

PRISM: PRivacy-Aware Interest Sharing and Matching in Mobile Social Networks

Abstract:

In a profile matchmaking application of mobile social networks, users need to reveal their interests to each other in order to find the common interests. A malicious user may harm a user by knowing his personal information. Therefore, mutual interests need to be found in a privacy preserving manner. In this paper, we propose an efficient privacy protection and interests sharing protocol referred to as PRivacy-aware Interest Sharing and Matching (PRISM). PRISM enables users to discover mutual interests without revealing their interests. Unlike existing approaches, PRISM does not require revealing the interests to a trusted server. Moreover, the protocol considers attacking scenarios that have not been addressed previously and provides an efficient solution. The inherent mechanism reveals any cheating attempt by a malicious user. PRISM also proposes the procedure to eliminate Sybil attacks. We analyze the security of PRISM against both passive and active attacks. Through implementation, we also present a detailed analysis of the performance of PRISM and compare it with existing approaches. The results show the effectiveness of PRISM without any significant Performance degradation.