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Distributed Hybrid Book Recommendation System

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Abstract: ***Many e-commerce Websites are using recommendation systems to provide relevant suggestions to their customers. Every situation can't be solved by same solution. Therefore , in this paper we are providing distributed hybrid recommendation framework . User is divided into different types and according to user's type different algorithms are applied. In this paper solution for cold start problem is also provided. Aim of the paper is to improve efficiency of the recommendation system using dynamic task assignment and spark.***
Keyword: recommendation system, cold start problem, user classification, spark , hadoop.

I. INTRODUCTION

Recommendation system is used to find user interest and improves user experience. Collaborative filtering method is used when there are many items rated by user. Content based filtering is used when there are enough information about item. But same method can not be used for different cases. In some cases information little information about user is available, in some cases much information about item is not available and in other cases little information about both is available. For example, for new user or for new item very few information is available. This comes under cold start problem.

In this paper solution to solve cold start problem is provided. Content based similarity is combined with collaborative filtering method in existing recommendation system. But this method does not solve cold start problem.

In this paper, distributed hybrid recommendation framework is brought forward. This approach solves the cold start problem. In this hybrid approach first type of the user is identify and user classification is done. After classifying the user into different types, algorithm is assigned dynamically[1].

II. LITERATURE SURVEY

We can not apply same algorithm for different type of users. So user is classified according to its experience and them algorithm is applied. For example if number of items rated by the user is less then collaborative filtering will not give good results. If book information is not available content based filtering will not give an accurate result. Therefore in different situation different algorithms are dynamically assigned. By this method we can solve cold start problem. That is , if user is new to the system then collaborative filtering is not suitable so we will apply popularity estimation to that user[1].

In paper [2], collaborative filtering method in distributed environment is explained in detail. In collaborative filtering by using rating history of the user similar item to the item rated by user is found out.

In paper [3], hybrid technique of recommendation for recommending book is explained. Various techniques like Collaborative Filtering, Content-based, and Demographic have been adopted for recommendation but there are several drawbacks causing these techniques to fail in providing effective recommendations. Therefore, it is necessary to identify more distinguishing features for optimizing these techniques. This can be achieved through utilizing the strengths of various techniques in a hybrid manner.

Jaccard coefficient or tanimoto coefficient for calculating similarity measure provides most precise result. Apache spark is more efficient than apache hadoop for recommendation system. Spark is generally a lot faster than MapReduce because of the way it processes data. The MapReduce workflow looks like this: read data from the cluster, perform an operation, write results to the cluster, read updated data from the cluster, perform next operation, write next results to the cluster, etc. Spark, on the other hand, completes the full data analytics operations in-memory and in near real-time. it reads data from the cluster, performs all of the requisite analytic operations, writes results to the cluster. This paper presents a new solution to item-based CF based on the Apache Spark platform - a new engine for largescale data processing [4].

[5] this paper integrates hadoop with recommendation system. This paper introduces a improved hybrid recommended algorithm and combine MapReduce programming which is used on Hadoop plaform.

III. CONCLUSION

This paper mainly focuses on distributed hybrid recommendation system which provides recommendation of books to users. Based

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on ratings of the user we define the type of user (New, Ordinary, Expert).We calculate the interest of the user and based on that we recommend books according to their interests.. This paper usually solves the cold start problem and increases the recommendation results. Much better scalability can be achieved if data is in the size of Terabytes.Thus using spark framework it gives more accurate results for the large data.

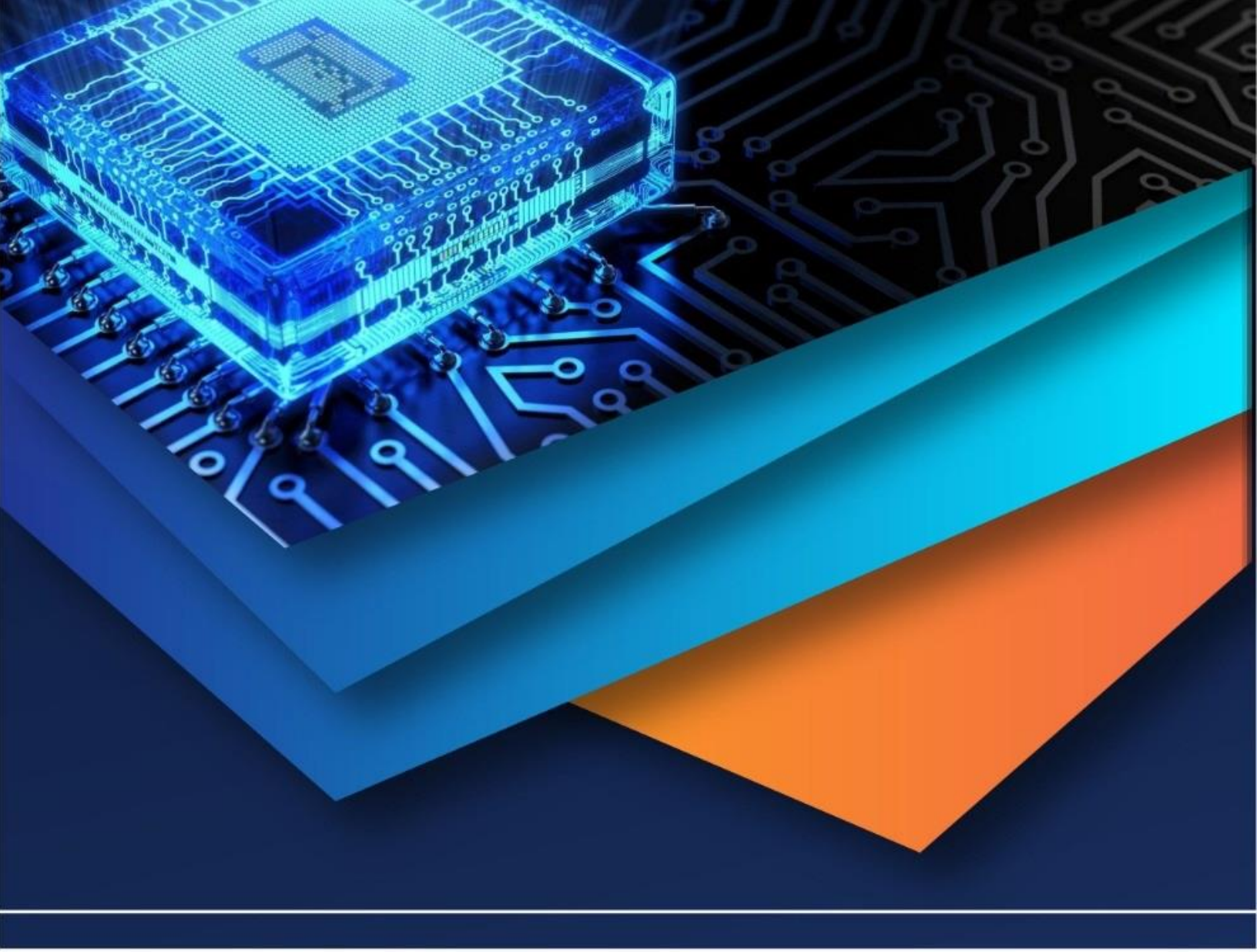
IV. ACKNOWLEDGMENT

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