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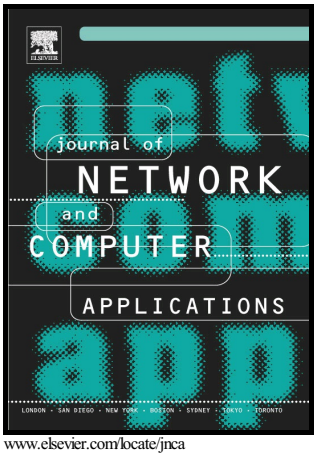

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A privacy-preserving reputation system with user rewards

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Abstract

Reputation systems are useful to assess the trustworthiness of potential transaction partners, but also a potential threat to privacy since rating profiles reveal users' preferences. Anonymous reputation systems resolve this issue, but make it difficult to assess the trustworthiness of a rating. We introduce a privacy-preserving reputation system that enables anonymous ratings while making sure that only authorized users can issue ratings. In addition, ratings can be endorsed by other users. A user who has received a pre-defined number of endorsements can prove this fact, and be rewarded e.g. by receiving a "Premium member" status. The system is based on advanced cryptographic primitives such as Chaum-Pedersen blind signatures, verifiable secret sharing and oblivious transfer.

Keywords: Reputation system, Reputation management, Anonymity, Privacy

1. Introduction

A major difficulty for Internet business in comparison to the traditional economy is the establishment of trust in potential transaction partners. Traditionally, trust has been established by word of mouth, or by surrogates such as

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