

# Preface

Recommender systems are one of the recent inventions to deal with ever growing information overload in relation to the selection of goods and services in a global economy. Collaborative Filtering (CF), is one of the most popular techniques in recommender systems. The CF recommends items to a target user based on the preferences of a set of similar users known as the neighbors, generated from a database made up of the preferences of past users. With sufficient background information of item ratings, its performance is promising enough but research shows that it performs very poorly in a cold start situation where there is not enough previous rating data. As an alternative to ratings, *trust* between the users could be used to choose the neighbor for recommendation making. Better recommendations can be achieved using an inferred trust network which mimics the real world “friend of a friend” recommendations. To extend the boundaries of the neighbor, an effective trust inference technique is required. The research work presented in this book proposes a new trust interference technique called Directed Series Parallel Graph (*DSPG*), which performs better than other popular trust inference algorithms such as *TidalTrust* and *MoleTrust*.

Another problem is that reliable explicit trust data are not always available. In real life, people trust “word of mouth” recommendations made by people with similar interests. This is often assumed in the recommender system. By conducting a survey, it has been shown that interest similarity has a positive relationship with trust and this can be used to generate a trust network for recommendation. In this book, the author also proposed a new method called *SimTrust* for developing trust networks based on user’s interest similarity in the absence of explicit trust data. To identify the interest similarity, user’s personalized tagging information has used. However, the research focused on what resources the user chooses to tag, rather than the text of the tag applied. The commonalities of the resources being tagged by the users can be used to form the neighbors used in the automated recommender system. The experimental results show that the proposed tag-similarity based method outperforms the traditional collaborative filtering approach which usually uses rating data.



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