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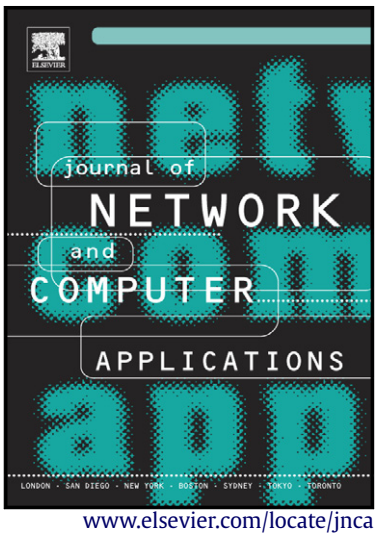

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A Trust-based Probabilistic Recommendation Model for Social Networks

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Abstract

In social networks, how to establish an effective recommendation model is an important research topic. This paper proposes a trust-based probabilistic recommendation model for social networks. We consider the recommendation attributes of products to determine similarity among users. Then inherent similarity among products is taken into account to derive the transition probability of a target node. In addition, trust of products is obtained based on their reputations and purchase frequencies. In order to solve the problem of users' cold start, we consider users' latent factor to find their latent similar users. Finally, we adopt the Amazon product co-purchasing network metadata to verify the effectiveness of the proposed recommendation model through comprehensive experiments. Furthermore, we analyze the impact of the transition probability influence factor through experiments. The experimental results show that the proposed recommendation model is effective and has a higher accuracy.

Keywords: social networks, recommendation, transition probability, trust, latent factor

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