

## Curriculum Vitae, Xingjian Zhang

### Contact

Email: [zhang-xj18@mails.tsinghua.edu.cn](mailto:zhang-xj18@mails.tsinghua.edu.cn)

### Present position

- ◇ PhD Candidate, supervised by Prof. Xiongfeng Ma, Center for Quantum Information, Institute for Interdisciplinary Information Sciences, Tsinghua University since 2018

### Awards

- ◇ Supreme Trophy in the 17th ‘Challenger Cup’ (2021)
- ◇ National Scholarship (2021)

### Research

Xingjian Zhang’s current research interests in quantum information science include quantum cryptography, quantum Shannon theory, and quantum nonlocality.

- ◇ arXiv: [https://arxiv.org/a/zhang\\_x\\_22.html](https://arxiv.org/a/zhang_x_22.html)
- ◇ ORCID: <https://orcid.org/0000-0003-0677-6996>

### Papers

- ◇ D. Wu, Y.-F. Jiang, X.-M. Gu, L. Huang, B. Bai, Q.-C. Sun, **X. Zhang**, et al., *Experimental refutation of real-valued quantum mechanics under strict locality conditions*, Phys. Rev. Lett. accepted (2022)
- ◇ Y. Huang, **X. Zhang**, and X. Ma, *Stream privacy amplification for quantum cryptography*, PRX Quantum, 3(2): 020353 (2022)
- ◇ G. Liu, **X. Zhang**, and X. Ma, *Classically Replaceable Operation*, arXiv: 2203.14244 (2022)
- ◇ H. Dai, B. Chen, **X. Zhang**, and X. Ma, *Intrinsic randomness under general quantum measurements*, arXiv: 2203.08624 (2022)
- ◇ **X. Zhang**, P. Zeng, T. Ye, H.-K. Lo, and X. Ma, *Quantum Complementarity Approach to Device-Independent Security*, arXiv: 2111.13855 (2021) [**Selected as a contributed talk at TQC 2022**]
- ◇ C.-L. Li, K.-Y. Zhang, **X. Zhang**, K.-X. Yang, Y. Han, S.-Y. Cheng, et al., *Device-Independent-Quantum-Randomness-Enhanced Zero-Knowledge Proof*, arXiv: 2111.06717 (2021)
- ◇ **X. Zhang**, Y. Liu, and X. Yuan, *Estimating Coherence Measures with Untrusted Devices*, Adv. Quantum Technol., 2000153 (2021).
- ◇ M.-H. Li\*, **X. Zhang**\*, W.-Z. Liu, S.-R. Zhao, B. Bai, Y. Liu, et al., *Experimental realization of device-independent quantum randomness expansion*, Phys. Rev. Lett., 126, 050503 (2021) [**\* Co-first authors**]
- ◇ **X. Zhang** and Q. Zhao, *Simultaneous Certification of Entangled States and Measurements in Bounded Dimensional Semi-Quantum Games*, Phys. Rev. Research, 2(3): 033400 (2020)
- ◇ Z.-D. Li, Q. Zhao, R. Zhang, L.-Z. Liu, X.-F. Yin, **X. Zhang**, et al., *Measurement-Device-Independent Entanglement Witness of Tripartite Entangled States and Its Applications*, Phys. Rev. Lett., 124, 160503 (2020)
- ◇ S. Chen, **X. Zhang**, Y. Zhou, and Q. Zhao, *One-shot Coherence Distillation with Catalysts* Phys. Rev. A, 100(4): 042323 (2019)

**Conferences**

- ◇ **Contributed Talk** ‘Quantum Complementarity Approach to Device-Independent Security’, 17th Conference on the Theory of Quantum Computation, Communication and Cryptography (TQC2022), recorded video at <https://go.iquist.illinois.edu/TQC2022Recordings> (2022.7)  
**Invited Talk** ‘Device-independent quantum randomness expansion: from theory to practice’, Student Conference on Optics and Photonics-2021 (2021.11)
- ◇ **Invited Talk** ‘Photonic implementation of device-independent quantum randomness expansion’, 2021 IEEE Photonics Society Summer Topicals Meeting Series (SUM) (2021.7)
- ◇ **Invited Talk** ‘Device-Independent Quantum Random Number Generation: Theory’, Seminar of Quantum Coherence and Its Applications, SUSTEC (2021.1)
- ◇ ‘Security Assessment of Quantum Networks’, Quantum Information and Measurement, Optical Society of America (2021.11)

**Professional Activities**

2019-2021 Participation in the proposal for ITU standard of device-independent quantum random number generator (QIT4N-I-018, Focus Group)

**TA Activities**

Spring term	2021-2022	General Physics (1) (in English)
Autumn term	2021-2022	Quantum Communication and Cryptography (in English)
Autumn term	2021-2022	Foundation of Quantum Information
Autumn term	2019-2020	Quantum Communication and Cryptography (in English)
Spring term	2018-2019	Diploma Project (Thesis)
Autumn term	2018-2019	Research Practice
Summer term	2017-2018	Research Immersion Training