Trust-Based Social Recommender Networks

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Traditional recommender systems assume that all users are independent and identically distributed, and ignores the social interactions and connections between users. We propose a social trust model and use the probabilistic matrix factorization method to estimate users taste by incorporating user-item rating matrix. The effect of users friends tastes is modeled using a trust model which is defined based on importance (i.e., centrality) and similarity between users. To validate the proposed method, rating estimation is performed on the Epinions dataset. Experiments show that our method provides better prediction when using trust relationship based on centrality and similarity values rather than using the binary values. The contributions of centrality and similarity in the trust values vary with different measures of centrality.

Keywords: Social Networks, Recommender Systems, Trust, Similarity