"Fake Product Review Monitoring and Product Evaluation"

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Abstract - *The project aims to develop a website for "Fake Product Review Monitoring and Product Evaluation". The reason behind developing this system is that people are now days heavily rarely on opinions before buying anything. The observation of many peoples to write fraud and useless opinions about other products or service. Hence, this paper conducts an exploratory study to understand the process by which fake reviews are written. The intention of this research is to distinguish the fake opinions posted about products and the genuine one to intentionally change the overall sentiment of the products. So, basically first the admin should login to the website, and the aim of detecting fake reviews are done by tracking the IP address of the user who login, if the multiple review coming from same IP address many times which is then tracked by the system and will review from the system as well as number of review for single product are many times that is also checking review for fake or genuine as per product specification. Basically, the system will consist of two modules. 1) Admin Module 2).User Module*
Keywords- *Sentiment analysis,Grammerly,Fake review opinion.*

I.   Introduction

Nowadays, most of the people prefer online shopping rather than offline shopping as it less downs the physical work of a person while people do online shopping , The reason behind developing this system is that people are now days heavily rarely on opinions before buying anything. This instigates many peoples to write fraud and useless opinions about other products or service. so before buying any product ,people check out the reviews and ratings of the product just to make sure that the product is good or not.

Researchers have proposed various fake review detection approaches are found in the past few years to preserve the accuracy of online opinion mining. Customers can make decision whether he/she should buy or not buy the products. This can helpful to people to purchase valuable product and spend their money on quality products.

But the main issue is that what of the customer review is fake, it will create a negative impact of product on customer. So basically it is difficult to identify the review fake or genuine for user.

So initially this project uses Sentiment analysis and user opinion about products for the identification and removal of fake review by monitoring and tracking the IP address of system. Uses data mining for the ratings to the product by the sentiment of keywords.

To conclude this section, we also note the other related works on opinion spam detection. In [3], different reviewing patterns are discovered by mining unexpected class association rules; however, the dynamics of all these forms of spamming are quite different from those of opinion spamming in reviews.

II.   Literature Survay

Shashank Kumar Chauhan, Anupam Goel, Prafull Goel, Avishkar Chauhan and Mahendra K Gurve, "Research on product review analysis and spam review detection**", 4th International Conference on Signal Processing and Integrated Networks(SPIN) 2017, ISBN (e):978-1- 50902797-2, September-2017, pp. 1104-1109.**

The systems already present today can permit users to submit their reviews and ensure that all reviews are submitted by a legitimate user. But, the contents of the reviews are not analyzed by the administrators for identifying fake reviews. According to various studies, 2-6% reviews present online are fake reviews, and these reviews misguide customers. So, it is important to identify and remove those fake reviews. Various methods have been introduced to identify the fake reviews. One method is by looking at the timestamps and contents of the reviews. Multiple reviews with same timestamp can have similar phrases rearranged in the review content, which imply the same positive/negative feedback regarding a product. To conclude this section, we also note the other related works on opinion spam detection. In different reviewing patterns are discovered by mining unexpected class association rules; however, the dynamics of all these forms of spamming are quite different from those of opinion spamming in reviews.

Cambria, E; Schuller, B; Xia, Y; Havasi, C (2013). "New avenues in opinion mining and sentiment analysis". **IEEE Intelligent Systems. 28 (2):15–21. doi:10.1109/MIS.2013.30.**

Our system aims to overcome this by allowing the administrator to evaluate a product based on user reviews using opinion mining. This is an extra measure of ensuring that fake ratings are not promoted, and customers are not misguided. One of the common methods to rate a product is by doing the sentiment analysis of the product reviews. In this method, the review is analyzed, and each word is assigned a weight based on whether the word is indicating a positive sentiment or negative sentiment. For this, a database of positive sentiment and negative sentiment words is maintained. Also, a database containing stopwords such as him, I, me, etc. which do not convey any sentimental meaning. These words are removed from the reviews during sentiment analysis. Then, the sentiment weights of each word in the review is added and based on the score, the review is classified as positive or negative. But, this method just recommends a product just based on positive or negative classification of reviews. Our system aims to rate a product on a scale of 5 based on customer reviews. To do this, machine learning and opinion mining techniques are used by our system.

III. Implementation

To implement our system of Fake Product Review Monitoring and Product Evaluation an Online Shopping site is developed which is hosted and maintained on a local server. Anyone with the IP address of the local server and project directory path can access the website and enjoy shopping online. The shopping site contains products of two categories (Silver and Gold).

The system is contents a collection of websites that are accessed by external users and some set of websites which are exclusively available only to system administrators. The websites accessed by the users contains various products that are available for purchase, i.e., an online shopping site.
The basic steps which are involved in the implementation of the system are,

- The online shopping website is developing using web-scripting language.
- The product will be added by the admin to shop online.
- User wants to do shopping online must be registered first using their email.
- Registered users can login, access the website, view products and do the shopping (only registered users can buy the products)
- Users can also submit reviews only on products which they have bought
- The system will track the IP address of users submitting the reviews
- Admin can again add more products to the system or delete a product from the shopping site
- Admin can also view the reviews submitted and remove them if found fake (if multiple reviews are being submitted from same IP address, admin can identify them as fake review and remove them)
- Admin will also rate a product on a scale of 5 based on the reviews submitted by the users using machine learning and opinion mining technology

So, basically there are two primary users of the system. One is the admin maintaining the online shopping site and the database, and the other one being the customers who buy products. Therefore, the system consists of two modules: Admin Module: where admin will login, add/delete product, identify and remove fake products, rate a product based on customer reviews User Module: where the online customer will register, buy products and write reviews on the bought products.

So, it is important to identify and remove those fake reviews. Various methods have been introduced to identify the fake reviews. One method is by looking at the timestamps and contents of the reviews. Multiple reviews with same timestamp can have similar phrases rearranged in the review content, which imply the same positive/negative feedback regarding a product.

One of the common methods to rate a product is by doing the sentiment analysis of the product reviews. In this method, the review is analyzed, and each word is assigned a weight based on whether the word is indicating a positive sentiment or negative sentiment. For this, a database of positive sentiment and negative

sentiment words is maintained. We are also check grammerly method for evaluate the product review and monitoring fake or genuine review.

To conclude this section, we also note the other related works on opinion spam detection. In different reviewing patterns are discovered by mining unexpected however, the dynamics of all these forms of spamming are quite different from those of opinion spamming in reviews.

IV.   Block Daigram

Figure. (1)

The **figure**, given above illustrates the detail about the online shopping. Basically it is divided in two parts,
1) Users Module
2) Admin Module

Online shopping consists of interface between the user or customer and system. The user have to first access website of the particular shopping site and secondly the users should register to the site and further to be concurred by the user should to check out the product properly and also check the ratings of and reviews of the product and if the users think that the product is good then users can buy the product, if the users buy the product then the users can post the reviews about the same product. This is the front end of the project and is completely based on user module.

The backend of the project is completely based the admin module which is again divided into two parts
1) Static database: In static database the details of product, details of user's login and admin login and rating classifier is introduced.
2) Dynamic database: Database consists of order details, review and tracked IP address.

V.   Proposed System

In this project our purpose is that user can easily buy the product online this side will be eco-friendly, It's help to find the right product on this website, if the user dislike the product he can gives review on it before buy the product or after bought the product .user also can spend money on useful product.

The websites are built using web designing languages like HTML, CSS, JavaScript, Bootstrap and PHP. The websites are completely user friendly. Firstly, users are asked to register to the site through their email if they wish to purchase any product available on the site. Only registered users can buy the products.

Admin login to the system using his admin ID and password. Admin will add product to the system. Admin will remove the review which tracked by the system as fake. User will login to the system using his user ID and password. User will view product. User can post review about the product. If the system finds a review is fake it will inform the admin to remove the fake review.

User who has purchased the product can review it. However, the product manufacturers can take

advantage of this fact and can post multiple good reviews of their product to promote it and make it popular. But, the product would be very bad. This results fake reviews. To tackle this situation, our system tracks the IP address of the user submitting the review of the product.

The main purpose of the project is to identify and remove fake reviews and implement product evaluation using opinion mining. So, the functionalities and features of the online shopping site are limited but user friendly.

VI.   Tools Used For Implementation

XAMPP tool – We are used this tool for provides Apache local server and integrated MySQL database it will temporary provide the local server to us.

Then we are a used Web programming language that is HTML, CSS, JavaScript, and Bootstrap – for the purpose of build websites, HTML, CSS or Bootstrap for the front-end and JavaScript has used for the animation or simplified the work. PHP used for server side scripting language.

It will helps to tracking the IP address of user, if they will fake. It will also help to find out the location of user.

VII.   Advantages

1. The user or customer can get genuine review for desired product
2. The user can give genuine review only after purchasing the product and give their valuable opinion.
3. Any user can easily find the best product as per requirement and spend money for valuable product.
4. It is completely responsive website for mobile users.
5. It provides transparency between buyer and seller.
6. It is trustworthy system for users.

VIII.   Conclusion

Thus, the website "Fake product review monitoring and product evaluation" serves a trustworthy system which provides user to have genuine reviews for using opinion mining, sentiment analysis, grammerlly and spam detection its helpful for buyers who wants to buy particular products. Since, it does not allows to post fake reviews sellers fills comfortable for selling their product online no misleading will ever happen. Transparency between buyer and seller has been served which leads to make a stronger bond of buyers and seller. Since the website is responsive its runs on mobile devices as well as PCs which makes it more user friendly. The application will do analysis and then post the genuine reviews on genuine product. And user can be sure about the products availability on that application and reviews too.

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