

Xia Liu

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| EDUCATION | University of Chinese Academy of Sciences <i>Ph.D. in Cryptography</i> | Beijing, China Sep 2019 - Jun 2024 |
| | Qingdao University <i>B.S. in Mathematics</i> | Qingdao, China Sep 2014 - Jun 2018 |
| EXPERIENCE | Ph.D. candidate UCAS, Institute of Information Engineering <i>Advisor: Prof. Li Yang</i> | Sep 2019 - Jun 2024 Beijing, China |
| | <ul style="list-style-type: none">Involved in the project of quantum security research of public key cryptography.Participate in the quantum security research of cryptographic protocols, and investigate the feasibility of Shor's algorithm on ion trap quantum computers. | |
| | Research Assistant Hong Kong University of Science and Technology (Guangzhou) <i>Advisor: Prof. Xin Wang</i> | Aug 2023 - May 2024 Guangzhou, China |
| | <ul style="list-style-type: none">Participate in the research of quantum information science, including quantum communication, entanglement theory, and quantum machine learning.Involved in the research project application, organization and management. | |
| | Teaching Assistant UCAS, Institute of Information Engineering <i>Advisor: Prof. Li Yang</i> | Mar 2021 - Jun 2023 Beijing, China |
| | <ul style="list-style-type: none">Quantum Information and Quantum Cryptography, responsible for answering questions and checking exercises after class. | |
| | Research Intern Institute for Quantum Computing, Baidu Research <i>Mentor: Dr. Xin Wang</i> | Jul 2021 - May 2023 Beijing, China |
| | <ul style="list-style-type: none">Explored variational quantum circuit compiling and quantum metrology with Paddle Quantum.Conducted research in variational quantum algorithms, leading to one manuscript and two patents.Involved in the development of Paddle Quantum and Qulearn. | |
| | Research Assistant Qingdao University, Department of Business <i>Advisor: Prof. Chongfeng Wang</i> | Oct 2015 - Jun 2017 Qingdao, China |
| <ul style="list-style-type: none">Participated in the key statistical research project of Shandong Province: Research on collaborative innovation mechanism of strategic emerging industrial clusters.Investigated the impact of innovation network on innovation performance with the biological industry as an example. | | |

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| HONORS | Outstanding Student Award | 2020-2021, 2021-2022 |
| | For excellent performance in UCAS. | |
| | First Prize of the 15-th Challenge Cup | 2017 |
| | Challenge Cup National College Students Extracurricular Academic Science and Technology Works Competition. | |
| | Outstanding Student Award | 2016 |
| | For excellent performance in Qingdao University. | |
| | Provincial Government Inspirational Scholarship | 2016 |
| | Third Class Scholarship, Qingdao University | 2015-2016, 2016-2017 |

PUBLICATIONS (†) indicates a co-first author.

X. Liu[†], G. Liu[†], H. Zhang[†], J. Huang, X. Wang,
Mitigating barren plateaus of variational quantum eigensolvers,
 IEEE Transactions on Quantum Engineering.

H. Yao[†], **X. Liu**[†], C. Zhu, X. Wang,
Optimal uni-local virtual quantum broadcasting,
 Physical Review A.

X. Liu, H. Yang, L. Yang,
Minimizing CNOT-count in quantum circuit of the extended Shor's algorithm for ECDLP.
 Cybersecurity 6, 48 (2023).

X. Liu, H. Yang, L. Yang,
Feasibility Analysis of Cracking RSA with Improved Quantum Circuits of the Shor's Algorithm,
 Security and Communication Networks 2023 (2023).

W. Gao, L. Yang, D. Zhang, **X. Liu**,
Quantum Identity-Based Encryption from the Learning with Errors Problem,
 Cryptography, 6(1), 9.

PATENTS

Xia Liu, Lei Zhang, Xin Wang, Guangxi Li
 量子演化参数确定方法及装置、电子设备和介质,
 Publication number: CN117196056A. Granted, 2023.

Langyu Li, Zhiping Liu, **Xia Liu**, Lei Zhang, Zihe Wang, Xin Wang,
 量子云计算的处理方法、设备、系统及存储介质,
 Publication number: CN116974758A. Granted, 2023.

Langyu Li, Zhiping Liu, **Xia Liu**, Lei Zhang, Zihe Wang, Xin Wang,
 量子云计算的处理方法、设备、系统及存储介质,
 Publication number: CN117009075A. Granted, 2023.

Xin Wang, **Xia Liu**, Jiabin Huang,
 量子电路处理方法、电路、计算设备、装置及存储介质,
 Publication number: CN114492813A. Granted, 2022.

Xin Wang, Jiabin Huang, **Xia Liu**, Zihe Wang,
 基态能量的确定方法、装置、设备及存储介质,
 Publication number: CN114418103A. Granted, 2022.

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| SERVICES | Asian Quantum Information Science Conference , 2023, Reviewer Quantum Computing Theory in Practice , 2024, Reviewer |
| PROJECTS | Paddle Quantum https://qml.baidu.com/ Participated in the updating and maintenance of the Paddle Quantum, including tutorials, API, etc. Qulearn https://qulearn.baidu.com/textbook/preface Participated in the writing and updating of the Qulearn. |
| References | Dr. Li Yang Professor, State Key Laboratory of Information Security, Institute of Information Engineering, Chinese Academy of Sciences, yangli@iie.ac.cn. Dr. Xin Wang Associate Professor, Thrust of Artificial Intelligence, Information Hub, Hong Kong University of Science and Technology (Guangzhou), wangxinfelix@gmail.com. Dr. Chongfeng Wang Professor, Department of Business, Qingdao University, fengunsw@126.com. |