

Yang Xiao

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PROFESSIONAL EXPERIENCE	Assistant Professor Department of Computer Science, University of Kentucky Graduate Research Assistant Department of Electrical and Computer Engineering, Virginia Tech Research Intern Mathematics and Modeling Department, Schlumberger-Doll Research	08/2022 – Present 09/2017 – 05/2022 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	Virginia Polytechnic Institute and State University – Ph.D. in Computer Engineering Dissertation: <i>Blockchain and Distributed Consensus: From Security Analysis to Novel Applications</i> Advisor: Dr. Wenjing Lou University of Michigan – M.S. in Electrical Engineering-Systems Shanghai Jiao Tong University – B.S.E. in Information Engineering – (Secondary) B.Econ. in Finance	09/2017 – 05/2022 09/2015 – 04/2017 09/2010 – 06/2014
BOOK CHAPTERS	1. Distributed Consensus Protocols and Algorithms Y. Xiao , 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, Y. Xiao , 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 Y. Xiao , 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, Y. Xiao , 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 Y. Xiao , N. Zhang, W. Lou, Y. T. Hou <i>In IEEE Communications Surveys & Tutorials (COMST)</i> , 2020. 5. Offloading Decision in Edge Computing for Continuous Applications Under Uncertainty	

	W. Chang, Y. Xiao , W. Lou, G. Shou <i>In IEEE Transactions on Wireless Communications (TWC)</i> , 2020.	
	6. Performance Analysis of Random Access Network with Post-backoff C. Bu, Y. Xiao , T. Ye, P. Wu, X. Zhang, J. Wu <i>In Telecommunications Science</i> , 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 <i>Accepted by the 9th Embedded Security in Cars (escar) USA conference</i> , 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 <i>Accepted by the 17th ACM ASIA Conference on Computer and Communications Security (AsiaCCS)</i> , 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 <i>In the Annual Computer Security Applications Conference (ACSAC)</i> , 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 <i>In the 25th European Symposium on Research in Computer Security (ESORICS)</i> , 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 <i>In the 2020 IEEE International Conference on Computer Communications (INFOCOM)</i> , 2020. (AR=19.8%)	
SUBMITTED PAPERS	1. A Decentralized and Truth Discovering Data Feed for Blockchain DApps Y. Xiao , N. Zhang, W. Lou, Y. T. Hou	
	2. BD-SAS: Enabling Dynamic Spectrum Sharing in Low-trust Environment Y. Xiao , S. Shi, W. Lou, C. Wang, X. Li, Y. T. Hou, J. H. Reed	
	3. Differentially Private Federated Meta-Learning N. Wang, Y. Xiao , Y. Chen, N. Zhang, W. Lou, Y. T. Hou	
	4. BRENTS: Byzantine Resilient Network Time Synchronization S. Shi, Y. Xiao , C. Du, W. Lou, Y. T. Hou	
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) – IEEE International Conference on Sensing, Communication, and Networking (SECON) – IEEE/ACM Transactions on Networking (TON)	2021 2022 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	INFOCOM 2020 Student Travel Grant	2020
	– Awarded by the INFOCOM 2020 organizing committee	
	BitShares Graduate Fellowship	2019
	– Awarded by Virginia Tech CS Department, funded by BitShares Inc.	
	Completion of the Elite Engineer Cultivation Program in Information Engineering	2014
	– Certified by Shanghai Jiao Tong University	
	First Prize in the 28th National Physics Contest of College Students (Shanghai Division)	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#	