Abstract

Recommender systems have become extremely popular in the last decade and are applied to various e-commerce websites. Recommender systems help users find useful, interesting items or content from a considerably large amount of information.

The major challenge in recommender system is Cold-start Problem [1], this appears when a user or item is new, the system may fail because not enough information is available for this user or item. There are so many solutions are proposed to solve cold-start problem including matrix factorization, graph based [2] [3] etc.

One more serious form of cold-start found in some real-time e-commerce applications that is named as CoCoS (Continuous Cold Start) problem[4], this is a recurring version of cold-start even for known users or items, since many users visit the website rarely, change their interests in time, or exhibit different personas. Hence both of the widely used approaches CBF (Content Based Filtering)[5] and CF(Collaborative Filtering)[6] will suffer from this problem.
A Solution to CoCoS Problem in Recommender System based on SNA

The most basic assumption -“similar users will like similar items” [7] of Recommender System fails in some cases where user interest is changing over time and hence CoCoS problem arises. CoCoS problem is domain specific not all e-commerce website falls under CoCoS, but there are some websites that suffer from CoCoS due to the changes in user’s interest over time, the best example is travel and tourism domain based websites. Users booked a ticket or package on their current needs and interest by using different websites and we won’t be able to make a useful set of suggested items because we don’t have sufficient information on user’s recent activities or requirements to generate a set of recommended items.

In this paper, we are proposing a solution to get the recent preferences and interest of user on the basis of Social Network Activities (SNA). Here we are targeting travel and tourism domain to state the CoCoS problem and to find out the solution of CoCoS by using SNA (Social Network Activities). Here we are considering Facebook [8] Check-ins Count (FCC) for obtaining the information about user’s recently visited places and to draw a conclusion for user’s preferences for next visit.

References

8. facebook.com


Index Terms

Computer Science

Networks

Keywords

Recommender system, cold-start problem, continuous cold-start, social network activities.