural Networks – ISNN 2019 pp 431–438](#)
11. Coevolution of agent's behavior and noise parameters in majority vote game on multilayer networks
Jing Liu, Ying Fan, Jiang Zhang, Zengru Di
[New Journal of Physics 21 \(1\), 015007](#)