Research Statement

YAN Qiang
School of Information Systems, Singapore Management University
Email: qiang.yan.2008@smu.edu.sg
Updated on 3 January 2013

Background

The wide adoption of computing systems not only transforms many physical assets into virtual assets but also creates new assets that only exist in the virtual world. All these assets need to be protected, which forms the major theme of information security and privacy. The area of information security and privacy has been significantly expanded in the past decade. The use of security and privacy systems is under the concern of not only organizations such as governments and companies, but also every individual who uses a computing system. The public awareness of the potential threats associated with using computing systems raised the demand of usable security and privacy, which aims to construct the security and privacy systems accessible to most human beings.

Compared to early security and privacy systems that are mainly designed to be operated by well-trained users with dedicated devices, usable security and privacy systems bring following challenges: 1) The users may not have sufficient knowledge and skills due to cognitive limitations or other conditions; 2) The devices for system deployment may not implement all the required features due to manufacturing, management, or other costs. So a designer must be aware of these restrictions caused by the capability variety from both users and devices, if he intends to build a system for practical use.

Current Research

Designing and Analyzing Usable Security/Privacy Systems: The practicability of a security or privacy system designed for public users depends not only on technical factors, but also on human factors. This explained that most of research proposals are difficult to be deployed in practice, as human factors are usually underestimated or overlooked in prior literature. My interest is to discover new methodologies to improve the understanding and solutions of major security and privacy problems involving human beings. My research particularly focuses on user authentication and privacy protection by considering new features and new challenges related to mobile platforms, social networks, and RFID technology.

Selected Publications

- Jin Han, **Qiang Yan**, Debin Gao, Jianying Zhou, and Robert H. Deng, **Comparing Mobile Privacy Protection through Cross-Platform Applications**, In Proceedings of the 20th Annual Network & Distributed System Security Symposium (NDSS 2013), USA, February 2013, to appear.
- **Qiang Yan**, Jin Han, Yingjiu Li, and Robert H. Deng, **On Limitations of Designing Leakage-Resilient Password Systems: Attacks, Principles and Usability**, In Proceedings of the 19th Annual Network & Distributed System Security Symposium (NDSS 2012), USA, 2012.