

Service Quality Evaluation by Exploring Social User's Contextual Information

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Abstract. In today's world online social networks are mostly used by many of the users. Many people post their reviews and comments in the third party websites. There are fraudulent users who give false reviews & comments. It is unable to trust any person words regarding anything whether the information they are providing is genuine or not. In order to avoid the difficulties that many people are waiting for genuine information and get rid of all the improper information based upon the data mining concepts and computational process, analysis can be made. In this paper we are going to create a website where user can post their information and comments regarding any application. Based upon some conditions, analysis will be done and admin will maintain the website and update the genuine information and remove the improper information regarding any application. It leads to minimization of false information and present the original information to the users.

Keywords: Data Mining, Social network, entropy, machine learning, Artificial intelligence, social users.

1 Introduction

In today's world large amount of data is generated and collected daily. Analyzing the data and finding out important part out of it is really difficult and is the most important need. There is a vast amount of information available within the Information Industry. This information is of no use until it is transformed into useful facts. It is necessary to analyze this big amount of information and extract useful facts from it. Data mining is interdisciplinary subfield that can help us meet

this need by offering tools to discover the critical element or we can say information from records. Data Mining is described as extracting statistics from massive units of facts or in other words, we are able to say that data mining is the process of mining knowledge from information. Data mining is the evolution of statistics technology [1]. It is the computational manner of discovering patterns in big records units involving methods on the intersection of artificial intelligence, machine learning, statistics, and database systems.

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The main objective of the data mining process is to mine information from a data set and convert it into a comprehensible structure for further use. Aside from the raw analysis step, it involves data management aspects and databases, data pre-processing, model and assumptions, complexity considerations, visualization post-processing of discovered structures, and online updating. Data mining is the study step of the "knowledge discovery in databases" procedure, or KDD. Mining of data is not the single process we need to perform; data mining also involves other processes such as Data Integration, Data Transformation, Data Cleaning, Pattern Evaluation and Data Presentation, Data Mining. Once all these processes are over, we would be able to use this information in many applications such as Market Prediction, Science Exploration, Credit Fraud Detection and many other applications. Recently with the rapid development of mobile devices and ubiquitous Internet access, social network services have become prevalent [3].

2. Methodology

In this, we focus on quality evaluation for services by exploring social users' contextual information. We suggest using information entropy values to compute user ratings' confidence [4]. Furthermore, social users' contextual infor-

mation is explored from both spatial-temporal aspects and review sentimental aspect. These features are fused into a unified probabilistic model to constrain user rating's confidence. The basic idea is that users' profiles vary with time, places, and sentiments, i.e. user rating's confidence is different at diverse places, different time, and different sentiments. When we get the final confidence, the quality evaluation for services will be figured out[5].

This work allows only authenticated users to login to the system. Then their rating and reviews are considered [6,7]. Based on their reviews they are classified as negative ratings and positive ratings using sentiment analysis. The overall ratings are calculated by using contextual information and ratings provided by the user. The overall ratings are displayed to user.

3. Objectives

This system has a clear set of objectives to be achieved. The system provides a clear algorithm for calculating overall ratings. Finally overall ratings are displayed.

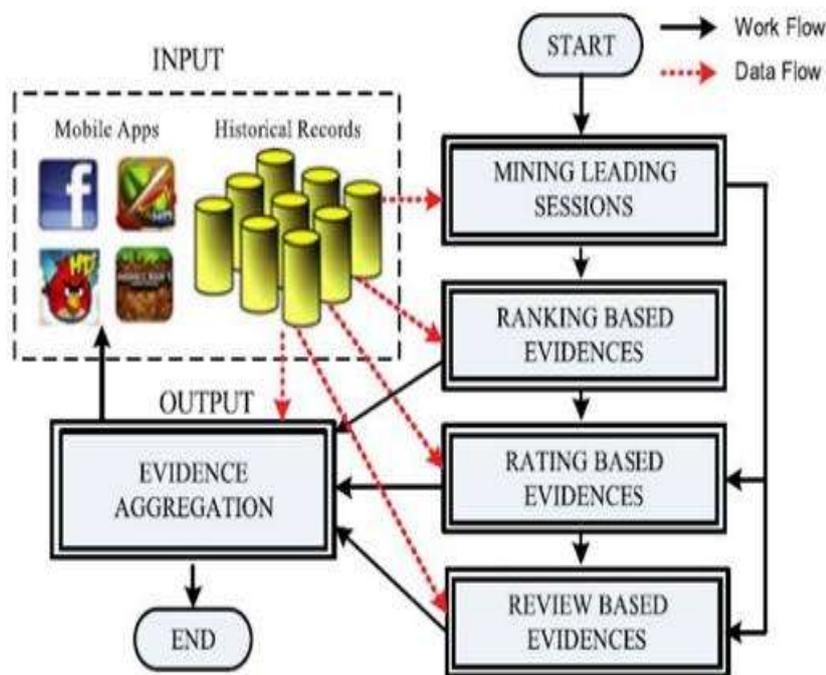


Fig 1. Mining Leading Sessions

4. Algorithm

User confidence E , spatial bias G , temporal bias T , sentimental bias S are calculated

Output: Input: The rating matrix R in training dataset, Quality evaluation of test services.

Initialize coefficient matrices A, B, C , set learning rate α .

for $t=1:T$ do

for each element of coefficient matrices A, B, C , do:

Calculate entropies

for each test item and for each rating of this item do

Calculate the overall confidence and overall rating of this item

Return: The by and large rating of services.

It has the home page where the user has to decide and login as a user or an admin. In the admin login page where the admin need to enter his username and password. The System provides user information like user name, mail id and phone number. The admin can add movies and their information. The system provides movie information. Admin can update and delete movie information. The system classifies the reviews given by the User based on the opinion words given by them. Any page can be used by the user to search for any particular application to know if it is existing.

User Name	Email Address	Word	Rating Item
jagu	vin@gmail.com	good	7.00 bahubali
jagu	vin@gmail.com	bad	3.00 bahubali
jagu	vin@gmail.com	awesome	7.00 bahubali
jagu	vin@gmail.com	good	7.00 bahubali
jagu	vin@gmail.com	awesome	7.00 bahubali
venkat kumar vsvenkats55@gmail.com	vsvenkats55@gmail.com	awesome	8.00 Bahubali
bhavya	bhavya@gmail.com	good	8.00 Bahubali
keerthi	keerthi@gmail.com	extraordinary	9.00 Bahubali

Overall Rating: 11.74

Fig 2. Overall Rating

There will be admin login page and user login page where the admin can login using his login id and password. The admin can add movies and information. Admin has the access to update the information and delete any movie if he finds any unfair cases. The System itself classifies the opinions and reviews based upon the kind of words used by the user. In case of user login user has to enter his information like username, mail id, phone number. The user can also search for any particular application to know whether it is existing or not.

Fig 3. User login page to enter contextual information

5. Conclusion

A good deal of research has focused on tailored suggestion and rating prediction. However, it is important to perform service quality evaluation, especially for the new services with few ratings. Additionally, local urban services providers can get feedback on their services from worldwide users, which are valuable for them to improve their qualities of services. In this, we proposed a model to service quality evaluation by exploring contextual information of social users. We stressed on evaluating user rating's confidence, which denotes the trustworthiness of this rating. Entropy is used to calculate user ratings' confidence. We have explored additionally the sentimental features and spatial-temporal features

of user ratings by combining them into an integrated model to calculate overall confidence. Through our model, we can use a few ratings to predict the overall rating of services. Note that for different domains or datasets, the method of confidence calculation by entropy, which is not based on empirical observations, has wide applicability.

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