The Not-so-Magic Magic Barrier of Recommender Systems

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ABSTRACT

Recommender Systems need to deal with different types of users who represent their preferences in various ways. This difference in user behaviour has a deep impact on the accuracy of the recommendations received by the users, depending, mostly, on the quantity and the quality of the information the system knows about the user. Specifically, the inconsistencies of the user impose a lower bound on the error the system may achieve when predicting ratings for that particular user [3].

In our work [1], we analyse how the consistency of user ratings (*coherence*) may predict the performance of recommendation methods. More specifically, our results show that our definition of coherence is correlated with the so-called *magic barrier* of recommender systems [2], and thus, it could be used to discriminate between easy users (those with a low magic barrier, that is, with a low natural variability in their behaviour) and difficult ones (those with a high magic barrier). Furthermore, in our experiments (using a real movie dataset) the rating prediction error for the more coherent users is significantly lower than that of the less coherent ones.

BODY

We show that the magic barrier of recommender systems is not magic at all. In fact, it is an easily computed statistical rating property.

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