

# Evaluating Recommender Systems for Digital Library Datasets

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## Abstract

With the increasing amount of digital content online, recommender systems play an important role in filtering out and helping users navigate large information spaces by generating personalized recommendations. This study focuses on evaluating content-based recommender systems, which are specifically designed for digital library datasets. These content-based filtering methods analyze textual data from books to generate recommendations based on similarity between content features. The goal is to investigate different algorithms such as TF-IDF, LSA, BERT or BM25, and testing them with different settings to assess their effectiveness in generating Top-N recommendations from book text data. In order to fully evaluate these algorithms, we conduct offline experiments using multiple performance metrics like similarity, diversity, confidence or even coverage. Additionally, the performance of the algorithms is analyzed by tracking execution time, CPU usage, and memory consumption. By benchmarking these factors, we provide information on the trade-offs between accuracy and computational efficiency for the different tested models. Digital libraries can improve user experience by selecting the most effective and suitable recommendation systems. This research identifies the strengths and weaknesses of the selected algorithms for book recommendations, making it easier to navigate large digital collections.