International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 04 | Apr 2021 www.irjet.net p-ISSN: 2395-0072

Detecting and Characterizing Reviewer Groups in Online Product Reviews

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Abstract - *Online marketplaces often sees spam in the form of reviews. People are often hired to target specific brands for promoting them by writing highly positive or negative reviews. This often is done collectively in groups. Although some previous studies attempted to identify and analyze such opinion spam groups, little has been explored to spot those groups who target a brand as a whole, instead of just products. In this article, we collected the reviews from the e-commerce site and manually labeled a set of candidate reviewer groups. The groups are extracted using frequent item set mining over brand similarities such that users are clustered together if they have mutually reviewed. We hypothesis the reviewer groups is dependent on features specific to a (group, brand) pair. Developing a feature-based supervised model to classify candidate groups as extremist entities. We run simultaneously more classifiers to classify a group based on the reviews written by the users to determine whether the group shows signs of end point. These includes consistency in ratings, review sentiment, verified purchase, review dates, and helpful ratings received on reviews. we observe that there are a lot of verified reviewers showing extreme sentiment, which, on further investigation, leads to the existing mechanisms in place to prevent intruder incentives on site.*

Key words: *Searching product, Product review, Fake review detection, Cart, Admin.*

1. INTRODUCTION

People search for various good products. This is due to large number of products in the world. Customers greatly observe the views of different peoples reviews to make decisions. For this, new system emerged called natural language processing. It help people to get products by seeing good reviews. Many people perform a lot of search to choose right products. Most of the people don't even know the right way to get products of their own interest. This Systems helps consumer to choose the product among so many options with use of the product reviews. It finds relevant items from number of attentions. It has a high commercial value and it provides personalized recommendations to users. Firms adopt these systems to gain benefits of the company. Popularity of the company can be explained in e-commerce site. These systems analyze databases of customer interactions with the web and produce useful recommendations. Data is usually in the form of purchase information (i.e., what items customer has purchased), ratings and reviews given by user, purchase behavior of other customers etc. This makes the system to help in E-commerce sites use this system to attract customer to earn benefits. Customers can sit from their workplace and can get whatever products they want. They can use electronic modes for that. They approach some websites and search for products. E-Commerce sites give more option for the customer to choose. Customers select products and pay the amount through their cards such credit cards RS gives good recommendations to users or customers. These recommendations are used in E-commerce for the customers to choose best or right products based on customer interest. They give personalized recommendations to users. It allows users to sort out items which they want from huge set of choices. These personalized systems gather high importance since it allows user to get items from variety of products without loss in their taste.

1.1 OBJECTIVE

The objectives of the product reviews & rating system is to detect whether review it is fake or not. It is responsible for a particular standard for sorting objects. The most common function of this is to sort product according to the reviews provide to the products.

1.2 BENEFITS

The main benefit of the system is to detect whether the posted reviews in the product are fake or real. Filtering out the users rating based on the authorized customer account. The fake and the real reviews are labelled under the users review so that the customer can see which is real and which is fake. The system helps the customer to find the good products by comparing the reviews which s posted below the product.

1.3 CHALLENGES

Main challenge of the review system is to detect the fake account. Collecting the reviews which is posted on the products. The reviews are segregated according the algorithm the segregating process is challenged. This process will affect the accuracy of the result.

2. LITERATURE SURVEY

Sunkuru Gopal, Et.al. "A Hybrid Action-Related K-Nearest neighbour Approach for recommendation Systems" year: 2020

The better way was to base product recommendations not on similarities between customer but on correlation between product with user based collaborative filtering and k-nearest algorithm.

Mayuri G. Dabhade, Et.al. "A Result Review Analysis of Product Recommendation System in Domain Sensitive Manner" International Research Journal of Engineering and Technology (IRJET) Volume: 07 Issue: 07 year: July 2020

A system is used in various fields to show items of interest to users. One of the main areas where this concept is currently used is e-commerce sites that interacts directly with customers and the customer reviews by suggesting products of interest with the aim of improving the sales. Motivated by the observation, a novel Domain-sensitive algorithm is proposed, to make the rating prediction by exploring the user-item subgroup analysis simultaneously, and the collaborative system methods are used there.

Shubham Milind Phal, Et.al. "An Analysis of Machine Learning Methods for Ranking in Recommendation Systems" International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 07 Issue: 05 May 2020

Several prominent e-commerce sites are using the recommendation systems in order to enhance the quality of user. Learned Ranking (MLR) methods have been used in a large number of information retrieval problems such as online-advertising, document retrieval. The ranking function is generally learned using either a Point-wise, Pairwise or a List-wise approach.

Babak Maleki Shoja, Et.al. "Customer Reviews Analysis with Deep Neural Networks for E-Commerce Recommender Systems", IEEE access, volume 7, year: Sept 2019

Product recommendation is drastically changing the revenue of e-Commerce companies. It estimated that product recommendation is playing a important role in the percentage of revenue generated by these e-Commerce companies yearly. Product recommendation is a vast area covering a different aspect of user expectation, behavior, needs interest, etc.

Benito Alvares, Et.al "Sentiment Analysis Using Opinion Mining", International Journal of Engineering Research & Technology (IJERT), ISSN: 2278- 0181, Vol. 5 Issue 04, year: April-2016

In this the Sentiment analysis is done for electronics products. Number of real and fake score is calculated by sentiment analysis and influencing factors identified from promotional marketing data and online review data. With influencing factors, sales or product demands are predicted by machine learning methods, these literature Reviews has established social network analysis which did not combine customer sentiment/opinion on the different sites such as Social Network and E-Commerce website.

V.R.Azhaguramyaa, et.al. "Smart Product Recommender System using Machine Learning" International Journal of Advanced Science and Technology vol.29, No.9s year: 2020

In this system they used the collaborative filtering and content-based systems. Considering comments as an important piece of date, which needs to be processed in order to extract information out of it and possibly combine its use cases with other recommendation systems. The users' comments are extracted and filtered using the methods.

Avinash Kumar, Et.al. "Sentiment Analysis on Twitter Data using a Hybrid Approach" , International Journal of Computer Sciences and Engineering, Vol.-7, Issue-5, year: May 2019

Twitter API tweet has collected Tweets and preprocessed for converting upper case into lower case, stop word, URL, user name starts with @ and more, also Retweets has been removed in the preprocessing steps. Using TF-IDF and Count Vectorization methods feature words extracted. Multinomial Naïve Bayes is used to classify sentences into positive, negative and neutral sentences are extracted. Using the parameters such as Accuracy, Precision, Recall, and F1-Score are used to measure the performance and resulted

3. PROPOSED SYSTEM:

3.1 Architecture

In the architecture a system that is used to abstract the overall outline of the software system and the relationships, constrains, and boundaries between components. It is an important tool as it provides an overall view of the physical deployment of the software system and its evolution. In the (figure 1.1) main architecture system defines how the module functions. At the initial step the user login module is

presented in that the login credential are verified in the admin database. The user searches for the needed product in the site the products are loaded in the admin sides the changes of the products are done in the admin sides. After clicking the product, the customer see the product reviews which are posted. The posted reviews are segregated and analyzed, after the analysis the reviews are labeled whether the reviews are fake or real.

Architecture diagram:

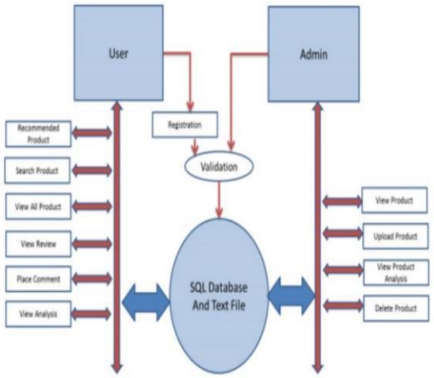

Figure1.1 architecture diagram of the overall module

4. MODULE DESCRIPTION

Registration and login: The customer will register in the website with their details name, numbers, address, etc. The admin will verify the details and approved. Then the customer will login and view the products.

Displaying Products: After logging in website, the product will be displayed. In the admin server, we can add or change the products.

Fake Review Detection: By clicking the product, the details of the product and reviews are displayed. Using the Collaborative Filtering and NLP (natural language processing) Algorithm the process is executed. The reviews are analyzed, the fake and true reviews are detected and shown on the side

Cart: After Fake review detection, If the customer needs to buy the product, then add the product to the cart for purchase.

Flow diagram

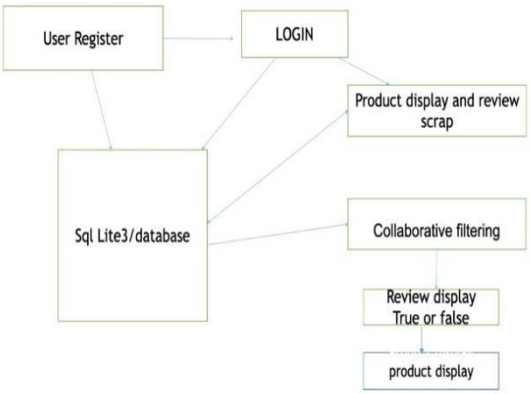

Figure 1.2 flow diagram

In the (figure1.2) explains about the main flow diagram of the system in the first step the user registers their information with the administrator then the user login with their credentials, the administrator is connected with the database/SQL lite3 this SQL lite act as server and the client. Product is displayed and the reviews are posted under the products. The posted reviews are processed with the NLP (natural language processing and the collaborative filtering algorithm. Then the processed outputs are displayed.

4.2 SYSTEM DESIGN:

The front end is designed with HTML, CSS, and jQuery while the back end is built using Python (Apache server). The questions and choices of each question is stored in the database and accessed using apache server. The backend codes are coded in the visual studio code it is a code editor redefined and optimized for building and debugging modern web and cloud application to built and redesigning.

4.3 ALGORITHM

NLP (natural language processing):

In the Natural language preprocessing algorithm processes and gets the texts as inputs
Step:1 first gets the sentences of the reviews as the inputs as the first process
Step:2 after the insertion of the sentences removes the punctuation which are presented in the lines are removed,
Step:3 the article words and the is, are words are removed from the sentences,
Step:4 after that the noun and the adjectives are only presented in the sentences using the adjectives and the number of the repeated adjectives which presented in the

sentences are noted thing these, they processed to sort the reviews.

Collaborative Filtering:

In the collaborative filtering algorithm, which is used to recommend the users of a good products and the process of recommendation is process along with the NLP where the NLP shortlisted a good rated product reviews them the product is rrecommended to the user.

5. EXPERIMENTAL RESULT

In the experimental results the output of the system, layout and the design of the systems are shown in the figures 5.0, figure5.1 and the figure 5.2

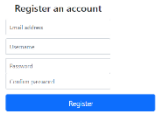

Figure 5.0 register and login

The registration of the customer and the login of the customer details are done in this layout . (figure.5.0)

Figure 5.1 product view

Figure 5.1 shows the layout of the model. Ratings and reviews for the product should be added.

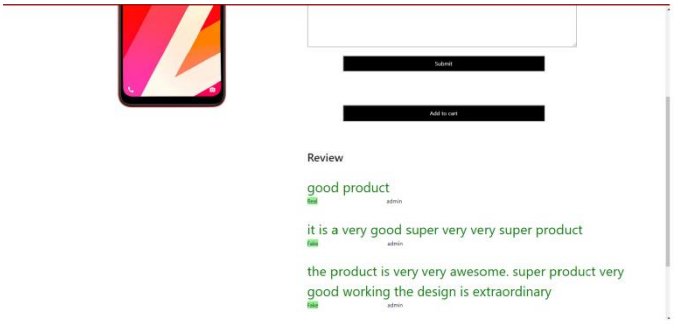

Figure 5.2 product review

Figure 5.2 shows the review of the product. It detects whether the products review is fake or not.

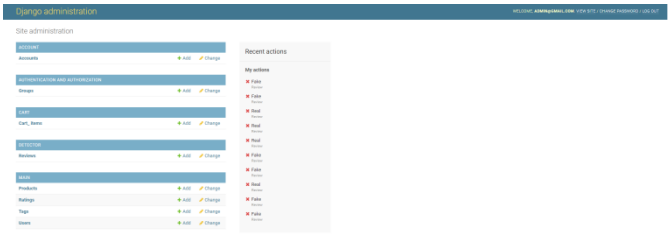

Figure 5.3 admin layout

Figure 5.3 shows the database of the admin where the cart items and reviews can be added or removed.

6. CONCLUSION:

The proposed system has the ability to check the review which are posted below each product are fake reviewed or not. This system can be used on the various sites where the reviews are posted and on some of the e-commerce pages are can be used to sort out the real product reviews. The real product reviews which help the customer to pick up the good products by comparing the reviews posted on the site. In the process of detection, the collaborative filtering and the natural language preprocessing method are used to filters the reviews. In the sites below the posted review, it labeled which products is fake and which product is not are displayed.

7. FUTURE WORK:

In the future this process can be used across the various sited like the movie ticket booking applications some other ticket or product sites and the more sentences detection and

the processing to find out whether it is fake or not. In the filter session we can add up a session filter by mode of the reviews through that the customer can get the real rated products are shown in the top of the list and in the future the fake customer reviews are removal methods are to be implemented to give the best experience of the customer by choosing the real rated products.

8. REFERENCES:

[1] Sunkuru Gopal, Krishna Patro". "A Hybrid Action-Related K-Nearest neighbour Approach for recommendation Systems" year : 2020

[2] Miss. Mayuri G. Dabhade, Prof. Nitin R. Chopde "A Result Review Analysis of Product Recommendation System in Domain Sensitive Manner" International Research Journal of Engineering and Technology (IRJET) Volume: 07 Issue: 07 year: July 2020

[3] Shubham Milind Phal, Smriti Srivastava. "An Analysis of Machine Learning Methods for Ranking in Recommendation Systems" International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 07 Issue: 05 May 2020

[4] . Babak Maleki Shoja; Nasseh Tabrizi "Customer Reviews Analysis With Deep Neural Networks for E-Commerce Recommender Systems", IEEE access, volume 7, year: Sept 2019

[5] Benito Alvares, Nishant Thakur, Siddhi Patil, — "Sentiment Analysis Using Opinion Mining", International Journal of Engineering Research & Technology (IJERT), ISSN: 2278- 0181, Vol. 5 Issue 04, year: April-2016

[6] Prof.V.R.Azhaguramyaa, Hemanshu P Thakker, Murali Manohar K S, Mithun K "Smart Product Recommender System using Machine Learning" International Journal of Advanced Science and Technology vol.29, No.9s year:2020