



BLOCKCHAIN-BASED DECENTRALIZED AUTHENTICATION MODELING SCHEME IN EDGE AND IOT ENVIRONMENT

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ABSTRACT: As most of the people require review about a product before spending their money on the product. So, people come across various reviews in the website but these reviews are genuine or fake is not identified by the user. In some review websites some good reviews are added by the product company people itself in order to make product famous this people belong to Social Media Optimization team. They give good reviews for many different products manufactured by their own firm. User will not be able to find out whether the review is genuine or fake. To find out fake review in the website this “Fake Product Review Monitoring and Removal for Genuine Online Product Reviews Using Opinion Mining” system is introduced. This system will find out fake reviews made by the social media optimization team by identifying the IP address. User will login to the system using his user id and password and will view various products and will give review about the product. To find out the review is fake or genuine, system will find out the IP address of

the user if the system observes fake review send by the same IP Address many at times it will inform the admin to remove that review from the system. This system uses data mining methodology. This system helps the user to find out correct review of the product.

Keywords – Fake review removal, data mining, IP Address, HTML, JavaScript, MySQL.

1. INTRODUCTION

The Internet has vastly changed not only the customers perspective on buying online but also the business processes. One could say, there are two worlds: one before ecommerce and one after it. Nowadays, customers prefer buying most products or services through e-commerce or online portals. These e-commerce or online portals have given rise to new techniques for marketing as well as influencing customers decision i.e. reviews. Reviews refer to any view or opinion made about a product or service by an individual usually not associated with the business. The reviews that appear on the website



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are specifically referred to as user generated content (UGC). Reviews present a new way to learn about customer preferences, product quality as well as product's shortcomings. A review left online is a permanent record of that customer's experience; it can be found by anyone and reach a far wider audience than ever before. Today, almost every online portal enables posting reviews, images and expressing our own views about products or services in blogs or forums or dedicated review websites like Zomato, Yelp etc. This user generated content can be used to discover customers' preferences, the strengths and weaknesses of the product, study the market conditions, identify new product launch opportunities and strategize to win from competitors. The easy possibility of monetization using the intelligence obtained from reviews has led to the problem of opinion spam or creation of fake reviews. Companies hire spammers to write undeserving positive reviews to promote their products or negative reviews to destroy the competitor's reputation. Unfortunately, driven by the desire for profit or publicity, fraudsters have produced deceptive (spam) reviews. There are various reasons that motivate people to write a review, like the desire to affect a change in the business, product or service or anger at poor product / service or delight at a great product / service or when a product / service is not as expected. The reason

could also be an inherent desire to help the public, for instance if the customer is an expert in the product and one would want to share the expertise. Before making any decision about the product, one always first checks the reviews about the product or restaurants or services etc. Positive opinions can result in significant financial gains and/or fame for organizations and individuals. This provides a good incentive for creation of review/opinion spam. Fake reviews can be written by a shop retailer, business personnel, or individuals who maintain their online identity. As the reviews have become an important decision-making factor, some business hire experts to write spam right with the objective/ intention to promote their image or damage the competitor's reputation. There can be two types of fake review written for this purpose either forged positive review or undeserving negative review to encourage/discourage the customers from purchasing the product. In this paper, fake review detection has been considered as binary classification problem with the two classes being: fake and genuine. This paper focuses on detecting fake reviews from a set of product reviews by running each review through a set of conditions to determine if the product review is a spam.



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“What other people thoughts are and their thinking” has always been an important source of information for most of us during the decision-making process. Long before awareness of the World Wide Web (www) became widespread, many of us requested our friends to recommend a mixer or to explain who they were thinking to vote for in elections, requested reference letters regarding job applicants from friends, or consulted Consumer Reports to decide what mixer to buy. With the rapid expansion of e-commerce, many products are sold on the Web, and many people are also buying products online. In order to enhance customer satisfaction, requirements and online shopping experience, it has become a common practice for online merchants to enable their customers to suggest opinions on the products that they have purchased. With more and more common users becoming comfortable with the Web, a growing number of people are writing reviews and posting them which are becoming beneficial for others. As a result, the number of reviews that a product receives grows rapidly. Some popular products can get hundreds of reviews at some large merchant sites. And our application will give you the promising reviews by filtering them from other sites. And then you can decide what you want to buy or not.

2. LITERATURE REVIEW

[1] an analysis of the main review- and reviewer-centric features that have been proposed up to now in the literature to detect fake reviews, in particular from those approaches that employ supervised machine learning techniques. These solutions provide in general better results with respect to purely unsupervised approaches, which are often based on graph-based methods that consider relational ties in review sites. Furthermore, this work proposes and evaluates some additional new features that can be suitable to classify genuine and fake reviews.

[2] Mining of opinions from product reviews, forum posts and blogs is an important research topic with many applications. However, existing research has been focused on extraction, classification and summarization of opinions from these sources. An important issue that has not been studied so far is the opinion spam or the trustworthiness of online opinions.

[3] This paper proposes three types of new features which include review density, semantic and emotion and gives the model and algorithm to construct each feature. Experiments show that the proposed model, algorithm and features are efficient in fake review detection task than traditional method based on content, reviewer info and behaviour.



[4] This paper focuses on the detection of deceptive opinion spam. A recently proposed opinion spam detection method which is based on n-gram techniques is extended by means of feature selection and different representation of the opinions. The problem is modelled as the classification problem and Naïve Bayes (NB) classifier is used.

[5] We analyse the characteristics of fake reviews firstly. Based on review contents and reviewer behaviours, six-time sensitive features are proposed to highlight the fake reviews. And then, we devise supervised solutions and a threshold-based solution to spot the fake reviews as early as possible

3. METHODOLOGY

Behaviour feature based study focuses on the reviewer that includes characteristics of the person who is giving the review. Addressed the problem of review spammer detection, or finding users who are the source of spam reviews. People who post intentional fake reviews have significantly different behaviour than the normal user. They have identified the following deceptive rating and review behaviours. Deceptive online review detection is generally considered as a classification problem and one popular approach is to use supervised text classification techniques. These techniques

are robust if the training is performed using large datasets of labelled instances from both classes, deceptive opinions (positive instances) and truthful opinions (negative examples). Some researchers also used semi-supervised classification techniques. However supervised method has some challenges to overcome.

Limitations:

- Assuring of the quality of the reviews is difficult.
- Labelled data points to train the classifier is difficult to obtain.
- Human are poor in labelling reviews as fake or genuine.

Now any people can write any opinion text or review, this can draw the individual's attention, and organizations to give undeserving spam opinions to promote or to discredit some target products. So there is a need to develop an smart system which automatically mine opinions and classify them into spam and non-spam category. Proposed opinion spam analyser will automatically classify user opinions into spam or non-spam. This automatic system can be useful to business organization as well as to customers. Business organization can monitor their product selling by analysing and understand what the customers are saying about products. 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.

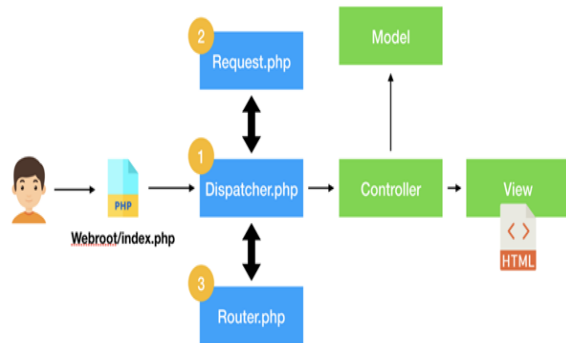


Fig.1: System architecture

MODULES:

The system comprises of 2 major modules with their sub-modules as follows:

1. Admin Login: Admin login to the system using his admin ID and password.

- Add product:
 - Admin will add product to the system.
- Delete Review:
 - Admin will remove the review which tracked by the system as fake.

2. User Login: User will login to the system using his user ID and password.

- View product:
 - User will view product.
- Post Review:
 - User can post review about the product.
- Tracks IP Address:
 - If the system finds a review is fake it will inform the admin to remove the fake review.

4. IMPLEMENTATION

5. EXPERIMENTAL RESULTS

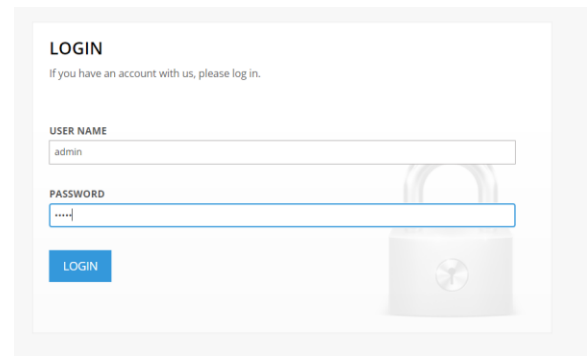


Fig.2: Admin login

LOGIN
If you have an account with us, please log in.

USER NAME
aditya

PASSWORD
.....

LOGIN

Fig.3: User login

SNO	ID	Name	Price	Manufacture	description	Type	Image	Reviews	Delete
1	4	laptop	8000	asus	gaming laptop	laptop		reviews	Delete
2	5	Headphones	700	RedGear	gaming headset	Headphones		reviews	Delete
3	6	tablet	3000	samsung	tablet	tablet		reviews	Delete

Showing 1 to 3 of 3 records

Fig.6: Products list (admin)

Register Here

USER NAME

PASSWORD

NAME

MOBILE

ADDRESS

EMAIL

REGISTER

Fig.4: registration page

SNO	UserName	Name	Mobile	Email	Address	Update Status
1	aditya	aditya	1234567890	aditya@aditya.com	hyderabad	Block user
2	hari	hari	7890123456	hari@gmail.com	hyderabad	Block user
3	raju	raju	9988776655	info@voicemailtechnologies.com	Dilsuknagar	Block user
4	srinu	srinu	9988776655	nagasrinu482@gmail.com	hyderabad	Block user
5	venu	venu	9874562310	venu@gmail.com	hyderabad	Block user
6	vivek	vivek	123456	vivek@gmail.com	hyderabad	Block user

Showing 1 to 6 of 6 records

Fig.7: Users list (admin)

Add Product

NAME

PRICE

MANUFACTURE

DESCRIPTION

TYPE

ADD PRODUCT

Fig.5: Add products page (Admin)

ID	Name	Price	Manufacture	description	Type	Image	Reviews	Select
8	OLED TV	60000	lg	smart tv	television		reviews	Buy

Fig.8: View products and their reviews (user)

SNO	Name	Product	Review	Rating	Date	Delete Review	Block User
1	rgu	3	hey! your product is very bad 1 1 1 1	5	2022-12-20 18:01:24	delete review	block user
2	rgu	5	hey! your! product is very bad 2 0 1 1 1	5	2022-12-21 08:27:48	delete review	block user
3	aditya	7	hey! product you yours very! bad! 4 1 1 1 0	5	2022-12-21 09:56:24	delete review	block user

Fig.9: List of all spam reviews (admin)

6. CONCLUSION

From our work we have come to a conclusion that finding the opinion spam from data has become an important research problem. But still no algorithm can resolve all the challenges and difficulties faced by today's generation.

It is very important to consider certain quality measures like helpfulness, usefulness and utility while analysing each review.

Our 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.

7. FUTURE SCOPE

In future we can make this system to bring down the workload with the increased efficiency and to speed up all activities.

In future we would try to improve the method of calculating the sentiment score of the reviews. We would also try to update our dictionary containing sentiment word.

We would try to add more words in our dictionary and update the weights given to those words to get more accurate calculated score of the reviews.

A direction for future research is to implement the system and check performance by applying proposed approach to various benchmark data sets.

The main objective of our work is to create a system which will detect spam and redundant reviews and to filter them so that user correct knowledge about the product.

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