

Chapter 56

Hybrid Recommender System Using Emotional Fingerprints Model

Anthony Nosshi

Mansoura University, Mansoura, Egypt

Aziza Saad Asem

Mansoura University, Mansoura, Egypt

Mohammed Badr Senousy

Sadat Academy for Management Sciences, Cairo, Egypt

ABSTRACT

With today's information overload, recommender systems are important to help users in finding needed information. In the movies domain, finding a good movie to watch is not an easy task. Emotions play an important role in deciding which movie to watch. People usually express their emotions in reviews or comments about the movies. In this article, an emotional fingerprint-based model (EFBM) for movies recommendation is proposed. The model is based on grouping movies by emotional patterns of some key factors changing in time and forming fingerprints or emotional tracks, which are the heart of the proposed recommender. Then, it is incorporated into collaborative filtering to detect the interest connected with topics. Experimental simulation is conducted to understand the behavior of the proposed approach. Results are represented to evaluate the proposed recommender.

1. INTRODUCTION

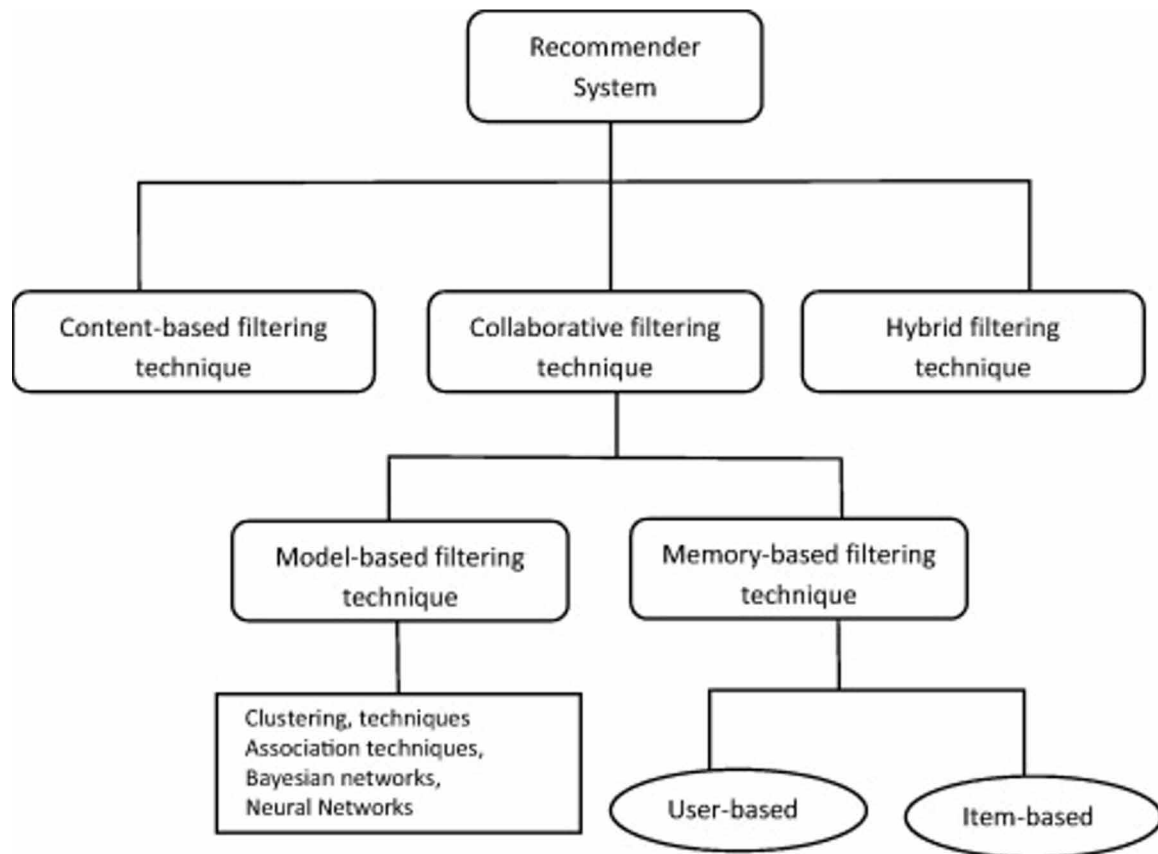
Nowadays, People are using the internet in their everyday tasks more than ever (Borg & Smith, 2018). Thus, users get a large volume of information every time they search for something online. Accordingly, this big amount of information overwhelmed users (Mezni & Fayala, 2018), (Kunaver & Požrl, 2017). Therefore recommender systems are important to suggest the most suitable items for users (Lacerda,

DOI: 10.4018/978-1-6684-6303-1.ch056

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2017). The recommender systems intended to automatically understand the user's inclinations and provide them with an item list that they will mostly like (Karimi, Jannach, & Jugovac, 2018). There are three approaches to the recommender systems: Collaborative Filtering (CF) (Nalmpantis & Tjortjis, 2017), Content Based (CB) (Frolov & Oseledets, 2017) and hybrid (Sulikowski, Zdziebko, & Turzyński, 2017) as on (Figure 1).

Figure 1. Recommender systems approaches (Batchakui, 2017)



CF goal is to give the users a customized recommendation based on “votes” made by others in form of ratings (Fu, Qu, Moges, & Lu, 2018), (Pang et al., 2018), (F. Wang et al., 2017). It is remarked by the ability to provide new recommendations to users that vary from what they have already chosen or seen before (Xie, Chen, Shang, Huang, & Li, 2015), (Valcarce, Parapar, & Barreiro, 2018), (Pang, Jin, Zhang, & Zhu, 2017). Whereas in CB systems, a user can receive recommendation without any assistance from others. It is suitable for finding different user's interests (Champiri, Shahamiri, & Salim, 2015), (Xu, Dutta, Datta, & Ge, 2017), (Mezni & Fayala, 2018), (Jang, Yang, Kim, & Park, 2018). It relies on finding item features, and create a user profile based on her preferences (Shu, Shen, Liu, Yi, & Zhang, 2018).

Traditional recommendation systems suffer from multiple limitations. For example, to enable the CF making a good recommendation, there should be enough set of ratings, which usually does not happen

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