AN IDENTIFICATION OF SHILLING ATTACK FOR FAKE PRODUCT REVIEW

Abilash P,
Master of computer Application,
Dhanalakshmi Srinivasan Engineering College,
Perambalur-621212

Prof. Sowmiya S.R,
Master of computer Application,
Dhanalakshmi Srinivasan Engineering College,
Perambalur-62121

ABSTRACT

Recommender systems are highly vulnerable to shilling attacks, both by individuals and groups. Attackers who introduce biased ratings in order to affect recommendations, have been shown to negatively affect collaborative filtering (CF) algorithms. Previous research focuses only on the differences between genuine profiles and attack profiles, ignoring the group characteristics in attack profiles. In this paper, we study the use of statistical metrics to detect rating patterns of attackers and group characteristics in attack profiles. Another question is that most existing detecting methods are model specific. Two metrics, Rating Deviation from Mean Agreement (RDMA) and Degree of Similarity with Top Neighbors (DegSim), are used for analyzing rating patterns between malicious profiles and genuine profiles in attack models. Building upon this, we also propose and evaluate a detection structure called RD-TIA for detecting shilling attacks in recommender systems using a sta- tistical approach.In order to detect more complicated attack models, we propose a novel metric called DegSim' based on DegSim. The experimental results show that our detection model based on target item analysis is an effective approach for detecting shilling attacks.

INTRODUCTION

Recommender systems have become an effective tool to recommend movies, music, news, books, research articles, social tags, and other items, and have played an important role in many popular websites, such as Amazon, YouTube, Netflix, and Yahoo!. Recommender sys- tems predict a rating or preference that a user would give to an item. In general, recommender systems produce recommendations using two approaches [1, 2]. The first approach is collabo- rative filtering (CF). CF approaches typically build models from a user's past behaviour coupled with similar decisions made by other users.

This is then used to build a model to predict items or ratings for items that a user may be interested in. The second is content-based filtering, which uses the characteristics of an item to recommend additional items with similar proper- ties. A key advantage of recommender systems using a CF approach is that it does not rely on the ability of the algorithms to analyse its content and thus is capable of recommending a variety of items, such as movies, without requiring a deep understanding of the content of the item itself [3, 4]. In contrast, by using a content-based filtering approach we may need addi- tional information such as genre and actors. CF based recommender systems compare the col- lected data from a user to similar and dissimilar data collected from other users and calculates a list of recommended items for the user.

EXISTING SYSTEM

In recent years, online reviews have been playing an important role in making purchase decisions. This is because; these reviews can provide customers with large amounts of useful information about the goods or service. However, to promote factitiously or lower the quality of the products or services, spammers may forge and produce fake reviews. Due to such behavior of the spammers, customers would be mislead and make wrong decisions. Thus detecting fake (spam) reviews is a significant problem. Dictionary-based methodologies are valuable when a brilliant word reference is accessible that is important to the specialist or expert. One prominent kind of Dictionary is a sentiment dictionary which can be utilized to survey the sentiment of a given content via hunting down words that depict influence or conclusion. A portion of these word references are made by analyzing contrasting content based assessments of items in online gatherings to appraisals frameworks. Others are made by means of methodical perception of individuals composing who have been prepared to expound on various feelings.

DISADVANTAGE

- Fake reviews may be more now a days in e- commerce website
- The fake reviews are not identified by anyone

PROPOSED SYSTEM

Our research show that it is possible to detect spam comments with the proper selection of features which can capture different characteristics of legitimate comments in order to differentiate them from spam comments entered by the spammers. Initially, a particular dataset is used for identifying and differentiating the good and the bad reviews with the help of keywords mostly used for the reviews and then, the input from a user is selected for detecting the spammed reviews. After the selection, the product is reviewed for spam detection. Spam detection technique using pattern transaction algorithm is used to

check for spam in the reviews and such reviews are differentiated using the decision tree and the spam reviews are detected. After detecting the spam, the spam content is separated from the legit reviews and then, the spam content is analyzed so as to ensure the nature of the spam. System controller is used to detect the fake spam which is to be deleted by the admin later on in the process. After the process the users can view the final set of legit reviews for buying their favored products from the website.

ADVANTAGES

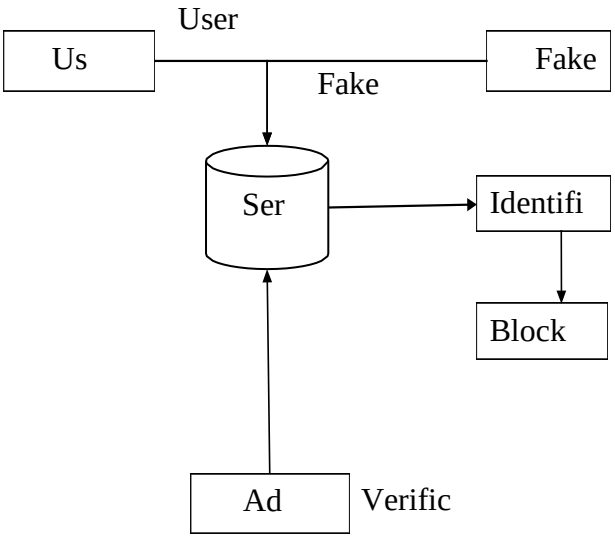
- The spam reviews are get identified using this system
- The reviews are get eliminated and the user is blocked

SYSTEM ARCHITECTURE

A system architecture or systems architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system. System architecture can comprise system components, the externally visible properties of those components, the relationships (e.g. the behavior) between them. It can provide a plan from which products can be procured, and systems developed, that will work together to implement the overall system.There have been efforts to formalize languages to describe system architecture, collectively these are called architecture description languages (ADLs).

Various organizations define systems architecture in different ways, including:

- An allocated arrangement of physical elements which provides the design solution for a consumer product or life-cycle process intended to satisfy the requirements of the functional architecture and the requirements baseline.
- Architecture comprises the most important, pervasive, top-level, strategic inventions, decisions, and their associated rationales about the overall structure (i.e., essential elements and their relationships) and associated characteristics and behavior.
- If documented, it may include information such as a detailed inventory of current hardware, software and networking capabilities; a description of long- range plans and priorities for future purchases, and a plan for upgrading and/or replacing dated equipment and software.



MODULE DESCRIPTION

MODULES

- User registration and login
- Retailer add product
- Add reviews
- Transactional Pattern Matching
- Block user

User registration and login

The user will have a separate registration and login so that they can easily buy the details. Here the user separate details can be easily identified where the user details and the login will be provided with the username and password. The user password and username creates an account.

Retailer add product

The retailer will add the product in the website where the user wants to buy. There will be many retailers where they wish to sell the product using the implemented website system. The system can be added for user wish product.

User buy product and Add reviews

The user will buy the product and then they will add the reviews. But some users will add unwanted fake reviews about the retailer products. The user will add the reviews according to the product they buy. This helps the user to identify about the product and then other user can buy the product.

Transactional Pattern matching

The transactional pattern matching technology systems the patterns are get analyzed. The analyzed data will be used with the analyzing of the transactional pattern which is used in the developed system the user can made the analyzing the recent login comments made and so on. So the fake reviews can be analyzed. The transactional pattern matching system can be added with each level of pattern identified.

Block User

If the user analyzed as fake or spam user then the user can be blocked from the website system. The user can be known as the spam user and the user review will be deleted by the admin using automation system

CONCLUSION

Thus the identification of the fake reviews are get known with the implemented system.The fake

reviews can be identified with the transactional patterns where the easiest way of identification is done.The fake review prediction can help the retailers to sell good product and the user to buy good product from the website.

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