

Feng Pan

Block S15, 3 Science Drive 2
Singapore 117543
☎ (+86)156 5186 2330
✉ fengpan1994@gmail.com
📄 <https://fanerst.github.io/>

Research Interests

Statistical Physics, Tensor Network Algorithm, Quantum Computing.

Academic Positions

- 2022.7-2023.1 **Visiting Scholar**, *Institute of Theoretical Physics, Chinese Academy of Sciences*,
Host: Prof. Pan Zhang.
- 2023.2-2023.7 **Visiting Scholar**, *CAS Center For Excellence in Quantum Information and Quantum Physics, University of Science and Technology of China*,
Host: Prof. Chaoyang Lu and Prof. Jianwei Pan.
- 2023.8-Present **Postdoctoral Research Fellow**, *Centre for Quantum Technologies, National University of Singapore*,
PI: Prof. Patrick Rebentrost.

Education

- 2017.9-2022.7 **Institute of Theoretical Physics, Chinese Academy of Sciences, Beijing**,
PhD in Physics, Supervisor: Prof. Pan Zhang.
- 2015.9-2016.1 **Massachusetts Institute of Technology, Cambridge**,
Exchange Student, Physics.
- 2013.9-2014.1 **National Tsing Hua University, Hsinchu**,
Exchange Student, Mathematics & Physics.
- 2012.9-2016.6 **Nanjing University of Aeronautics and Astronautics, Nanjing**,
Bachelor of Science, Mathematics & Physics.

Publications & Preprints

- [1] **Feng Pan**, Keyang Chen, and Pan Zhang, *Solving the Sampling Problem of the Sycamore Quantum Circuits*, *Phys. Rev. Lett.* **129**, 090502. (2022) (Editors' Suggestion)
- [2] **Feng Pan**, and Pan Zhang, *Simulation of quantum circuits using the big-batch tensor network method*, *Phys. Rev. Lett.* **128**, 030501 (2022). (Editors' Suggestion)
- [3] Sujie Li, **Feng Pan**, Pengfei Zhou, and Pan Zhang, *Boltzmann machines as two-dimensional tensor networks*, *Phys. Rev. B.* **104**, 075154 (2021)
- [4] **Feng Pan**, Pengfei Zhou, Hai-Jun Zhou and Pan Zhang, *Solving statistical mechanics on sparse graphs with feedback-set variational autoregressive networks*, *Phys. Rev. E.* **103**, 01203 (2021)
- [5] **Feng Pan**, Pengfei Zhou, Sujie Li and Pan Zhang, *Contracting arbitrary tensor networks: General approximate algorithm and applications in graphical models and quantum circuit simulations*, *Phys. Rev. Lett.* **125**, 060503 (2020)
- [6] Ya-Peng Hu, **Feng Pan**, and Xin-Meng Wu, *The effects of massive graviton on the equilibrium between the black hole and radiation gas in an isolated box*, *Phys. Lett. B* **772**, 553-558 (2017)
- [7] **Feng Pan**, Hanfeng Gu, Lvlin Kuang, Bing Liu, Pan Zhang, *Efficient Quantum Circuit Simulation by Tensor Network Methods on Modern GPUs*, arxiv:2310.03987
- [8] Hanyan Cao, **Feng Pan**, Yijia Wang, Pan Zhang, *qecGPT: decoding Quantum Error-correcting Codes with Generative Pre-trained Transformers*, arxiv:2307.09025
- [9] Yijia Wang, Yuwen Ebony Zhang, **Feng Pan**, Pan Zhang, *Tensor Network Message Passing*, arxiv:2305.01874

Awards

- 2023 Second Prize of Beijing Natural Science Award
- 2023 Outstanding Doctoral Dissertation of the Chinese Academy of Sciences, Chinese Academy of Sciences.
- 2021 National scholarship for doctoral students, Ministry of Education of China.
- 2021 Principal Scholarship, Chinese Academy of Sciences.
- 2015 Exchange Student Scholarship, Jiangsu Education Association for International Exchange.
- 2013 National Scholarship for bachelor students, Ministry of Education of China.

Service

Journal Physical Review Letters, Quantum
Referee