



Neighbor selection for cold users in collaborative filtering with positive-only feedback*

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Abstract—Recommender systems heavily rely on the availability of historical user preference data, struggling to provide relevant suggestions for new users. The cold start user scenario is thus recognized as one of the most challenging problems in the recommender systems research area. Previous work has focused on exploiting additional information about users and items –e.g., user personality and item metadata– to mitigate the lack of user feedback. However, it is still unclear how to approach the worst scenario where no side information is available to a recommender system. Addressing this problem, in this paper we focus on new users of memory-based collaborative filtering methods with positive-only feedback, and conduct a comprehensive study of a number of neighbor selection strategies. Specifically, we present empirical results on several datasets analyzing the effects of choosing adequately the user similarity, the set of candidate neighbors, and the size of the user neighborhoods. In particular, we show that even few but reliable neighbors lead to better recommendations than large neighborhoods where cold start users belong to.

Index Terms—recommender systems, collaborative filtering, cold start, neighbor selection