

THE CENTER FOR ADVANCED COMPUTER STUDIES

at

the University of Louisiana at Lafayette

Lafayette, Louisiana

Proudly announces a presentation

Dr. Yuzhe Tang

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EECS Department
Syracuse University*

will give a presentation entitled

Blockchain DoS Security and Communication Efficiency

Abstract: Ethereum is the largest smart-contract platform and second-largest cryptocurrency only after Bitcoin. Under the hood, Ethereum is a peer-to-peer network where miner nodes jointly decide what transactions to append to its blockchain. In practice, Ethereum's P2P network relies on an infrastructure to communicate with the large base of web clients to support emerging decentralized applications (DApps). Although blockchain-and-client communication is part of the critical path in the overall system, its security is understudied in the existing literature.

In this talk, I will introduce our recent works that systematically examine Ethereum communication security under the denial of service attacks (CCS'21, NDSS'21, IMC'21) and improve communication efficiency to save Gas/Ether costs for DApps (FSE'21, ACM Middleware'20). The security vulnerabilities discovered in these works have been confirmed by Ethereum developer community through bug bounty programs. The mitigation schemes presented in our research have influenced the patches in recent Ethereum releases.

DATE: FRIDAY, OCTOBER 29, 2021

TIME: 11:00 A.M – 12:00 NOON

LOCATION: Via Zoom

Biography: Dr. Yuzhe Tang is an assistant professor in the EECS department at Syracuse University. He is broadly interested in cybersecurity and distributed systems. His current research focuses on protocol analysis and design to understand and tackle the security-performance tradeoff in emerging security-centric systems and applications, such as blockchains, web infrastructures, and cloud computing. On the one hand, he uses security analysis/measurement methods to study large-scale distributed systems in the wild. On the other hand, he applies the systems approaches to design middleware to optimize the cost/performance in security-centric distributed systems. As a result, his research products are published in top cyber-security and systems conferences, including ACM CCS, NDSS, IMC, FSE, ICDE, ACM Middleware, ACSAC, etc. In addition, his research results have been reorganized through various bug bounty programs and influenced code patches in the Ethereum developer community.

Dr. Tang earns his Ph.D. degree in Computer Science from Georgia Institute of Technology and B.Sc. in Computer Science and Technology from Fudan University, China. He serves in technical program committees in venues including WWW, IEEE ICDCS, IEEE TKDE, ACM ToCS, etc. He is the recipient of the Best Paper award in IEEE Cloud 2012, the Best Paper award in ACM/IEEE CCGrid 2015, and AFRL visiting faculty research award 2017.

Zoom Meeting: <https://ullafayette.zoom.us/j/92747376335>