

AN EFFICIENT WAY TO RECOMMEND PRODUCTS FOR FRIENDS WITH FEEDBACK MECHANISM IN SOCIAL NETWORK

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ABSTRACT

The advent of the Social Networks makes people's life to be more connected to the social community. This rising trend appears to be a hot topic in the recent years. Friends circle keeps on increasing in the social network. The main objective of this paper is to provide a platform for friends who help them to recommend various products to their friends and friends of friends. Inspired by text mining, we proposed a model which recommends products to friends based on sentimental analysis which categorizes a text document into positive and negative comments by using social sentimental algorithm. It also comes up with a feedback mechanism system that validates how much the product has been liked by the users. It ensures the reliability on the product with the help of various reviews and rating on the concerned product.

Keywords: Product recommendation, Friends, Feedback System, Social Network, Sentiment Analysis.

1. INTRODUCTION:

A social network may be a system that connects the peoples across boundaries to the worldwide social community. With the fast advances in social networks, services like Face book, Twitter and Google+ that makes individuals to invariably keep connected to 1 another. Earlier and until date, few individuals are unaware of fresh free product within the market[1]. However most of them have confidence pre-existing machine generated formats like Amazon and flip cart to select product suggestions. This could not be correct in most of the things. To beat this, during this paper we offer an answer supported the user's life vogue instead of the social graphs to produce product suggestions.

In this paper, we mainly focused on the action of sending product recommendations to their friends with a feedback mechanism system where the users can post their point of view on the product. Here we have used sentimental

analysis as the main theme to implement our system which converts the reviews into positive and negative reviews by interpreting the Words and judges the product in the form of rating.

2. Literature Review:

One of the key challenges with live social networking services is to provide more accurate friend suggestion to the user. But most of the applications depend on pre-existing user relationships such as social relationship to pick friend suggestions. This may not be accurate in most of the situations [2].

To overcome this, in this paper we provide a solution based on the users life style rather than the social graphs to provide friend suggestions.[5] The vast majority of the friend advice system depends on previous user's connections to pick friend candidates.

Existing social networking services prescribe friends to users based on their social graphs, which may not be the most appropriate to reflect a users favourite friend selection in real life [3]. With the fast advancement of social network, approval systems in various field design [6].

Existing research article says that make an awareness among the youth exposed to social networking sites and findings will not only bear results, however adversely and positively is the youth affected by the usage of these sites however additionally helps the youth to understand the usage of these networking sites efficiently[8].

Existing survey regarding impact of social networking on students says that there has been no progress in the necessary measures taken to ensure proper use of these sites, which has led to several problems of security breach and extortion. Three parameters considered are the gender of the student, the school stage, and economic level. A specialized questionnaire was taken to verify the level of students' knowledge and the impact of this level on penetration of the students' privacy during the use of social media [9]

Existing research thesis indicates that students receive and use the promotions they receive through social media sites. There are no statistically significant differences were discovered between genders in terms of social media usage, companies are able to utilize both Facebook and Twitter to reach all customers. Nevertheless, females receive or notice more correspondence on Facebook; therefore, businesses that emphasize their female clientele should consider Facebook rather than Twitter. Overall, college students who use social media more frequently receive more correspondence from companies, and these students then use the promotions. Therefore, businesses should use Facebook and Twitter to obtain the patronage of students but be wary of overloading them with too much information [10].

Existing research On Growth of Indian telecom corporate companies predicting the growth rate by using sentiment analysis through social media like Twitter. In recent days, customers sharing their sentiments regarding top-up prices, policies, online services, customer support etc. after subscribing the corresponding tele brands. The extracted predicted model of telecom brands of five months results provides a sentiment score with validated statistical analysis to improve the future customer experience on new policies of their real time market. The sentiment polarities of Positive, Negative and Neutrals provides a weights on customer tweets to find out the keywords like Call drop, Cost, Internet speed, Signal strength and support work.[11]

Existing research focus on analysis of underlying profitable information to self-marketing employees or companies to optimize brand communication on social networks mainly focusing on YouTube application. The sentiment polarity is negative when the followers give a dislike action and on negative comments, the polarity is positive when the followers give a like action and on positive comments and the polarity is neutral when the followers give a sharing action of video. The results which indicate the importance of how to optimize the communication of real time market brands by considering the customer sentiments. By KNN on customers' sentiments we can predict 82.3% accuracy of their positive comments [12].

Data mining is a process of converting data in to information and useful to interpret the data. Bag of Words are used to classify the sentiments as negative, positive and neutral, but with a limitation of deficiency to handle shift polarities. The dictionary based classification used to classify the sentiments more accurate than Bag of Words by pre and post conjunction negative oriented sentiments and sentences. By using this model, ambiguity is reduced by analyzing review extraction, review evaluation and visualization of negative reviews. With this model we can only predict whether customer can decide to buy a product or not [13].

In real time of social media, every day huge size of blogs, sentiments, reviews ratings, product recommendations, customer feedbacks are generated by clients or users. These sentiments are very useful for the companies to improve their business and also a new user without knowing the technical description on products can buy it by using the rating and reviews. This sentiment analysis is used to analyze and detect the suitable polarities from sentences or text. The accuracy of sentiment analysis results highest accuracy with 77.72% on negation over bi-polar, domain dependence and NLP Overheads [14].

3. PROPOSED SYSTEM:

Recommendation applications are usually classified into instance type and link recommendations [7]. Amazon, Flip kart and Myntra emphasize object recommendation where products are recommended to users supported past behavioural patterns. Social networking sites like Face book, Twitter and LinkedIn focus on link recommendation where friend recommendations are conferred to users [4]. Our work mainly focuses on the friend recommendation inside any type of social networking sites. In this paper we used an approach called a friend of friends.

Social Networks primary perspective is the customization of client encounters. Suggestion frameworks speak to a curiously large job in giving quality bespoke client encounters. The test in creating appropriate companion suggestions is because of the dynamic idea of people's view of relationship, which establishes a reason for heterogeneity in interpersonal organizations. It's standard and some of the time for people to modify their read of relationship. Further, this read differs from individuals to

individuals amid which an informal community will persevere through regular and quick correction after some time even while not the presentation of ongoing hubs.

3.1 System Architecture:

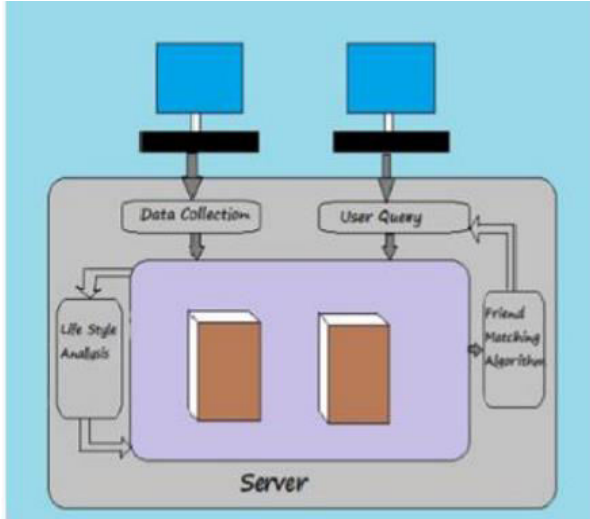


Figure 1: Layout of the System

Figure 1 shows the layout the proposed system. This demonstrates how framework really functions. The subtleties are sends by the individual machines and are gathered on the database. The stream of subtleties is additionally appeared inside the figure Implementation of the given calculation is finished by utilizing Eclipse and Oracle database. The UI is intended for tolerating the qualities from the client whereupon the calculation must be connected.

Implementation details are like as follow.

1. UI is built by Eclipse application.
2. Clients will give the important information through the interface.
3. Utilizing the JDBC-ODBC connector the connecting is done between Oracle and Java.
4. The information is send to the back-end database.
5. Given calculation is connected to remove the information from the database in order to prescribe companions to the client.

The pseudo code of the friend recommendation mechanism is shown in following Algorithm

Algorithm for Friend Recommendation:

- Step 1: Initialize $U = u_0, u_1, \dots, u_{n-1}$;
- Step 2: Initialize $tot := cnt$;
- Step 3: Repeat steps from $k=1$ to n
- Step 3.1: if $id1 == tot$ then continue
- Step 3.2: Compare $id1$ and U
- Step 3.3: $u[k] = dc$

Step 3.4: Load names array with all user names of dc

Step 4: Print the result as $u[k] + name[k]$

Step 5: End

This new idea of friend recommendation can prompt new sort of social relations among the general population. Making companions dependent on ways of life is an increasingly effective and solid procedure for making a constructive relationship among the general population. As individuals gives an inclination to the ways of life than topographical methodology for making companions. The calculation can additionally be used by the majority of the person to person communication destinations which gives offices to interface with the world. Utilizing this calculation the methodology for making companions isn't limited to just topographical or social relationship yet in addition gives a path by which people judges to make companions in any piece of the world.

3.2. Block Diagram:

3.2.1. User Side:

- Search friends and forward requests.
- Accept requests and sends requests
- Recommend products to friends and friends of friends.
- View products recommended from other friends.

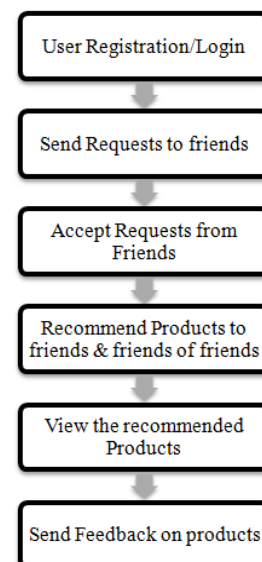


Figure 2: User Side Flow

3.2.2. Server Side:

- Adding products.
- Positive and negative reviews products.

- Monitors all friend requests and response.
- Recommends products to friends that have rating above 80%.

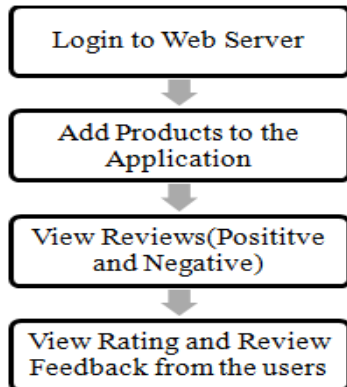
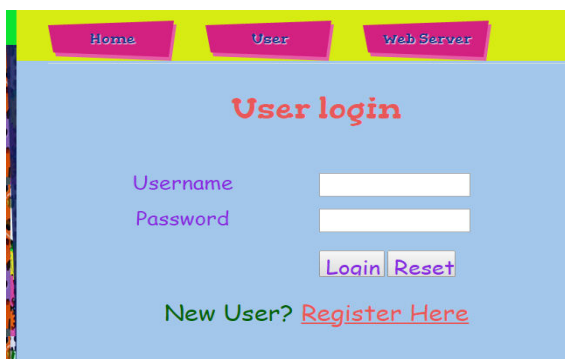


Figure 3:ServerSide Flow

4. RESULTS:

Here registered users and Server can login to enter into the application. Here users who are new to the platform need to get registered to the application. Admin logins and monitors the actions being performed by the users like adding products ,sent requests, positive and negative reviews.



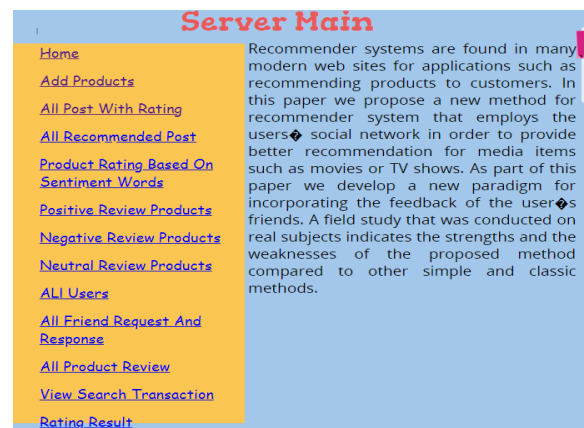
The image shows a web page titled "User login". It has a navigation bar with "Home", "User", and "Web Server" tabs. The main content area has a light blue background. It contains a "Username" input field, a "Password" input field, and "Login" and "Reset" buttons. Below these fields, it says "New User? [Register Here](#)".

Figure 4: User Login Page



The image shows a web page titled "Server Login Page". It has a navigation bar with "Home", "User", and "Web Server" tabs. The main content area has a light blue background. It contains a "Username" input field with the text "server" inside, a "Password" input field with "*****" inside, and "Login" and "Reset" buttons.

Figure 5: Server Login Page



The image shows a web page titled "Server Main". It has a navigation bar with "Home", "User", and "Web Server" tabs. The main content area has a light blue background. On the left, there is a list of links: "Home", "Add Products", "All Post With Rating", "All Recommended Post", "Product Rating Based On Sentiment Words", "Positive Review Products", "Negative Review Products", "Neutral Review Products", "All Users", "All Friend Request And Response", "All Product Review", "View Search Transaction", and "Rating Result". On the right, there is a text block that reads: "Recommender systems are found in many modern web sites for applications such as recommending products to customers. In this paper we propose a new method for recommender system that employs the users' social network in order to provide better recommendation for media items such as movies or TV shows. As part of this paper we develop a new paradigm for incorporating the feedback of the user's friends. A field study that was conducted on real subjects indicates the strengths and the weaknesses of the proposed method compared to other simple and classic methods."

Figure 6: Web Server Page

Here admin and users can add products to the database which can be accessed by the users to recommend to their friends.



The image shows a web page titled "Add Products". It has a navigation bar with "Home", "User", and "Web Server" tabs. The main content area has a light blue background. It contains a "ProductName" input field, a "Price" input field, a "Description" input field, and a "Profile" input field with a "Choose File" button and "No file chosen" text. There is also a "Back" button and a "submit" button.

Figure 7: Adding Products

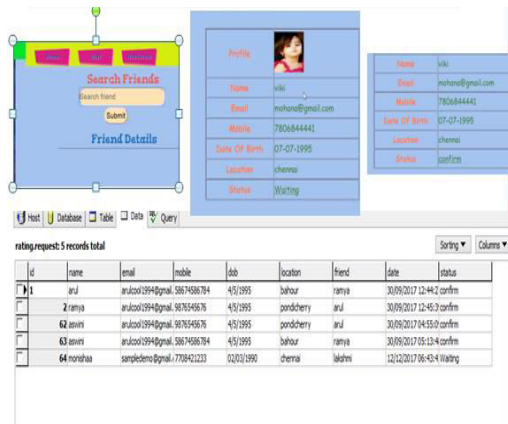


Figure 8: Friend Request Table

5. Result Analysis:

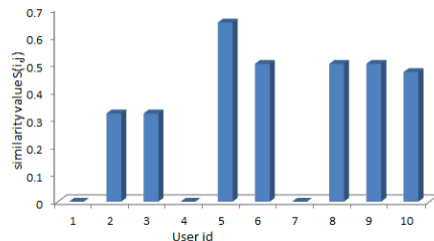


Figure 9: Userid Versus Similarity

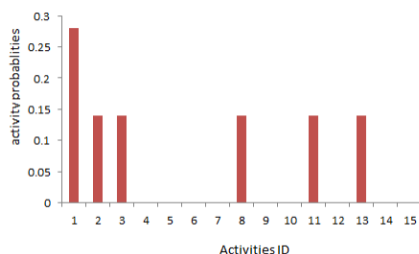


Figure 10: Friend's Activities Versus Probabilities

Figure 9 is the bar graph for various friends' ids vs. similarity value. Figure 10 represents the activity vs. probabilities. Total we have considered a sample of 15 activities of various friends and plotted the result for activity and corresponding activities probability for one user.

6. Comparative Results:

We compare the results of the proposed method to popularity. Table 1 present the results of the popularity and the recommendations. Analysis of the results indicates that the recommendations work is obtaining similar results to the popularity. In the R measure, which

takes into consideration the order of the recommendation, yet all the products which exists in the data as potential recommendations, the product recommendations obtains better results. The recall measure is affected from the point of the measure. Here the recall at the level of hundred products is close to 93% in popularity and in product recommendation in social network as well. It is indicating that both of the methods perform very well on this data. Both are resulting into almost similar results.

Table 1. Comparative results between popularity and the personal social network

	R-Measure	Recall 110	Recall 120	Recall 160
Popularity	111.97	0.26	0.4598	0.927
Product Recommendations	119.734	0.2285	0.4387	0.9232

7. Conclusion:

Our work mainly focussed on introductory revelations to a very much characterized technique for giving companion suggestions to satisfying friend's desires by prescribed items to their companions from different companions in informal communities while moreover picking up understandings into how fellowships are framed. This can likewise be utilized as a publicizing vehicle for different business firms to advance and elivate their deals. In this paper we built up an effective and adaptable framework which prescribes items for companions and their friends as indicated by their way of life with the assistance of sentimental Analysis.

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