

Exploring the Effect of User Control in Recommender Systems on User Experience

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ABSTRACT

Recommender systems are extremely popular in a range of application domains. These systems attempt to recommend suitable items to users. The quality of these systems have been measured in experimental settings using metrics such as novelty, coverage and accuracy. These metrics can be affected by the setting of several parameters in the recommender system. This work attempts to allow users control over some of these parameters; we explore in a small trial the effect of these changes on the user experience.

CCS CONCEPTS

•Information Systems → Information Retrieval;

KEYWORDS

Recommender Systems, Collaborative Filtering, User control

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1 INTRODUCTION

Recommender systems are a means of filtering information to provide users with information or content that may be of interest. Data on users' preferences is obtained and suggestions regarding objects such as movies, music, articles and products are generated for the user.

Konstan et al [3], discuss how there has been a shift from regarding recommenders as prediction engines to emphasising more the user experience. This has been heavily influenced by the fact that recommenders are mostly used in a commercial context to recommend items for users to purchase. Traditional metrics such Mean Average Error (MAE) fail to capture the notion of user satisfaction and are being increasingly replaced.

Previous research [2] has shown that users can be reluctant to provide explicit data and that, furthermore, they wish to exercise control over their recommendations. However, the level of control must not be too complicated as they may reduce the quality of the user experience. In the work by Harper et al [2], users were provided with the opportunity to choose items based on the level of popularity and age of their movie recommendations. It was shown that users wish to control their recommendations.

2 METHODOLOGY

In this work, we allow users some control over the similarity measure being used in the system and we use subjective user feedback to measure the quality of the results. We begin by asking the participants to provide some information pertaining to their preferences about movies and preferences. We adopt three different similarity measures: Pearson Correlation, Tanimoto Coefficient and Log-Likelihood-Based similarity. We used the MovieLens dataset with 100,000 ratings [1].

Users were presented with results from two systems: one for which they had no control and the other where they could choose the similarity measure (having being exposed to the workings of the measures). A small set of recommendations were provided for each user in each setting. Users were asked how many of the recommendations were good and how many of them were surprising or novel. Finally, users were asked to specify which setting they preferred—the default setting (no control over algorithms used) or the setting where they were afforded a choice.

3 RESULTS AND CONCLUSIONS

When comparing the users' feedback on the systems, the setting in which the users could select similarity algorithms was preferred by all participants. This results, although found over a small sample set of users (8) indicates that being allowed control over, and knowledge of, the similarity measures improves the user experience.

There are several limitations of this study—namely the size of the survey and the lack of diversity in the cohort surveyed. Future work will involve a larger study and an exploration of more aspect pertaining to the control. In this work, we consider only the similarity. In this domain, many factors may influence the users' responses; the quality of the responses, the user expectations, the user's priorities (novelty versus coverage), the user interface, and the effort involved. Further careful experimentation will be used to explore the interplay between these aspects and their relationship to the overall user experience.

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