XUECHAO WANG

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EDUCATION

Ph.D. in Electrical and Computer Engineering *December 2020 - Present*
Advisor: Pramod Viswanath
University of Illinois Urbana-Champaign, Illinois, GPA: 4.00/4.00
Courses: CS 598 Cryptography (A+), MATH 562 Theory of Probability II (A+).

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
Courses: ECE 534 Random Process (A+), ECE 498 Applied Cryptography (A+), ECE 543 Statistical Learning Theory (A+), ECE 544 Pattern Recognition (A+), ECE 598 Principles of Blockchains (A+), ECE 563 Information Theory (A+), CS 598 Consensus Algorithm (A+), CS 425 Distributed Systems (A), MATH 561 Theory of Probability I (A+), MATH 580 Combinatorial Mathematics (A), MATH 540 Real Analysis (A), MATH 595 Markov Chains (A+).
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 decentralized consensus protocols (blockchains). I apply techniques from applied probability, combinatorics, and optimization to provide new algorithmic solutions and analyze the performance and security of new blockchain protocols.

WORK EXPERIENCE

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

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

Research intern at ConsensusLab *August 2022 - Present*
Mentor: Sarah Azouvi
Protocol Labs, remote

Summer fellow at ConsensusLab *May 2022 - August 2022*
Mentor: Sarah Azouvi
Protocol Labs, remote

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

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

PUBLICATIONS

1. **X. Wang**, P. Sheng, S. Kannan, K. Nayak, and P. Viswanath, "TrustBoost: Boosting Trust among Interoperable Blockchains" *under review.*
2. **X. Wang**, S. Azouvi, and M. Vukolic, "Security Analysis of Filecoin's Expected Consensus in the Byzantine vs Honest Model" *under review.*
3. L. Yang, **X. Wang**, V. Bagaria, G. Wang, M. Alizadeh, G. Fanti, D. Tse, and P. Viswanath, "Practical Low Latency Proof of Work Consensus" *under review.*
4. M. Fitzi*, **X. Wang***, S. Kannan, A. Kiayias, N. Leonardos, P. Viswanath, and G. Wang, "Minotaur: Multi-Resource Blockchain Consensus", *To appear in ACM CCS 2022.*
5. 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", *To appear in ACM CCS 2022 Workshop on developments in consensus (ConsensusDay).* (Authors listed alphabetically)
6. **X. Wang**, V. V. Muppirala, L. Yang, S. Kannan, and P. Viswanath, "Securing Parallel-Chain Protocols under Variable Mining Power", *ACM CCS 2021.*
7. S. Sankagiri*, **X. Wang***, S. Kannan, and P. Viswanath, "Blockchain CAP Theorem Allows User-Dependent Adaptivity and Finality", *Financial Cryptography 2021.*
8. **Illinois Information Theory Students**, S. Basu, and L. R. Varshney, "The Twelvefold Way of Non-Sequential Lossless Compression", *DCC 2021.*
9. 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)
10. **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.*
11. **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

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, Verilog, Matlab, HTML, and LaTeX.

PROFESSIONAL SERVICE

TPC member of ACM CCS 2022 Workshop on developments in consensus (ConsensusDay)
Reviewer for IEEE ISIT 2021
Reviewer for IEEE ISIT 2020
Reviewer for IEEE Transactions on Wireless Communications
Reviewer for IEEE Transactions on Computers