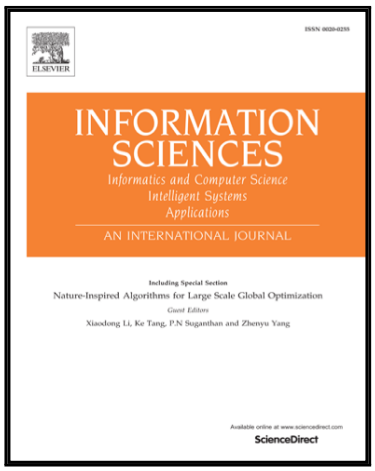

A probabilistic model for recommending to new cold-start non-registered users

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A probabilistic model for recommending to new cold-start non-registered users

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Abstract

Recommender Systems are designed to provide recommendations to registered users. Non-registered users can be regarded as a particular case of the pure new user cold-start problem. Since non-registered users have neither created a profile account nor rated any item, recommender systems cannot know the tastes of non-registered users, and they typically provide these non-registered users with the average rating of each item. Nevertheless, non-registered users are an important proportion of users of many recommender systems. Therefore, more sophisticated ways of recommending to these non-registered users are wished. Here, we will propose to offer these non-registered users a natural inference model based on uncertainty rules that allows them to infer themselves their own recommendations. This is mathematically formalized by means of a probabilistic model that simulates the forward reasoning based on rules.

Keywords: Recommender Systems, Collaborative Filtering, Graphical probabilistic Models

1. Introduction

Recommender Systems are intelligent systems designed to provide personal recommendations to registered users [8]. Recommender Systems have been used in different domains, such as music [29], television [3], books [33], e-learning [4] or e-commerce [16]. However, most research papers have focused on movie recommendations.

These systems recommend the items that are likely to appeal to each user. Therefore, the systems need to know the users' tastes in order to provide them with personal recommendations. In this paper, we will focus on