

# Si Yuan JIN

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Homepage: [siyuan-bruce.github.io](https://siyuan-bruce.github.io)

## EDUCATION

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### Hong Kong University of Science and Technology

MPhil-PhD of Information Systems, GPA: 3.787

Aug 2022 - Now

- Supervisor: Prof. Kar Yan Tam
- Topics: Blockchain, Digital Platform, Information Systems, FinTech, Quantum IT Management
- Methods: Econometrics, Field Experiment, Survey, Technical Algorithm Design

### South China University of Technology

Bachelor of Financial Technology, GPA: 3.83/4.00 (Rank: 1/33)

Sep 2017 - Jul 2021

- Award/Grant: 2019-2020 China National Scholarship (Top 0.1 - 0.2%), Outstanding Graduates

## JOURNAL PUBLICATIONS - Chronological Order

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- [1] M. Zhang, B. Zhu, Z. Li, **S. Jin**, and Y. Xia (2023). “Relationships among Return and Liquidity of Cryptocurrencies”. Forthcoming at *Financial Innovation*. (Accepted in July 2023)
- [2] **S. Jin**, Y. Xia, B Xu (2023). “Scalability meets Regulation: A UTXO-Based Sharding Approach with Zero-Knowledge Proof KYC for Regulated Digital Currencies”. Forthcoming at *Cluster Computing*.
- [3] **S. Jin**, and Y. Xia (2022). “CEV Framework: A Central Bank Digital Currency Evaluation and Verification Framework”. *IEEE Access*, 10, 63698-63714.

## POLICY PUBLICATIONS - Chronological Order

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- [1] Joint with HKUST SBM and HSBC Holdings plc (2023). “e-HKD Pilot Programme”. Link to the [summary](#) cited by the [Hong Kong Monetary Authority](#).
- [2] Y. Xia, **S. Jin**, B. Qu, Y. Liu, Y. Zhen. Joint with HSBC Bank (Singapore) Limited and HSBC Holdings plc (2021). “Global CBDC Challenge Report”. Link to the report of the [Monetary Authority of Singapore](#).

## WORKING PAPERS

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- [1] **S. Jin**, Z Li, A. Huang, and K. Tam. “Token-Based Platforms and Green Dilemma”. Available at [SSRN](#). In preparation for submission to *Information System Research*. [UTD 24]
- [2] **S. Jin**, Y. Cai, K. Tam. “Operational vs. Algorithmic Transparency: Misinterpretation in Stablecoin Crises”. Under review at *32nd European Conference on Information Systems (ECIS 2024)*.
- [3] **S. Jin**, K. Tam, B. Zeng, Q Shao, Y Huang, Y. Xia, B Zhu, and Z Li. “Classical Principles for Quantum Monte Carlo Analysis”. Reject & Resubmit at *INFORMS Journal on Data Science*.

- [4] M. Dordal i Carreras., K. Kawaguchi, **S. Jin**, H. Guo, W. Huang. "Consumer Adoption and Perceptions of rCBDC: Insights from the Hypothetical e-HKD Pilot". In preparation for submission to *Proceedings of the National Academy of Sciences (PNAS)*.
- [5] **S. Jin**, B Zhu, Z Li, and Y. Xia. "Decision Making in Cryptocurrency-backed Loans: A Volatility and Liquidity Integrated Approach". Under review at *Decision Support Systems*.
- [6] Y Huang, **S. Jin**, B. Zeng, and Q Shao. "Adaptive Diversity-based Quantum Circuit Architecture Search". Major revision at *Physical Review Research*.

## **CONFERENCE PUBLICATIONS** - Chronological Order

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- [1] **S. Jin**, Z. Li, B. Chen, B. Zhu, and Y. Xia. "Software Code Quality Measurement: Implications from Metric Distributions". IEEE International Conference on Software Quality, Reliability, and Security, Chiang Mai, Thailand, (**QRS 2023**).  
*Short Paper with Oral Presentation, Acceptance Rate: 23.47%*
- [2] Y. Liu, C. Xu, and **S. Jin**. "Reinforcement Learning for Continuous Control: A Quantum Normalized Advantage Function Approach". IEEE Congress on Services, Chicago, USA, (**SERVICES 2023**). *Short Paper with Oral Presentation, Average Acceptance Rate: 21.50%*
- [3] **S. Jin**, B. Xu, P. Intallura, and Y. Xia. "A UTXO-based Sharding Method for Stablecoin". IEEE International Conference on Blockchain Computing and Applications, San Antonio, USA, (**BCCA 2022**). *Short Paper with Oral Presentation, Acceptance Rate: <30%*.

## **INTERNATIONAL PATENT APPLICATIONS**

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- [1] B. Zhu, Z. Li, Y. Xia, Q. Shao, Y. Huang, **S. Jin**. "Adaptive Diversity-Based Quantum Circuit Architecture Search". Application No. 18/519,617. Filed at *U.S. Patent Office*.
- [2] **S. Jin**, Y. Huang, Z. Li, B. Zhu, Y. Xia. "Method for Integrating Moment of Squares Relaxations in Variational Quantum Algorithms For Enhanced Optimization". Submitted to *Chinese Patent Office*.
- [3] **S. Jin**, Y. Huang, Z. Li, B. Zhu, Y. Xia. "Hybrid computer system for asset selection optimization". Submitted to *Chinese Patent Office*.
- [4] B. Zhu, Y. Xia, Z. Li, **S. Jin**. "Network Analysis using optical quantum computing". Application No. PCT/CN2023/070773. Filed at the *Chinese Patent Office*.
- [5] **S. Jin**, Y. Xia. "Transaction Security for Multi-tier Transaction Networks". Application No. PCT/CN2022/137317. Filed at the *Chinese Patent Office*.
- [6] **S. Jin**, Y. Xia. "A Modular Analysis Method of Consensus Algorithm in Central Bank Digital Currency System". Application No. PCT/CN2022/126708. Filed at the *Chinese Patent Office*.
- [7] **S. Jin**, Y. Xia. "Blockchain transaction sharding for improved transaction throughput." Application No. PCT/CN2022/137317. Filed at the *Chinese Patent Office*.

## RESEARCH PROJECTS & FUNDING APPLICATIONS

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- Empowering Hong Kong Finance with A Quantum Algorithm Platform (**RIF, \$10m**) *Final Round*  
*Project Coordinator: Prof. Yingying Li, Prof. Qiming Shao.*
- RegTech - Design of CBDC and Digital Assets in Hong Kong (**RGC, \$8m**) *Jul 2023 - Now*  
*Project Coordinator: Prof. Kar Yan Tam.*

## AWARDS / HONORS

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- **HKUST** PhD Postgraduate Studentship *Nov 2022 - now*
- **HKUST** Fintechstic NFT & Metaverse Competition Mentor (Total 10 Mentors) *Nov 2022*
- **Monetary Authority of Singapore** [Global CBDC Challenge Finalist](#) (Top 5% in 50-country submissions) *Nov 2021*
- **SCUT** University-level excellent graduation thesis (Top 1%) *Jun 2021*
- **SCUT** China National Scholarship (Top 0.1%-0.2%) *Dec 2020*
- **SCUT** First-class Scholarship (Top 1%) **Twice** *2018 & 2019*

## TEACHING EXPERIENCE

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- **Lab Instructor** “Coding for Business”, ISOM 2020 Lab, HKUST *Sep - Oct 2023*
- **Teaching Assistant** “Coding for Business”, ISOM 2020, HKUST *Feb - Apr 2023*
- **Teaching Assistant** “Blockchain Introduction”, SCUT *Feb - May 2021*

## ACADEMIC SERVICE / OPEN SOURCE

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- **Ad Hoc Reviewer** International Conference on Information Systems (ICIS 2023), Pacific Asia Conference on Information Systems (PACIS 2023), Quantum Information Processing (QIP 2023)
- **Mentor** Data Driven Modeling MSc Program Research Yearly Project *Oct 2022 - now*
  - 7 M.Sc. students in total: 5 continue to conduct research work worldwide.
  - Y. Liu received the DDM Best Presentation Award in 2023.
- **Open-source Project Initiator** [Quantum Finance Literature](#), [CBDC Literature](#)

## INVITED TALKS - Chronological Order

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- [1] "Introduction to Financial Technology", *South China University of Technology*, Guangzhou, China. *2023*
- [2] "A Central Bank Digital Currency Evaluation and Verification Framework", *Europe Innovation Community of Practice*, HSBC, Europe. *2022*

## **INDUSTRIAL EXPERIENCE**

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- **HSBC Hong Kong** *Nov 2022 - Now*  
*Research Consultant* Hong Kong
- **HSBC Laboratory - Ventures, Innovation & Partnerships** *Jul 2021 - Aug 2022*  
*Full Stack Engineer: Quantum Computing & CBDC Research* Guangzhou  
– Award/Grant: 2021 HSBC Top Performer | 2021 HSBC Role Model (Top 5%)
- **HSBC IT Architecture** *Jul 2020 - Jul 2021*  
*Trainee: CBDC Research & Development* Guangzhou  
– Award/Grant: Global CBDC Challenge Finalist

## **LANGUAGE**

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- Mandarin (Native)
- English (Proficient, IELTS 7.5)
- Cantonese (Beginner)