

## Jiarui Zhang

I received the B.Eng. degree in Computer Science and Technology from Shanghai Jiao Tong University in 2017. I am currently pursuing the Ph.D. degree in Electrical and Computer Engineering at Stony Brook University. My research interests include algorithms and systems for blockchain, edge computing, and quantum networking.

### EDUCATION

#### Stony Brook University

Aug. 2017 – Present

Doctor of Philosophy candidate in Computer Engineering

Advised by Prof. Yuanyuan Yang

#### Shanghai Jiao Tong University

Sep. 2013 – Jun. 2017

Bachelor in Computer Science and Technology

ACM Honored Class Program, a pilot computer science class in China with extensive academic reputation.

Advised by Prof. Xiaotie Deng

### PUBLICATIONS

**J. Zhang\***, Y. Zeng\*, J. Liu, Z. Liu and Y. Yang, “Multi-Entanglement Routing Design over Quantum Networks Using Greenberger-Horne-Zeilinger Measurements,” in *IEEE/ACM Transactions on Networking*, 2025.

**J. Zhang**, W. Lin, Y. Zeng, X. Shang and Y. Yang, “Secured Data Sharing and Storage System for Intelligent Transportation System via Lightweight Blockchain,” 2025 50th IEEE Conference on Local Computer Networks (LCN), Sydney, Australia, 2025.

**J. Zhang** and Y. Yang, “A Novel Reputation-based Sharding Blockchain System in Edge Sensor Networks,” 2025 IEEE 45th International Conference on Distributed Computing Systems (ICDCS), Glasgow, Scotland, UK, 2025.

**J. Zhang**, X. Shang, Y. Zeng and Y. Yang, “A Novel Blockchain-based System for Service Quality Improvement in Multi-Tenant O-RANs,” 2024 IEEE Global Communications Conference, Cape Town, South Africa, 2024.

**J. Zhang\***, Y. Zeng\*, X. Shang, J. Liu, Z. Liu and Y. Yang, “Multi-User Entanglement Routing Design over Quantum Internets,” 2024 IEEE 44th International Conference on Distributed Computing Systems (ICDCS), Jersey City, NJ, USA, 2024. (**Best paper award**)

**J. Zhang\***, Y. Zeng\*, Z. Liu and Y. Yang, “Entanglement management through swapping over quantum internets,” *ACM SIGMETRICS Performance Evaluation Review*, 2023.

**J. Zhang\***, Y. Zeng\*, J. Liu, Z. Liu and Y. Yang, “Entanglement Routing Over Quantum Networks Using Greenberger-Horne-Zeilinger Measurements,” 2023 IEEE 43rd International Conference on Distributed Computing Systems (ICDCS), Hong Kong, Hong Kong, 2023.

**J. Zhang\***, Y. Zeng\*, J. Liu, Z. Liu and Y. Yang, “Entanglement Routing Design Over Quantum Networks,” in *IEEE/ACM Transactions on Networking*, 2024.

**J. Zhang** and Y. Huang, “ITF: A Blockchain System with Incentivized Transaction Forwarding,” 2022 IEEE 42nd International Conference on Distributed Computing Systems (ICDCS), Bologna, Italy, 2022.

**J. Zhang\***, Y. Zeng\*, J. Liu, Z. Liu and Y. Yang, “Multi-Entanglement Routing Design over Quantum Networks,” IEEE INFOCOM 2022 - IEEE Conference on Computer Communications, London, United Kingdom, 2022.

**J. Zhang**, Y. Cheng, X. Deng, B. Wang, J. Xie and Y. Yang, “A Reputation-Based Mechanism for Transaction Processing in Blockchain Systems,” in IEEE Transactions on Computers, 2022.

**J. Zhang**, Y. Huang, F. Ye and Y. Yang, “A Novel Proof-of-Reputation Consensus for Storage Allocation in Edge Blockchain Systems,” 2021 IEEE/ACM 29th International Symposium on Quality of Service (IWQOS), Tokyo, Japan, 2021.

M. Zhang, Y. Cheng, X. Deng, B. Wang, J. Xie, Y. Yang and **J. Zhang**, “Accelerating Transactions Relay in Blockchain Networks via Reputation,” 2021 IEEE/ACM 29th International Symposium on Quality of Service (IWQOS), Tokyo, Japan, 2021.

Y. Huang, **J. Zhang**, J. Duan, B. Xiao, F. Ye and Y. Yang, “Resource Allocation and Consensus of Blockchains in Pervasive Edge Computing Environments,” in IEEE Transactions on Mobile Computing, 2022.

**J. Zhang**, Y. Cheng, X. Deng, B. Wang, J. Xie and Y. Yang, “Preventing Spread of Spam Transactions in Blockchain by Reputation,” 2020 IEEE/ACM 28th International Symposium on Quality of Service (IWQoS), Hang Zhou, China, 2020. (**Video presentation award**)

Y. Huang, **J. Zhang**, J. Duan, B. Xiao, F. Ye and Y. Yang, “Resource Allocation and Consensus on Edge Blockchain in Pervasive Edge Computing Environments,” 2019 IEEE 39th International Conference on Distributed Computing Systems (ICDCS), Dallas, TX, USA, 2019.

**J. Zhang**, Y. Huang, Y. Zeng, X. Shang and Y. Yang, “ITFC: A Blockchain System with Incentivized Transaction Forwarding in Cloud Network,” Submitted to IEEE Transactions on Cloud Computing. Under review

**J. Zhang**, Y. Zeng, and Y. Yang, “Merging Proof-of-Work and Quantum Proofs”. In progress

\* - Equal contribution

## TEACHING EXPERIENCE

**Stony Brook University ACM-ICPC Team** Dec. 2018 – Present  
Assistant Coach

- As the best result in SBU history, the 2020 team ranked 3rd in the 2020 Greater New York Regional, and the 2023 team ranked 19th in the 2023 North American Championship.

**Shanghai Jiao Tong University ACM-ICPC Team** Jun. 2015 – Jul. 2016  
Assistant Coach

**ESE 123, Introduction to Electrical and Computer Engineering**  
Teaching Assistant Fall 2024, Fall 2021, Spring 2021, Spring 2020, Fall 2017

**ESE 124, Programming Fundamentals**  
Teaching Assistant

Spring 2024, Spring 2019, Spring 2018

**ESE 224, Advanced Programming and Data Structures**  
Teaching Assistant

Fall 2023

**ESE 272, Electronics**  
Teaching Assistant

Spring 2022

**ESE 356, Digital System Specification and Modeling**  
Teaching Assistant

Fall 2020, Fall 2019

**Internet Market Design, Shanghai Jiao Tong University**  
Teaching Assistant

Spring 2016

## **SERVICES**

### **Journal and Conference reviewer:**

- IEEE Conference on Computer Communications (INFOCOM)
- IEEE/ACM International Symposium on Quality of Service (IWQoS)
- IEEE Global Communications Conference (GLOBECOM)
- IEEE Transactions on Parallel and Distributed Systems (TPDS)
- IEEE/ACM Transactions on Networking (ToN)
- IEEE Transactions on Cloud Computing (TCC)

### **Oral presentations:**

“Secured Data Sharing and Storage System for Intelligent Transportation System via Lightweight Blockchain,” 2025 50th IEEE Conference on Local Computer Networks (LCN), Sydney, Australia, 2025.

“A Novel Reputation-based Sharding Blockchain System in Edge Sensor Networks,” 2025 IEEE 45th International Conference on Distributed Computing Systems (ICDCS), Glasgow, Scotland, UK, 2025.

“A Novel Blockchain-based System for Service Quality Improvement in Multi-Tenant O-RANs,” 2024 IEEE Global Communications Conference, Cape Town, South Africa, 2024.

“ITF: A Blockchain System with Incentivized Transaction Forwarding,” 2022 IEEE 42nd International Conference on Distributed Computing Systems (ICDCS), Bologna, Italy, 2022.

“A Novel Proof-of-Reputation Consensus for Storage Allocation in Edge Blockchain Systems,” 2021 IEEE/ACM 29th International Symposium on Quality of Service (IWQoS), Tokyo, Japan, 2021.

“Preventing Spread of Spam Transactions in Blockchain by Reputation,” 2020 IEEE/ACM 28th International Symposium on Quality of Service (IWQoS), Hang Zhou, China, 2020. (**Video Presentation Award**)