

Modeling Users' Evolution of Taste in Collaborative Recommendations using Hidden Markov Models

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Abstract

In many real world scenarios, users' interests change over time and in many cases users get more and more experts toward a specific topic. So, the task of recommendation should change according to users' changes in a course of time. We intend to use Hidden Markov Models for collaborative filtering which has the goal of providing personalized recommendation for users while their preference changes over time. Hidden Markov Models help interpret the users' product selection over a long period of time and suggest recommendations. In Community Question Answering systems such as StackOverflow, as users interact with the system, they gain more credibility and as a result high scores based on their posts and their favorability to other users. Here, by clustering the users based on their credibility score or in other words, their level of expertise, we will increase personalization and most importantly increase the performance of the recommendation in terms of precision and recall. We run our experiments on four online CQA to show the generality of our proposed approach.