Customizable Surprising Recommendation based on the Tradeoff Between Genre Difference and Genre Similarity

**ABSTRACT**

Recommendations generated by Content Based method are highly related to the user’s previous choices, which may not only unattractive to the user, but also restrict the user’s horizon. At the same time, a new paradigm of making recommendations that “surprise” the user poses new challenges in relation to the definition, formulation and performance metrics for surprising recommendation systems. Moreover, users may demand recommendations with varying degrees of surprisingness that satisfy their personal interests on the one hand, and encourage the explorations of new or unexpected areas of potential interests on another. To meet these challenges, in this paper, we proposed a framework, called Customizable GenPref, and the associated techniques for generating customizable surprising recommendations. Specifically, we contribute to the following aspects: firstly, through a review of the related works, we distinguish the difference between surprisingness and other concepts such as diversity, unexpectedness in non-traditional recommendations; secondly, we argue that the elements of surprise in a recommendation involve two conflicting goals, namely unusuality and relevance in the recommendation and proposed a framework of making recommendations such that by tuning a user-defined parameter, a user will receive recommendations which are either similar to his/her previous choices, or different and novel that surprises him/her, or combinations of both. We have evaluated our proposed framework using several relevant performance metrics, such as accuracy and diversity. Our experimental results show that Customizable GenPref is not only able to predict and recommend similar or surprising items that the user may like, but, at the same time, also serves the business objectives of e-commerce sites by recommending more distinct items to the users compared with baseline methods.

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