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Interface for Fake Product Review Monitoring and Removal

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Abstract: *As the trend to shop online is increasing day by day and more people are interested in buying the products of their need from the online stores. This type of shopping does not take a lot of time of a customer. Customer goes to online store, search the item of his/her need and place the order. But, the thing by which people face difficulty in buying the products from online store is the bad quality of the product. Customer place the order only by looking at the rating and by reading the reviews related to the particular product. Such comments of other people are the source of satisfaction for the new product buyer. Here, it may be possible that the single negative review changes the angle of the customer not to buy that product. In this situation, it might possible that this one review is fake.So, in order to remove this type of fake reviewsand provide the users with the original reviews and rating related to the products, we proposed a Fake Product Review Monitoring and Removal System (FaRMS) which is an Interface and takes the Uniform Resource Locator(URL) related to products of Amazon, Flipkart and analyzes the reviews, and provides the customer with the original rating. The proposed work achieved the accuracy of 87% in detecting fake reviews of written in English by using intelligent learning techniques which is greater than the accuracy of the previous systems.*

Key Words: Fake Reviews Detection, Web Crawler Text Classification, Natural Language Processing, Machine Learning, Term Frequency and Inverse Document Frequency, Sentimental analysis, , Review Ranking.

1. INTRODUCTION

There are different ways to shop like you can buy a specific thing of your need by going to a store or mall. In this style of shopping the seller gives you the feedback of the product, you do not know whether he/she is giving a fake feedback or original. Because, it is upon seller honesty, how much the seller is true in his/her words and you have to carefully examine the product because you do not have any other option in examining the product. If you don't pay attention in buying that product then it may be proved a waste for you. On the other hand, nowadays source of shopping has been changed. You can buy the products from the online stores of different brands. Here, you have to place the order without seeing and examining the original product.You read the reviews and buy the product. Therefore, you are dependent on the reviews about the product. These reviews may be the original or fake. The customer wants to buy an original and reliable product, which is possible only when you get the original feedback related to that product. Research shows that U.S. shoppers spend $6 billion in Black Friday sale 2018 . Americans spend 36% of the shopping budget online. In 2017, Ecommerce stores earned $2.3 trillion in sales and expected to reach $4.5 trillion by 2021. Today, almost 1224 million ecommerce stores are operating around the world. Study found that 61% of Amazon reviews that belongs to Electronics Category are fake. There are some websites which are working to detect the fake reviews. Fakespot is an online Website that detects fake reviews using suspicious patterns and reviewers activity. As in the process of buying the product from the online stores you have to read all the reviews one by one to check for the quality of that product and to get a good quality product. It is a very time consuming process. Here this possibility also falls that the reviews may be fake or original. However, if you are provided with the system in which you can find the original feedback and rating related to a specific product .Then, it is the source of satisfaction and reliability for you. In the proposed technique, the reviews related to a product for which the URL is given are extracted. After it, the system finds the fake reviews and finally by analysing these reviews system finds the original reviews of the product. Previous researches detect fake reviews using different approaches including identification address, opinion mining and sentiment analysis, machine learning approach. This system gives you the original words of people related to the product with genuine reviews. Some popular products can get hundreds of reviews at some large merchant sites and FaRMS gives you the promising reviews by filtering fake reviews and then you can decide whether you want to buy or not.

2. MECHANISM

The Mechanism of the proposed system is to establish a remarkable system which makes sure that no fake reviews go undetected. The system has incorporated innovative methods to analyse aver review posted by the customers to detect the fake ones. For attaining maximum detection of fake reviews, our inferface also analysis the behaviour of the customers and identifies malefide spammers and fake customers who post negative reviews. The review after analysis are sorted in decreasing order of positivity exhibited by each review. By doing so genuine customers are able to see genuine reviews.The proposed system is boom for e-commerrce companies who are facing lots of challenges due to the increase of fake reviews in recent years. Customer is also benefitted as he or she won't be deceived by fake reviews which are very well to affect their decision making capacity

when they wish to purchase an item from e-commerce websites most common video formats

3. PROJECT IMPLEMENTATION

In the proposed technique, the reviews relating to a particular product for which the URL is provided are extracted. Then, the system finds out the reviews which are fake and then by analyzing all these reviews understands which ones are the original reviews. Previously researches used to detect fake reviews using different approaches which includes, machine learning approach, opinion mining and sentiment analysis, identification address etc.Therefore, we have proposed Fake Review Analysis and Detection System (FRADS) which helps customers to get original items from online stores at the very minimum time along with the original reviews relating to the product. This system provides the customer with reviews written by genuine reviewers. FRADS also helps to filter out fake reviews form large merchant sites where each product gets hundreds of reviews which will help you to decide whether to buy the product or not..

4. Development Tools

For this project we have used the following software for the development of the application that is available to the user.

o Eclipse

o Google Chrome

o Microsoft Word

o Notepad

We have made use of the following languages for the development of this application.

o Java

o jsp

5. SYSTEM ARCHITECTURE

Detecting fake reviews from product is very much important in this era. As there are two types of purchases in every ecommerceWebsite which are verified purchase and Nonverified purchase means that the customer who was writing the review purchased the product from the online store and who did not receive the product at a great discount. To detect fake reviews, data is gathered from trip advisor, MTurk and Yelp. So that model can be trained in a best possible way.For the verified purchase, it is an obvious thing that the customer has bought that product for which he/she is giving the review. Now, in this situation, if the customer leaves a positive review for the product and gives the rating of 1 or 2 than it is cleared that it is a fake review. That is why system uses sentimental analysis for the verified purchase. For the word like 'good, excellent' etc. the sentiment is to be positive and for the 'bad, poor quality' etc. type words the sentiment is to be negative.

For the Non-verified purchase anyone can give the review of the product without having any type of purchase history on e-commerce Website. Now in this situation, it is possible that the person who is giving the positive review related to the product also gives the good rating to that product. But, here this possibility also falls that the person may be giving the positive review and rating to increase the rating of that product and he is a spammer. In this type of reviews the technique of sentimental analysis is not worked properly because by using sentimental analysis it is considered as a genuine review. So that is the reason the proposed system is using another technique in which Support Vector Machine (SVM) is a classifier.

5.1 Approaches for Verified Purchase

The proposed system takes the URL of e-commerce Websites like Amazon, Flipkart products and based on that URL, scrape all the reviews related to that product. Stores all the reviews in a comma separated values (CSV) file. Load the CSV file and separate the verified reviews from non-verified reviews. Apply sentiment analysis on verified purchase reviews and add another column sentiment polarity. Sentiment is given based on polarity values given below.

Polarity > 0 (positive)

Polarity < 0 (negative)

Polarity = 0 (neutral)

Assigning the positive, negative or neutral to each review has been done at this stage. After it, the system checks for the rating and sentiment of the review. If the rating of the product is 4 or 5 and the sentiment of the review is negative or neutral then the review is considered to be fake. If the sentiment is positive then the review is considered to be genuine one. But, if the sentiment is positive or neutral then the review is considered to be a fake one. If the review has the rating of 3, and the sentiment of the review is either positive, negative or neutral it is consider to be a genuine one.

5.2 Approach for Non-verified Purchase

The technique to detect the fake reviews of the non-verified purchase, we use another approach. For this first step is to collect the text related to the reviews of the product. After gathering textual data, the system applies preprocessing on each review related to the product and then extracts features from the reviews. After features extraction, the next step is to apply the SVM model and after it the results corresponding to the genuine or fake reviews is to be shown to the user.

6. CONCLUSION

In the proposed work, dataset is developed that contains reviews from the online store specially developed for this system. Detection of fake reviews for every individual customer by oneself is a difficult task which is very time consuming too. Text categorization using SVM classifier is one of the best approaches for the detection of fake reviews. With growing importance of ecommerce industry. The number of applications and websites by e-commerce enterprise will also rapidly increase. All these sites will be poured with online reviews. And there are so many organizations focused only providing fake reviews in order to increase or decrease ratings of a particular product. Therefore, the proposed system that detects and removes the fake reviews & one which only shows the reviews which are genuine will be of greater use. It also ranks the positive genuine reviews. It helps the user to get the products from the e-commerce website with at most satisfaction on their mind and pay for the good quality product. As, there are a lot of e-commerce stores which is very relevant in current scenario. The proposed system is having a very great importance in helping the customer to buy genuine and quality products. And also the online shopping websites to solve the problem of fake review detection, analysis and removal.

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