International Journal of Management, IT & Engineering
Vol. 8 Issue 8, August 2018,
ISSN: 2249-0558 Impact Factor: 7.119
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gage as well as in Cabell's Directories of Publishing Opportunities, U.S.A

Social Group Recommendation Technology Based On Big Data

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Abstract

In recent years, the use of internet and functional activities have created development to evolve the system and application of Cyber-Physical-Social Systems (CPSSs).Cyber-Physical-Social Systems (CPSSs) became the essential criteria of evolution within the data business, through that ancient technology can evolve into cyber-physical-social process science. Existing work is recommended person for example Facebook. This project, proposes a web based application on multidimensional system that the group-centric recommender system within the CPSCP domain with activity-oriented group discovery, the reviews of rating information for improved accuracy result, and group preference modelling that supports context mining from multiple data driven from various sources. To boot we have a tendency to inserting additional four-dimensional cluster preference, modelling like profile primarily based, content primarily based. In profile based profile is going to be refer and content in content based. The goal of all over system is to study and development with specific techniques and Technologies for obtaining user preferences from several interactions with the group member and the main objective is to make the system. The recommender system is economical, objective and correct.

Keywords:

Big data;

Data mining;

Context mining;

Big data analysis;

Cluster preferences modelling;

Recommended services;

CPSCPs;

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1. Introduction

Basically these days Internet of things are popular and widely used and more attractive. Because of Physical locations, Cyber communications, Social relations and even perceptional things which are interconnected. On Internet online group activities are increased to communicate with the need for a group recommendation system to become more and more mandatory. In past years computing, communication, control, management, information development, etc. has been successfully applied to many important systems like healthcare, industries, social media, manufacturing, defense and dramatically increases their controllability,scalability, efficiency, reliability, safety, usability and main is the functionality.In the era traditional computer science will involve in Cyber-Physical-Social Systems (CPSSs) have become the basic criteria of evolution in the information industry [11]. Three important things in designing CPSS based transportation are: The physical system that is proposed by physics of transportation system. The cyber system that is proposed by distributed computing and conversations and social system proposed by human correlations and behavioural decision making. Big Data describes innovatory techniques and technologies to analyze large volume of complex datasets that are exponentially produced from various sources. Big Data means not onlyhuge volume of data but also other features that differentiate it from theconcepts of "very large data" and "massive data" [2], [3].To storing the data which is fulfil by new user/user it store by using following techniques:-

1. Apache Hadoop:-

Apache Hadoop is a java based free software framework.It can effectively store large amount of data in a cluster [11]. This framework runs in parallel on a cluster. Apache Hadoop has an ability to process data across all nodes. Hadoop Distributed File System (HDFS) is the storage system of Hadoop which splits big data and distribute across many nodes in a cluster. This used to replicates data in a node thus providing high availability.

2. NoSQL:-

NoSQL databases used to handle unstructured data with no particular schema. Each row can store its own set of column values. NoSQL gives better performance in storing huge amount of data. There are many open-source NoSQL DBs available to analyse big Data.

3. Hive:-

This is a distributed data management for Hadoop. This supports SQL-like query option HiveSQL (HSQL) to access big data. This can be primarily used for Data mining purpose. This runs on top of Hadoop.

4. Sqoop:-

This is a tool that connects Hadoop with various relational databases to transfer data. This can be effectively used to transfer structured data to Hadoop or Hive.

5. Presto:-

Facebook has developed and recently open-sourced its Query engine (SQL-on-Hadoop) named presto which is built to handle petabytes of data. Unlike Hive, Presto does not depend on Map Reduce technique and can quickly retrieve data.

System Architecture

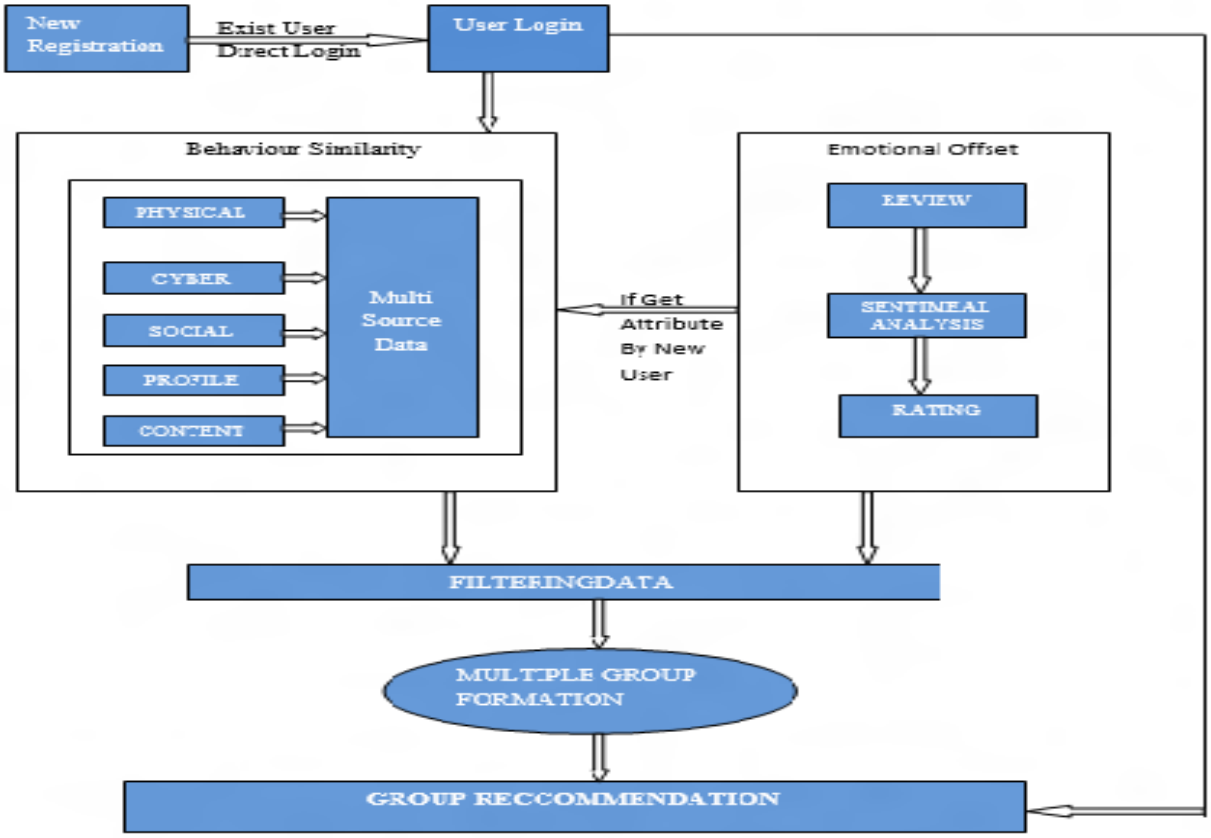

Fig: 1.1 System Block Diagram

This system is going to be developed as a creative website in which Group Recommendation is a main approach. This Group Recommendation is based on behaviour similarity of the user and emotional offset. To making the group on the basis of behaviour and content based using multidimensional database storage i.e. rollup and cube for similar properties and similar attributes of people.

Behaviour similarity invokes the attributes like cyber, physical, social, profile and content. These make multidimensional data which improve the challenge of individual centric recommendation. In emotional offset, it's based on reviews and rating. At a time of sentimental analysis the topic searching part from user reviews are done. LDA is used in sentimental analysis for finding topic from users post. Emotional features are extracted from sentimental analysis the rating module improve the accuracy of recommendation result.

In lower layer the collaborative filtering algorithm, KNN, K-Means and content based filtering algorithm is used for the filtering data from the core system. Collaborative filtering is one of the most popular approaches for determining recommendation. This make important user have greater weight in the recommendation. Finally, filtering of data gives the result of various cluster formation due to which Group Recommendation comes in output. So whenever new user login to the system then system will give automatically group recommendation.

2. Research Method

"Using Web Analytics Data to support Social Software Users", Alexander W. Schneider and Boltzmannstr [1], in this paper they discussed Web Analytics Technologies Challenges in a Social Software Context. Also reviewed how social software encompasses all

web-based applications which support human communication and interrelation. Several scenarios have been developed for implementation.

"Social Business Intelligence Using Big Data ", Gautam Shroff, Lipika Dey and Puneet Agrawal [2],in this paper they examine how the fusion of social andbusiness intelligenceis defining the nextgeneration of business analytics applicationsusing a new AI driven information managementarchitecture that is based on big datatechnologies.

"Parallel Implementation of Big Data Pre-Processing Algorithms for Sentiment Analysis of Social Networking Data ", V. Jude Nirmal and D.I. George Amalarethinam[3],in this paper, they described the 3 approaches machine learning, lexicon based methods and linguisticanalysis for sentimental analysis in terms of efficiency, processing power and memorybandwidth.

"An Intelligent Video Surveillance Framework with Big Data Management for Indian Road Traffic System ", R. Balaji Ganesh and S. Appavu[4],in this paper, they focused on refining a framework for large scalevideo analytics while incorporating the simple light-weight aspects of a video surveillancealgorithm, and makes an insight by adopting blobtracking based video surveillance algorithm forlarge scale video analytics.

"Data Mining for the Internet of Things:-Literature Review and Challenges ", Feng Chen, Pan Deng, Jiafu Wan, Daqiang Zhang, Athanasios V. Vasilakos and Xiaohui Rong [5], in this paper, they reviewed data mining in knowledge view, technique view, and application view, includingclassification, clustering, association analysis,time series analysis and outlier analysis.

3. Results and Analysis

In this section, it is explained the results of research depend on group created on the basis of behaviouralsimilarity of user, postes, their CPSCP fields, posts, friend link and rating. Group recommendation and execution result is given on the basis of 10000 result checked and from that result is obtained.

Fig.3.1presents the result of Comparison of Traditional System and Proposed System for Group Recommendation

Fig. 3.2 presents the result of Comparison of Traditional System and Proposed System for Execution Time

Table.3.1 presents the result value of Comparison of Traditional System and Proposed System for Group Recommendation

Table. 3.2 presents the result value of Comparison of Traditional System and Proposed System for Execution Time

Fig.3.1 Comparison of Traditional System and Proposed System for Group Recommendation

	Traditional System	Proposed System
s1	50	70
2	40	75
3	47	80
4	60	82

Table.3.1 Comparison of Traditional System and Proposed System for Group Recommendation

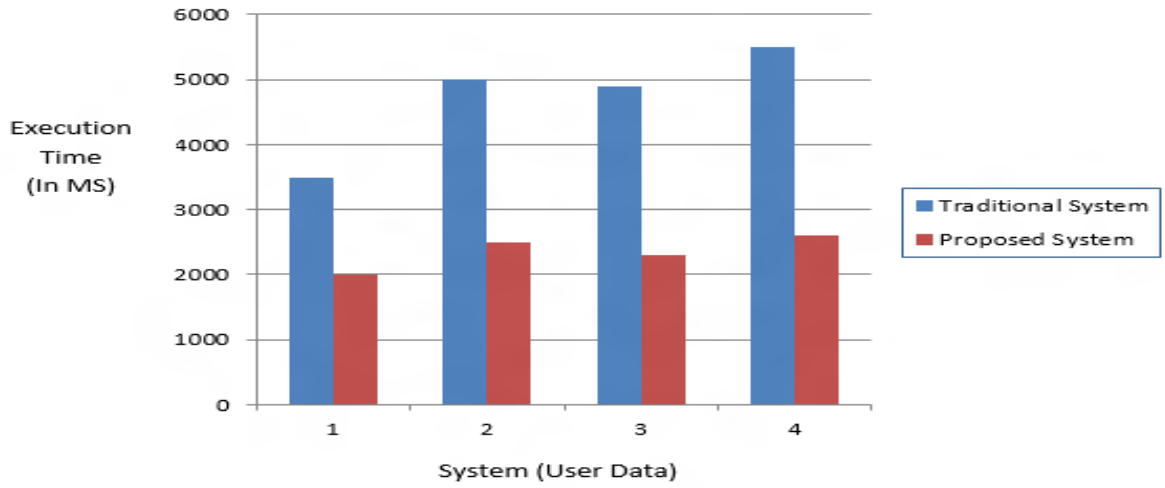

Fig. 3.2 Comparison of Traditional System and Proposed System for Execution Time

	Traditional System	Proposed System
1	3500	2000
2	5000	2500
3	4900	2300
4	5500	2600

Table. 3.2 Comparison of Traditional System and Proposed System for Execution Time

4. Conclusion

This system is going to be developed as a creative website in which Group Recommendation is a main approach. This Group Recommendation is based on behaviour similarity of the user and emotional offset. SNS provides individual centric recommendation, this make complex, non-efficient system. So to come over this problem we comes with Group centric recommendation based on CPSCPs. This provide effective, objective and accurate recommendation services in CPSCPs. This help to reduce complexity of conventional individual centric recommender systems. The emotional offset extracted from reviews, sentiment analysis is proposed to revise user rating for improved result of rating data. Cluster data is achieve by applying KNN, K-means, collaborative filtering, content based filtering.Result Analysis is obtained for Group Recommendation System by stepwise execution of the project. After successful execution of the project the system gives group recommendation. This group recommendation system gives efficient, effective and accurate results. At the end it will give recommendation of the group that will help in various field like professional field, Industrial field, and personal day-to-day life.

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