Data Mining for Social Network Data
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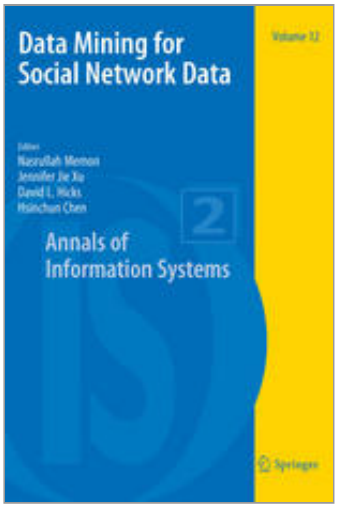
A Social Network-Based Recommender System (SNRS)

Abstract

Social influence plays an important role in product marketing. However, it has rarely been considered in traditional recommender systems. In this chapter, we present a new paradigm of recommender systems which can utilize information in social networks, including user preferences, item's general acceptance, and influence from social friends. A probabilistic model is developed to make personalized recommendations from such information. We extract data from a real online social network, and our analysis of this large data set reveals that friends have a tendency to select the same items and give similar ratings. Experimental results on this data set show that our proposed system not only improves the prediction accuracy of recommender systems but also remedies the data sparsity and cold-start issues inherent in collaborative filtering. Furthermore, we propose to improve the performance of our system by applying semantic filtering of social networks and validate its improvement via a class project experiment. In this experiment we demonstrate how relevant friends can be selected for inference based on the semantics of friend relationships and finer-grained user ratings. Such technologies can be deployed by most content providers.



Chapter Metrics

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