

# Yang Xiao

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PROFESSIONAL EXPERIENCE	<b>Assistant Professor</b> Department of Computer Science, University of Kentucky	08/2022 – Present
	<b>Graduate Research Assistant</b> Department of Electrical and Computer Engineering, Virginia Tech	09/2017 – 05/2022
	<b>Research Intern</b> Mathematics and Modeling Department, Schlumberger-Doll Research	05/2016 – 08/2016
RESEARCH INTERESTS	Distributed System Security Blockchain and Decentralized Systems Trusted and Privacy-preserving Computing Mobile Communications and Network Security Cyber-Physical Security	
EDUCATION	<b>Virginia Polytechnic Institute and State University</b> – Ph.D. in Computer Engineering Dissertation: <i>Blockchain and Distributed Consensus: From Security Analysis to Novel Applications</i> Advisor: Dr. Wenjing Lou	09/2017 – 05/2022
	<b>University of Michigan</b> – M.S. in Electrical Engineering-Systems	09/2015 – 04/2017
	<b>Shanghai Jiao Tong University</b> – B.S.E. in Information Engineering – (Secondary) B.Econ. in Finance	09/2010 – 06/2014
BOOK CHAPTERS	1. Distributed Consensus Protocols and Algorithms <b>Y. Xiao</b> , N. Zhang, J. Li, W. Lou, Y. T. Hou <i>Blockchain for Distributed Systems Security</i> , Wiley & Sons, 2019	
JOURNAL PUBLICATIONS	1. MANDA: On Adversarial Example Detection for Network Intrusion Detection System N. Wang, Y. Chen, <b>Y. Xiao</b> , Y. Hu, W. Lou, Y. T. Hou <i>Accepted by IEEE Transactions on Dependable and Secure Computing (TDSC)</i> . 2. Decentralized Spectrum Access System: Vision, Challenges, and a Blockchain Solution <b>Y. Xiao</b> , S. Shi, W. Lou, C. Wang, X. Li, N. Zhang, Y. T. Hou, J. H. Reed <i>In IEEE Wireless Communications</i> , 2022. 3. Challenges and New Directions in Securing Spectrum Access Systems S. Shi, <b>Y. Xiao</b> , W. Lou, C. Wang, X. Li, Y. T. Hou, J. H. Reed <i>In IEEE Internet of Things Journal (IOT-J)</i> , 2021. 4. A Survey of Distributed Consensus Protocols for Blockchain Networks <b>Y. Xiao</b> , N. Zhang, W. Lou, Y. T. Hou <i>In IEEE Communications Surveys &amp; Tutorials (COMST)</i> , 2020. 5. Offloading Decision in Edge Computing for Continuous Applications Under Uncertainty	

W. Chang, **Y. Xiao**, W. Lou, G. Shou  
*In IEEE Transactions on Wireless Communications (TWC), 2020.*

6. Performance Analysis of Random Access Network with Post-backoff  
C. Bu, **Y. Xiao**, T. Ye, P. Wu, X. Zhang, J. Wu  
*In Telecommunications Science, 2016.*

CONFERENCE  
PUBLICATIONS

1. CANShield: Signal-based Intrusion Detection for Controller Area Networks  
M. H. Shahriar, **Y. Xiao**, P. Moriano, W. Lou, Y. T. Hou  
*Accepted by the 9th Embedded Security in Cars (escar) USA conference, 2022.*
2. FLARE: Defending Federated Learning against Model Poisoning Attacks via Latent Space Representations  
N. Wang, **Y. Xiao**, Y. Chen, Y. Hu, W. Lou, Y. T. Hou  
*Accepted by the 17th ACM ASIA Conference on Computer and Communications Security (AsiaCCS), 2022.  
(AR=18.4%)*
3. Session Key Distribution Made Practical for CAN and CAN-FD Message Authentication  
**Y. Xiao**, S. Shi, N. Zhang, W. Lou, Y. T. Hou  
*In the Annual Computer Security Applications Conference (ACSAC), 2020. (AR=23.2%)*
4. PrivacyGuard: Enforcing Private Data Usage Control with Blockchain and Off-chain Contract Execution  
**Y. Xiao**, N. Zhang, J. Li, W. Lou, Y. T. Hou  
*In the 25th European Symposium on Research in Computer Security (ESORICS), 2020. (AR=19.7%)*
5. Modeling the Impact of Network Connectivity on Consensus Security of Proof-of-Work Blockchain  
**Y. Xiao**, N. Zhang, W. Lou, Y. T. Hou  
*In the 2020 IEEE International Conference on Computer Communications (INFOCOM), 2020. (AR=19.8%)*

TEACHING  
EXPERIENCE

- Instructor**, University of Kentucky  
– CS585/685: Intermediate/Special Topics in Computer Science: Blockchain Technologies      Fall 2022
- Guest Lecturer**, Virginia Tech  
– CS5560: Fundamentals of Information Security - Cryptocurrency & Blockchain      Spring 2019
- Graduate Teaching Assistant**, Virginia Tech  
– ECE2534: Microcontroller Programming and Interfacing      Fall 2017
- Undergraduate Tutor**, SJTU  
– CS358: Data Structure      Fall 2014

ACADEMIC  
SERVICES

- Journal and Conference Reviewer**
- IEEE International Conference on Computer Communications (INFOCOM)      2021
  - IEEE International Conference on Sensing, Communication, and Networking (SECON)      2022
  - IEEE/ACM Transactions on Networking (TON)      2020, 2021, 2022
  - IEEE Internet of Things Journal (IOT-J)      2020, 2021, 2022
  - International Journal of Intelligent Systems (INT2)      2021
  - IEEE Transactions on Dependable and Secure Computing (TDSC)      2019, 2020, 2022
  - Digital Communications and Networks (DCAN)      2019, 2020
  - EAI International Conference on Security and Privacy in Comm. Netw. (SecureComm)      2019
  - Future Generation Computer Systems (FGCS)      2018, 2019
- Panelist**
- 2019 Secure and Trustworthy CyberSpace (SaTC) PI Meeting Undergraduate Track, NSF      10/2019
- Panel: What to Expect from Grad School

### Conference Organization

	IEEE International Conference on Computer Communications (INFOCOM)	
	– Web Co-chair, INFOCOM 2023, New York area	06/2022 – 05/2023
	IEEE Conference on Communications and Network Security (CNS)	
	– Web Chair, CNS 2020, virtual	09/2019 – 07/2020
	– Student Volunteer, CNS 2019, Washington DC	06/2019
TALKS, POSTERS	Session Key Distribution Made Practical for CAN and CAN-FD Message Authentication	
	– Invited talk, <i>Learning from Authoritative Security Experiment Results (LASER) Workshop</i>	12/2020
	A Layered View towards Blockchain: From Consensus Security to Smart Contract Application	
	– Invited talk, <i>CS Graduate Seminars</i> , Virginia Tech	11/2020
	Enforcing Private Data Usage Control with Blockchain and Attested Off-chain Contract Execution	
	– Poster, 2019 SaTC PI Meeting, NSF, Alexandria, VA	04/2019
	A Graph Random-Walk Based Sampling Algorithm for Load Balancing in Cloud Systems	
	– Poster, <i>6th Midwest Workshop on Control and Game Theory</i> , Ann Arbor, MI	04/2017
AWARDS	<b>INFOCOM 2020 Student Travel Grant</b>	2020
	– Awarded by the INFOCOM 2020 organizing committee	
	<b>BitShares Graduate Fellowship</b>	2019
	– Awarded by Virginia Tech CS Department, funded by BitShares Inc.	
	<b>Completion of the Elite Engineer Cultivation Program in Information Engineering</b>	2014
	– Certified by Shanghai Jiao Tong University	
	<b>First Prize in the 28th National Physics Contest of College Students (Shanghai Division)</b>	2011
	– Awarded by Shanghai Physics Society	
PROFESSIONAL MEMBERSHIPS	– IEEE Graduate Student Member, Communications Society, Computer Society	11/2017 – Present
	– ACM Professional Member	10/2020 – Present
CODING SKILLS	C/C++, Python, MATLAB, HTML, C#	