A Hybrid Approach to Solve Cold Start Problem in Recommender Systems using Association Rules and Clustering Technique

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Abstract

Number of people who use internet and websites for various purposes is increasing at an astonishing rate. More and more people rely on online sites for purchasing songs, apparels, books, rented movies etc. The competition between the online sites forced the web site owners to provide personalized services to their customers. So the recommender systems came into existence. Recommender systems are active information filtering systems that attempt to present to the user, information items in which the user is interested in. The websites implement recommender system feature using collaborative filtering, content based or hybrid approaches. The recommender systems also suffer from issues like cold start, sparsity and over specialization. Cold start problem is that the recommenders cannot draw inferences for users or items for which it does not have sufficient information. This paper attempts to propose a solution to the cold start problem by combining association rules and clustering technique. Comparison is done between the performance of the recommender system when association rule technique is used and the performance when association rule and clustering is combined. The experiments with the implemented system proved that accuracy can be improved when association rules and clustering is combined. An accuracy improvement of 36% was achieved by using the combination technique over the association rule technique.
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Index Terms

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