Cyber Security and Privacy in Smart Grids

Depeng Li

Post-Doctoral Researcher at Massachusetts Institute of Technology and Masdar Institute

TIME & LOCATION:

Illinois:
Thursday, January 19 at 7:30 p.m.
Coordinated Science Lab - Room 238
ADSC Videoconference Room

Singapore:
Friday, January 20 at 9:30 a.m.
@ ADSC - Level 8, Fusionopolis,
Connexis North

Abstract:

The digitization of smart grids provides significant benefits, e.g. improved energy efficiency, promoted power reliability, and decreased carbon emission and so on, to power companies, customers and the societies as well. Although deploying the smart grid enjoys enormous social, environmental and technical advantages, this evolution also introduces security and privacy concerns since new integrated technologies or components can easily be attacked by adversaries ranging from frauders, to privacy peepers. New security mechanisms are highly demanded to protect the infrastructure, data communication, components and system and mitigate the security and privacy concerns as well. This research strives to bring us closer to the goal to measure coherent smart metering data, monitor local states, assess involved components, design efficient protocols, etc. in a comprehensive way with adopted security mechanisms. Our study aims not only to analyze and identify security vulnerabilities in the commercial smart grid system, but to design and develop a platform with a set of efficient, safety and reliable means, for example, authentication schemes, for the systematic security evaluation and protection. This presentation will further discuss the security challenges and pay close attentions to the possible security solutions and future research areas.

Biosketch:

Dr. Depeng Li is currently working as a Post-Doctoral Researcher participating in a joint research project "Cyber Security for Smart Power Grids" sponsored by Massachusetts Institute of Technology (M.I.T.) and Masdar Institute. In 2010, he received his Ph.D. degree in Computer Science at Dalhousie University, Halifax, Canada. In 2010 and 2011, he had been worked as a Post-Doctoral Research Associate at Dalhousie University exploring the smartphone security. He has been actively researching in the area of security and performance evaluation in wireless and wireline communication networks. Specifically, he has been involved in research projects on protocol vulnerabilities, security best practices, risk mitigation and analysis, and the design of secure networks. From 2008 to 2010, he had been full-timely worked with Microsoft Corp. Redmond, WA, USA focusing on security analyses and development for network security protocols including IPsec, Firewall and IPv6 tunneling technology for Windows 7 and 8. From 2007 to 2008, he had been worked with Research In Motion (RIM) and participated in the development of Blackberry smartphones.