

VISUALIZATION OF RECOMMENDATION SYSTEM RESULTS IN A RELATION-PRESERVING SPACE

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ABSTRACT

When searching for content within a very large data set, a recommendation system is commonly used to target the most relevant information for a user. Large amounts of resources have been poured into the development of recommendation systems, resulting in systems that utilize techniques such as collaborative filtering and content-based filtering. The display of recommendation system results are generally an afterthought. Improvements in baseline computer graphics hardware and global network infrastructure give way to more robust and dynamic display techniques, providing additional information during a user's decision-making process.

This research aims at creating a richer and more informative user interface to display recommendation system results, an improvement over commonly used item lists. After a comprehensive review of existing recommendation system data displays and models, a new framework based on multi-dimensional scaling techniques is proposed. The new framework maintains an internal data structure, called the *Common View*, which stores the relationships between relevant data items. From the *Common View*, 2D and 3D inter-item relationship preserving visualizations of the recommendation system data can be generated. Experimental results show that compared to current visualization techniques, the new system improves a user's decision-making ability.