Abstract

The growth of information on the World Wide Web is exponential. Recommender systems are changing from novelties used by the E-commerce websites to serious business tools, which are changing the world of E-commerce. Many of these websites use recommender systems to help the users in finding the desired products to purchase. A recommender system learns from a customer and based on the rating scale and the ratings, which the users provide, the recommender algorithm would recommend products to the user. These systems automate various aspects to a different information discovery model where people try to find other people with similar interests and ask them to suggest new items. These systems enhance productivity; credibility and they increase user experience by reducing search and navigation time. In this tutorial, we will discuss the importance of recommender systems along with the examples of Amazon.com and Netflix websites. Six different types of recommenders namely Demographic, Knowledge based, Utility based, Hybrid, Collaborative filtering and Content based recommenders are discussed along with their strongest and weakest points or limitations including problems with the approaches. Collaborative filtering is the most widely used approach and hence, different collaborative filtering techniques like the k-nearest neighbor, association rules based prediction and matrix factorization techniques are discussed. The tutorial will also contain information about cosine based, correlation based and adjusted cosine similarity. In the final parts of the tutorial, a detailed discussion regarding an R package named recommenderlabMahout will be provided. This package is an extension to recommenderlab package written by Dr.Michael Hahsler and it will provide an infrastructure to develop and test recommendation algorithms in R. A brief demo

regarding the working package will be included in the tutorial to help students in gaining better understanding about it.