

# Kernel Mapping Recommender System Algorithms

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## Abstract

Recommender systems apply machine learning techniques for filtering unseen information and can predict whether a user would like a given item. In this paper, we propose kernel based recommender (KBR) algorithms that solve the recommender system problem based on a novel structure learning technique. This paper makes contribution on the followings: we show how (1) user-based and item-based versions of the KBR algorithms can be build; (2) user-based and item-based versions can be combined; (3) more information—features, genre, etc.—can be employed using kernels and how it affects the final results; and (4) to make reliable recommendations under cold-start and long-tail scenarios. By extensive experimental results on five different datasets, we show that the proposed algorithms outperform other state-of-the-art algorithms on large datasets.

*Keywords:* Recommender systems, Structure Learning, Linear operation, Kernel, Clustering,

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## References