# XUECHAO WANG

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## EDUCATION

**Ph.D. in Electrical and Computer Engineering** *December 2020 - May 2023*
Advisor: Pramod Viswanath
University of Illinois Urbana-Champaign, Illinois, GPA: 4.00/4.00
Dissertation: "Scalable and Fungible Blockchain Consensus via Proof of Resource"

**Master of Science in Electrical and Computer Engineering** *August 2018 - December 2020*
Advisor: Pramod Viswanath
University of Illinois Urbana-Champaign, Illinois, GPA: 4.00/4.00
Thesis: "Proof-of-Stake Longest Chain Protocols: Security vs Predicability"

**Bachelor of Science in Electronic Engineering** *August 2014 - July 2018*
Tsinghua University, Beijing, China, GPA: 92/100, Rank: 12/239

## RESEARCH INTEREST

My research interest is in blockchains, including blockchain infrastructure (layer-1, layer-2, cross-chain), Central Bank Digital Currency (CBDC), Decentralized Finance (DeFi), and the intersection of AI and blockchains.

## APPOINTMENTS

**Assistant Professor, Fintech Thrust, Society Hub** *July 2023 - Present*
HKUST(GZ), Guangzhou, Guangdong, China

**Assistant Professor, IoT Thrust, Information Hub** *July 2024 - Present*
HKUST(GZ), Guangzhou, Guangdong, China

**Visiting researcher at Princeton** *August 2022 - July 2023*
Advisor: Pramod Viswanath
Princeton University, New Jersey, USA

**Research assistant at Coordinated Science Lab** *August 2018 - May 2023*
Advisor: Pramod Viswanath
University of Illinois Urbana-Champaign, Illinois, USA

**Research fellow at ConsensusLab** *May 2022 - November 2022*
Mentor: Sarah Azouvi
Protocol Labs, remote

**Teaching assistant of ECE598PV Principles of Blockchains** *Spring 2021 & Spring 2022*
Instructor: Pramod Viswanath
University of Illinois Urbana-Champaign, Illinois, USA

## PUBLICATIONS

***** Google Scholar: https://scholar.google.com/citations?user=2NXOKQ8AAAAJ&hl=en

1. J. Lin, M. Liu, S. Li, **X. Wang**, "SecurePay: Enabling Secure and Fast Payment Processing for Platform Economy", *Under review.*

2. M. Bastankhah, V. Nadkarni, **X. Wang**, C. Jin, S. Kulkarni, P. Viswanath, "Thinking Fast and Slow: Data-Driven Adaptive DeFi Borrow-Lending Protocol", *arXiv preprint arXiv:2407.10890*.
3. Z. Zhao, Z. Fang, **X. Wang**, X. Chen, Y. Zhou, "Proof-of-Learning with Incentive Security", *arXiv preprint arXiv:2404.09005*.
4. S. Bhat, C. Chen, Z. Cheng, Z. Fang, A. Hebbar, S. Kannan, R. Rana, P.Sheng, H. Tyagi, P. Viswanath, **X. Wang**, "Sakshi: Decentralized AI Platforms", *arXiv preprint arXiv:2307.16562*.
5. L. Yang, **X. Wang**, V. Bagaria, G. Wang, M. Alizadeh, G. Fanti, D. Tse, and P. Viswanath, "Practical Low Latency Proof of Work Consensus", *arXiv preprint arXiv:1909.11261*.
6. C. Che, S. Li, **X. Wang**, "Manifoldchain: Maximizing Blockchain Throughput via Bandwidth-Clustered Sharding", *NDSS 2025*.
7. W. Tang, P. Sheng, R. Ni, P. Roy, **X. Wang**, G. Fanti, and P. Viswanath, "Raft-Forensics: High Performance CFT Consensus with Accountability for Byzantine Faults", *AFT 2024*.
8. Q. Yu, G. Losa, **X. Wang**, "TetraBFT: Reducing Latency of Unauthenticated, Responsive BFT Consensus", *ACM PODC 2024*.
9. **X. Wang**, P. Sheng, S. Kannan, K. Nayak, and P. Viswanath, "TrustBoost: Boosting Trust among Interoperable Blockchains", *ACM CCS 2023*.
10. **X. Wang**, S. Azouvi, and M. Vukolic, "Security Analysis of Filecoin's Expected Consensus in the Byzantine vs Honest Model", *AFT 2023*.
11. M. Fitzi*, **X. Wang***, S. Kannan, A. Kiayias, N. Leonardos, P. Viswanath, and G. Wang, "Minotaur: Multi-Resource Blockchain Consensus", *ACM CCS 2022*.
12. V. Bagaria, A. Dembo, S. Kannan, S. Oh, D. Tse, P. Viswanath, **X. Wang**, and O. Zeitouni, "Proof-of-Stake Longest Chain Protocols: Security vs Predictability", *ACM CCS 2022 Workshop on developments in consensus (ConsensusDay)*. (Authors listed alphabetically)
13. **X. Wang**, V. V. Muppirala, L. Yang, S. Kannan, and P. Viswanath, "Securing Parallel-Chain Protocols under Variable Mining Power", *ACM CCS 2021*.
14. S. Sankagiri*, **X. Wang***, S. Kannan, and P. Viswanath, "Blockchain CAP Theorem Allows User-Dependent Adaptivity and Finality", *Financial Cryptography 2021*.
15. **Illinois Information Theory Students**, S. Basu, and L. R. Varshney, "The Twelvefold Way of Non-Sequential Lossless Compression", *DCC 2021*.
16. A. Dembo, S. Kannan, E. N. Tas, D. Tse, P. Viswanath, **X. Wang**, and O. Zeitouni, "Everything is a Race and Nakamoto Always Wins", *ACM CCS 2020*. (Authors listed alphabetically)
17. **X. Wang**, G. Kamath, V. Bagaria, S. Kannan, S. Oh, D. Tse, and P. Viswanath, "Proof-of-Stake Longest Chain Protocols Revisited", *Stanford Blockchain Conference 2020*.
18. **X. Wang**, X. Zhu, and Z. Sha, "A Low-Complexity Iterative Transmit Precoding Algorithm for Spatial Modulation Systems", *2018 IEEE 87th Vehicular Technology Conference (VTC Spring)*, pp. 1-5. IEEE, 2018.

## AWARDS AND HONORS

| | |
|---|---|
| Academic Research Award (40,000 USD), Stellar Development Foundation | 11/2023 |
| Excellent Graduates, Tsinghua University | 07/2018 |
| Academic Excellence Scholarship, Tsinghua University (Continued 3 years) | 09/2015 - 09/2017 |
| Changhong Scholarship, Tsinghua University | 09/2015 |
| 2nd Prize in Chinese Mathematical Olympiad (CMO) | 12/2013 |

1st Prize in National High School Mathematical Competition 10/2013
1st Prize in American Invitational Mathematics Examination (AIME) (Top 1% in China) 03/2013

## TECHNICAL SKILLS

**Programming languages:** Python, Rust, C/C++, Java, Solidity, Verilog, Matlab, JavaScript, HTML, and LaTeX.

## PROFESSIONAL SERVICE

PC member of ACM CCS 2024, Blockchain and Distributed Systems Track
PC member of Financial Cryptography and Data Security 2024
TPC member of ACM CCS 2022 Workshop on developments in consensus (ConsensusDay)
Reviewer for IEEE ISIT 2021
Reviewer for IEEE ISIT 2020
Reviewer for ACM Transactions on Privacy and Security
Reviewer for IEEE Transactions on Wireless Communications
Reviewer for IEEE Transactions on Computers
Reviewer for Probability in the Engineering and Informational Sciences

## REFERENCES

**Dr. Pramod Viswanath** *pramodv@princeton.edu*
*Professor, Princeton University, USA*

**Dr. David Tse** *dntse@stanford.edu*
*Professor, Stanford University, USA*

**Dr. Aggelos Kiayias** *Aggelos.Kiayias@ed.ac.uk*
*Professor, University of Edinburgh, UK*

**Dr. Sreeram Kannan** *ksreeram@ece.uw.edu*
*Associate Professor, University of Washington Seattle, USA*