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# What and Who with: a Social Approach to Double-Sided Recommendation

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**Abstract**

Double-sided recommendations (DSR) have been recently introduced for an item and a group that the item is destined for. Herein we present an algorithm which takes inspiration from the Social Comparison Theory to recommend items that had an average positive evaluation from other users on the target user's social network. Other users' judgments are weighted according to the influence these users have on the target. Moreover, for each recommended item, we propose a group that encompasses all the target users' contacts who expressed a positive opinion on it.

Our data show that users consider double-sided recommendations more useful than traditional recommendations which provide equivalent information. It was observed that our "social" DSR algorithm performs better in the event recommendation domain than a content-based one which has already been recognised as providing a good performance, in terms of precision, recall, accuracy and F1. This result is strengthened by our demonstrating that the good performance DSRs provide also depends on their peculiar structure and not only on the fact that they include "social" information. The item-recommendation part also performed better than a user-based collaborative filtering algorithm. Lastly, we found that users' scores for recommended item-group packages can be better predicted by considering only the system scores for the recommended groups, at least in the domain of social and cultural events.

*Key words:* recommender systems, group recommendation, social network, user model, content-based recommendation, double sided recommendations

## 1. Introduction

Everybody makes daily decisions, be they small or large, as to what to do and consume. During this decision making process, the presence of other people is usually implicitly or explicitly considered as part of the experience they are

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