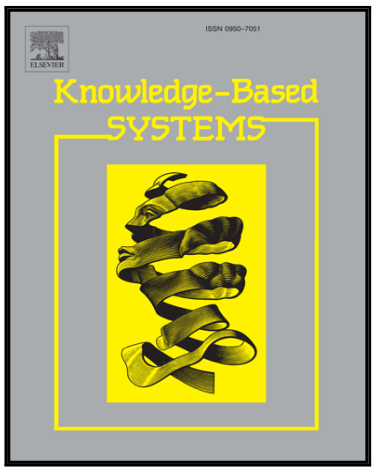

Dynamic Feature Weighting based on User Preference Sensitivity for Recommender Systems

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Abstract

With the development of information technology, the issue of information overload has become an ever-increasing problem throughout this decade. In order to provide useful and interesting information to users, recommender systems were proposed to actively select preferable items for users who potentially desired. In this paper, we focus on personalizing aspects of recommender systems, since it is observed that the weights of the dimensions should be distinct for every user when measuring the similarities between items. To achieve this outcome, we suggest that the dimensions of items should be classified into different types such as numeric and textual, and then the average preferences (AP) should be calculated for these dimensions based on all the users in the recommender system. Then, the preference sensitivities (PS) for every dimension can be calculated for every user so that finally the dynamic feature weights can be applied in the calculations. All these aforementioned methodologies are evaluated via experiments using a Recipe Recommender System which achieves an 81.0% overall satisfaction rate on a basis of more than 50 real volunteer users from diverse educational background.

Keywords: Compound Textual Dimensions, feature weighting, recommender system, weighting scheme, dynamic weights