

JINDI WU

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RESEARCH INTEREST

My research interests lie in the areas of quantum machine learning, quantum error formalization and mitigation, quantum circuit compilation, and federated learning.

EDUCATION

William & Mary, VA, USA

Aug. 2020 - May 2025 (expected)

Ph.D. Candidate in Computer Science

Advisor: Prof. Qun Li

Syracuse University, NY, USA

Sep. 2018 - May 2020

M.S. in Computer Science

Nanjing University of Aeronautics and Astronautics, China

Sep. 2013 - Jun. 2017

B.E. in Information Security

Thesis: Modeling and Verification of Aircraft Display Control Software Requirements for Safety Analysis

PUBLICATIONS

Peer-reviewed Conference Papers

1. Detecting Fraudulent Services on Quantum Cloud Platforms via Dynamic Fingerprinting
Jindi Wu, Tianjie Hu, and Qun Li
43rd IEEE/ACM International Conference on Computer-Aided Design (ICCAD'24)
2. Quantum Network Routing Based on Surface Code Error Correction
Tianjie Hu, **Jindi Wu**, and Qun Li
44th IEEE International Conference on Distributed Computing Systems (ICDCS'24)
3. MORE: Measurement and Correlation-based Variational Quantum Circuit for Multi-classification
Jindi Wu, Tianjie Hu, and Qun Li
4th IEEE International Conference on Quantum Computing and Engineering (QCE'23)
4. Laws: Look around and warm-start natural gradient descent for quantum neural networks
Zeyi Tao, **Jindi Wu**, and Qun Li
2nd IEEE International Conference on Quantum Software (QSW'23)
5. Scalable Quantum Neural Networks for Classification
Jindi Wu, Zeyi Tao, and Qun Li
3rd IEEE International Conference on Quantum Computing and Engineering (QCE'22)
6. Efficient Privacy-Preserving Federated Learning for Resource-Constrained Edge Devices
Jindi Wu, Qi Xia, and Qun Li
17th International Conference on Mobility, Sensing and Networking (MSN'21)
7. SAFE: Similarity-aware multi-modal fake news detection
Xinyi Zhou, **Jindi Wu**, and Reza Zafarani
24th Pacific-Asia Conference on knowledge discovery and data mining (PAKDD'20)

Journal & Magazine Articles

1. Q-ID: Lightweight Quantum Network Server Identification through Fingerprinting
Jindi Wu, Tianjie Hu, and Qun Li
IEEE Network 2024
2. Distributed Quantum Machine Learning: Federated and Model-Parallel Approaches
Jindi Wu, Tianjie Hu, and Qun Li
IEEE Internet Computing 28.2 (2024): 65-72.
3. SurfaceNet: Fault-Tolerant Quantum Networks with Surface Codes
Tianjie Hu, **Jindi Wu**, and Qun Li
IEEE Network 2023
4. A survey of federated learning for edge computing: Research problems and solutions
Qi Xia, Winson Ye, Zeyi Tao, **Jindi Wu**, and Qun Li
High-Confidence Computing 1.1 (2021): 100008. (HCC'21)

Poster

1. Scalable Quantum Convolutional Neural Networks for Edge Computing
Jindi Wu and Qun Li
7th IEEE/ACM Symposium on Edge Computing (SEC'22)
2. Fingerprinting Cloud-Based Quantum Computers Using Quantum Noise
Jindi Wu, Tianjie Hu, and Qun Li
3rd Commonwealth Cyber Initiative Symposium (CCI Symposium'24)

PROFESSIONAL EXPERIENCE

Research Assistant Department of Computer Science, William & Mary, Williamsburg, VA, USA Advisor: Prof. Qun Li	Sep. 2020 - Present
Teaching Assistant William & Mary	Sep. 2020 - May 2022
<ul style="list-style-type: none"> • CSCI 303 Algorithms, Spring 2022 • CSCI 416 Introduction to Machine Learning, Fall 2021 • CSCI 304 Computer Organization, Spring 2021 • CSCI 301 Software Development, Fall 2020 	
Graduate Assistant Machine Learning Lab, College of Engineering and Computer Science, Syracuse University, NY, USA Advisor: Prof. Qinru Qiu <i>UAV Trajectory Planning and Real-time Simulation</i>	May 2019 - Sep. 2020
Graduate Assistant Data Lab, College of Engineering and Computer Science, Syracuse University, NY, USA Advisor: Prof. Reza Zafarani <i>Fake News Detection</i>	Mar. 2019 - Jan. 2020
Undergraduate Assistant Intelligent Aviation Computing Systems Lab, Department of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics, Jiangsu, China Advisor: Prof. Lisong Wang <i>Development of aircraft display control software</i>	Feb. 2016 - Jun. 2017

INVITED TALKS

- **MORE: Measurement and Correlation-based Variational Quantum Circuit for Multi-classification**
QCE'23, Bellevue, Washington
- **Quantum Machine Learning**
W&M Graduate & Honors Research Symposium'23, Williamsburg, Virginia
- **Scalable Quantum Neural Networks for Classification**
QCE'22, Broomfield, Colorado
- **Efficient Privacy-Preserving Federated Learning for Resource-Constrained Edge Devices**
MSN'21, Virtual

HONORS & AWARDS

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|---|------|
| • W&M International Student Opportunity Scholarship | 2022 |
| • SEC'22 Travel Grant | 2022 |
| • High-Confidence Computing (HCC) 2021 Best Paper Award | 2021 |
| • W&M SA Conference Fund | 2021 |

COMMUNITY SERVICE

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|---|------|
| • Grace Hopper Celebration 23 (GHC'23) Graduate Chaperone | 2023 |
| • QCE'23 Workshop PC Member | 2023 |
| • SEC'22 PhD Forum Co-chair | 2022 |

Reviewer

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| • ICCAD'23 Quantum Contest | 2023 |
| • Expert Systems With Applications (ESWA) | 2024 |
| • IEEE Internet Computing | 2024 |
| • IEEE Network Magazine | 2024 |
| • Expert Systems With Applications (ESWA) | 2023 |
| • IEEE Internet Computing | 2023 |
| • IEEE Internet of Things Journal | 2023 |
| • Applied Intelligence (APIN) | 2023 |
| • 4th IEEE International Conference on Quantum Computing and Engineering (QCE'23) | 2023 |
| • IEEE Transactions on Computers | 2023 |
| • 10th IEEE Conference on Communications and Network Security (IEEE CNS) | 2022 |
| • Journal of Reliable Intelligent Environments (JRIE) | 2022 |
| • IEEE Transactions on Computers | 2022 |
| • IEEE Transactions on Computers | 2021 |