Security and Trust in Online Social Networks

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ABSTRACT

The enormous success and diffusion that online social networks (OSNs) are encountering nowadays is vastly apparent. Users' social interactions now occur using online social media as communication channels; personal information and activities are easily exchanged both for recreational and business purposes in order to obtain social or economic advantages.

In this scenario, OSNs are considered critical applications with respect to the security of users and their resources, for their characteristics alone: the large amount of personal information they manage, big economic upturn connected to their commercial use, strict interconnection among users and resources characterizing them, as well as user attitude to easily share private data and activities with strangers.

In this book, we discuss three main research topics connected to security in online social networks: (i) trust management, because trust can be intended as a measure of the perception of security (in terms of risks/benefits) that users in an OSN have with respect to other (unknown/little-known) parties; (ii) controlled information sharing, because in OSNs, where personal information is not only connected to user profiles, but spans across users' social activities and interactions, users must be provided with the possibility to directly control information flows; and (iii) identity management, because OSNs are subjected more and more to malicious attacks that, with respect to traditional ones, have the advantage of being more effective by leveraging the social network as a new medium for reaching victims.

For each of these research topics, in this book we provide both theoretical concepts as well as an overview of the main solutions that commercial/non-commercial actors have proposed over the years. We also discuss some of the most promising research directions in these fields.

KEYWORDS

online social networks, security, trust, controlled information sharing, online identity management

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Barbara Carminati, Elena Ferrari, and Marco Viviani
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