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present

Privacy- and Data-Aware Smart Grid Communication

by

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Time: 5:00 p.m. to 6:30 p.m. -- 5:00 p.m. Pizza/Networking, 5:30 p.m. Presentation
Location: RIT Campus, Golisano Hall - Bldg 70, Room 2500
Computer Society announcements and venue information: <u>http://ewh.ieee.org/r1/rochester/computer</u>
Cost: Free. Open to IEEE members and non-members.
Registration requested for food/pizza count: <u>https://events.vtools.ieee.org/m/41304</u>



Smart Grid technologies have been revolutionizing the legacy power grid through advanced sensor networks, two-way communication capabilities, and immediate detection of outages. As a critical part of the Smart Grid, the Advanced Metering Infrastructure (AMI) can provide fine-grained energy consumption data and report them to a utility company, utilizing electrical smart meters. In regarding the usage of smart meters in AMI, there is a primary concern about how utility companies manage energy consumption data, particularly with respect to consumer privacy. The fine-grained energy consumption measurements can potentially reveal consumer sensitive information due to opportunities of building a detailed energy profile. For instance, the data can indicate consumer's working hours, which in fact can be advantageous for burglars. At the same time, fine-grained energy data can provide insight into energy efficiency and fraud detection as well as contribute to discovering defective equipment. This talk presents various challenges and solutions for secure and efficient Smart Grid communication, protecting data confidentiality, integrity, and consumer privacy.

Speaker's Biography

Vitaly Ford is a PhD. candidate in Computer Science at Tennessee Tech University. His research interests include smart grid security and privacy, machine learning, data mining, fraud detection, artificial intelligence applications in security, and cybersecurity education. Currently he is serving as an Instructor of Record for Computer Science Department at Tennessee Tech. He is one of the founders and a current advisor for the CyberEagles cybersecurity club at Tennessee Tech. Vitaly serves as an Advisory Board member for the National Cybersecurity Student Association that promotes cybersecurity education and training. His dissertation topic is about developing an efficient privacy-preserving advanced metering infrastructure supporting fine-grained data analysis. He has participated in numerous defensive/offensive cybersecurity competitions. In his free time, he enjoys playing table tennis and chess.





