Evaluating the Relative Performance of Collaborative Filtering Recommender Systems

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1 Summarized Publication(s)

Paper Title:	Evaluating the Relative Performance of Collaborative Filtering Recommender Systems [1]
URL	http://jucs.org/ publications repository
Journal	Journal of Universal Computer Science
Publication Date	28 December, 2015

2 Summary

Past work on the evaluation of recommender systems indicates that collaborative filtering algorithms are accurate and suitable for the top-N recommendation task. Further, the importance of performance beyond accuracy has been recognised in the literature. Here, we present an evaluation framework based on a set of accuracy and beyond accuracy metrics, including a novel metric that captures the *uniqueness* of a recommendation list. We perform an in-depth evaluation of three well-known collaborative filtering algorithms using three datasets. The results show that the user-based and item-based collaborative filtering algorithms have a high inverse correlation between popularity and diversity and recommend a common set of items at large neighbourhood sizes. The study also finds that the matrix factorisation approach leads to more accurate and diverse recommendations, while being less biased toward popularity. [1]

References

1. Corona Pampín, H.J.C., Jerbi, H., O'Mahony, M.P.: Evaluating the relative performance of collaborative filtering recommender systems. Journal of Universal Computer Science 21(13), 1849–1868 (2015)

[1] This work was supported by Science Foundation Ireland under Grant Number SFI/12/RC/2289 through The Insight Centre for Data Analytics.