Happy Movie: A Group Recommender Application in Facebook

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Abstract

In this paper we introduce our recommender *Happy Movie*, a Facebook application for movie recommendation to groups. This system exploits information about the social relationships and behaviour of the users to provide better recommendations. Our previous works have shown that social factors improve the recommendation results. However it required many questionnaires to be filled for obtaining the social information, so we have moved to a social network environment where this information is easily available.

1 Introduction

Recommender systems were born from the necessity of having some kind of guidance when searching through complex product spaces. These systems share many features and methods with Case-Based Reasoning (CBR), as product recommendations can be seen as a kind of experience. More precisely, group recommenders are built to help groups of people who share a common activity decide in conflict situations.

Our previous works (Recio-García et al. 2009; Quijano-Sánchez, Recio-García, and Díaz-Agudo 2009; 2010) presented our approach, named GRUPITO, of making recommendations for groups of people based on three important features: personality, social trust and memory of past recommendations. This way we simulate in a more realistic way the argumentation process followed by groups of people when deciding a joint activity. Although our theories for making recommendations to groups have been proven in simulated environments, this paper presents the instantiation of our model in a real-life scenario: the social network Facebook.

2 Facebook application: Happy Movie

Happy Movie is a Facebook application for recommending movies to a group of users. Although this application has been initially designed for the recommendation of movies, it is important to note that our proposal can be easily adapted for other domains. In order to use our application, users only have to start their Facebook account and look for *Happy Movie* in the applications section. The required steps to

obtain a movie recommendation for the group with Happy movie are explained below:

- Creating the user profile in the application: This profile is based on three different aspects: personality, individual preferences and trust to other users. To obtain the personality users must complete a personality test. Later they have to rate a set of movies, where we obtain their personal preferences. Finally, to obtain the last factor – trust– the application explores the information stored in the Facebook personal profile. It calculates the trust that the user has with all the other users that have joined the event up to now.

- Creating the activity: The organizer decides to create an activity and she starts the application to create a new event. Organizers must establish some data like place, date or invited users. Any user attending the event can see the date and place of the event and a proposal of three movies, which are the best ones that our group recommender has found for the current group of users attending the event. When users participate in the event they are also able to invite any Facebook friends they wish and they can retire from the event at any time.

- Recommendation: When the application has obtained the three factors that identify each user that joins the event (personality, individual preferences and trust between other users) it provides a group recommendation using the method explained in (Quijano-Sánchez, Recio-García, and Díaz-Agudo 2010).

- Having the recommendation made: When the event is created it looks up for the current movie listing from the selected place and provides a list of 3 recommended movies. This list is automatically updated every time a user joins the event or retires from it. When the expiration date is reached users can see the final movie list. In that moment they are allowed to vote each movie individually. This process lets us decide which movie they are finally watching and, more important, it provides the required feedback to evaluate the quality of our recommendation.
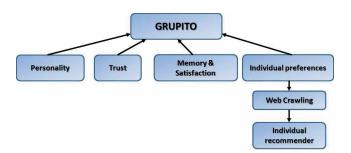
Figure 1: Facebook application architecture

3 A modular architecture for group recommendations

The architecture of *Happy Movie* is represented in Figure 1. We can see that the application is divided into seven different modules: *Personality, Trust, Memory & Satisfaction, Individual preferences, Web Crawling, Individual recommender* and *GRUPITO*. This section details these modules.

- Personality Module: This module fulfils the task of obtaining a value that represents the personality of each user. To do so, each user must answer to a personality test that measures people's behaviour in conflict situations. Users will only have to do this test the first time that use *Happy Movie*.

- Trust Module: Once *Happy Movie* is running, the trust module must perform its estimation every time a user joins the event. When this happens the trust module explores the users who are currently in the list of attending users and calculates the trust of each of them with the user who has recently joined the event.To do so, the profiles of the two users will be analysed, comparing different social factors. A detailed explanation of the trust factors obtained from Facebook and the combination process is provided in (Quijano-Sánchez, Recio-García, and Díaz-Agudo 2010).

- Memory & Satisfaction Module: In this module we store all the recommendations made for every user and every group. Having recommendations with memory allows our system to avoid repeating previous recommendations, and it ensures a certain degree of fairness. If one member accepts a proposal that she is not interested in, next time she will have some kind of preference, so that in the long run all the members of the group are equally satisfied.

- Individual preferences Module: It consists on a test of the individual preferences of each user in the application's domain. These preferences are stored as the individual case base of each user.

- Web Crawling Module: This module searches the web and finds the current movie listing, then it searches the complete file of every movie in it. The retrieved movies, with all their specific information, are sent to the individual recommender module and to the GRUPITO module as they are the products to be recommended.

- Individual Recommender Module: Our group recommendation strategies combine individual recommendations to find an item (movie) suitable for any user in the group.

- GRUPITO, Group Recommendations Using Personality, Interests and Trust Organizations: We include the personality and trust factors in the group recommendation method. The main ideas of these approach is detailed in (Quijano-Sánchez, Recio-García, and Díaz-Agudo 2010).

4 Conclusions

In this paper we have introduced our Facebook application Happy Movie. In our previous works (Recio-García et al. 2009; Quijano-Sánchez, Recio-García, and Díaz-Agudo 2009; 2010) we presented a standalone group recommender that uses a method based on the personality of every user and the trust between users. Now, we have moved this standalone recommender to an application in a social network where we can benefit from the information stored in it. Embedding the application in Facebook also makes it more reachable to everybody who has an account in it, so our users can easily benefit from our services of recommendation.

5 Acknowledgments

References

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