Detecting False Users In Online Rating & Secure Reputation

Mr.Shankar Nayak Bhukya
Associate Professor
Dept. Of Information Technology
Swami Vivekananda Institute Of Technology,Sec-Bad

Mr.M.Chaitanya
Btech Final Year Student
Dept. Of Information Technology Line Swami Vivekananda Institute Of Technology,Sec-Bad

Ms. N Sri Nidhi
Btech Final Year Student
Dept. Of Information Technology Line Swami Vivekananda Institute Of Technology,Sec-Bad

Ms.N.S.Tanuja
Btech Final Year Student
Dept. Of Information Technology Line Swami Vivekananda Institute Of Technology,Sec-Bad

Abstract:
Reputation systems provide mechanisms to produce a metric encapsulating reputation for a given domain for each identity within the system. These systems seek to generate an accurate assessment in the face of various factors including but not limited to unprecedented community size and potentially adversarial environments. We focus on attacks and defense mechanisms in reputation systems. We present an analysis framework that allows for general decomposition of existing reputation systems. The assessment of credibility and reputation of contractors in online shopping portal or e-commerce is the key issue in providing reliable environment for customer-to-customer e-commerce. Confident reputation rating system is an important factor in managing risk and building customer satisfaction. Unfortunately, most online shopping portal sites employ a very simple reputation rating scheme that utilizes user feedbacks and comments issued after committed auctions. Such schemes are easy to deceive and do not provide satisfactory protection against several types of fraud. So we propose an anomaly detection technique for finding unfair recommendation in online shopping portal

1. INTRODUCTION

Online purchasing is not entirely a new concept to grasp. It has been lingering in the background ever since the Internet was commercially available to the public. Many companies have utilized the Internet as a channel for fashion retail marketing (Murphy, 1998), such retailers as Gap clothing.

A. Introduction to Online Shopping

With popular trends and demands the concept of the Internet as the way forward to increase profit margins, companies new and old are creating websites here and there.

The significance for retailers to having a web site is that a web site is informational and transactional in nature (Murphy, 1998). As the web site can be used for advertising and direct marketing; sales; customer support and public relations.

Significantly according to a study by McKinsey & Company and Salomon Smith Barney, E-tailors who sell to their customers through catalogues; stores, and online significantly emerge victorious amid the e-tail shake out (Pastor, 2000).

With seasonal events and holidays, the Internet has become a tool for a quick and stress free method of shopping. Allowing retailers to cash in the profit from another useful shopping channel.

Jupiter Research expects 2003's online holiday sales to be led by new shoppers, resulting in a 21 percent increase over 2002 figures (Greenspan, 2003). The growth in holiday sales is driven by factors such as, online bargains; time saving; avoiding holiday crowds and much more.

The top categories of Online Sales according to com Score Networks, (Freedman, 2002) are:

- Computer Hardware and Software
- Apparel and Accessories
- Office Supplies
- Books, Music and Movies
- Consumer Electronics

- Home and Garden
- Health and Beauty
- Gifting
- Sporting Goods
- Toys and Games
- Autos
- Pets

Freedman argues that as more consumers are able to connect to faster Internet connections categories such as Apparel may experience growth

B.   Project Aims and Objectives

The primary aim of this project is to demonstrate that with better interactive features in clothing web sites could improve sales for online retailers. The objectives of the project are as follows:

- To learn about the Online Apparel Shopping industry.
- To investigate potential problems with Online Apparel Shopping.
- To create a prototype web site focusing on one of the many problems that arises within Online Apparel Shopping.
- To evaluate the prototype with an existing online clothing retailer.

The classic tale of the tortoise and the hare, provided by Freedman, gave the inspiration that Online Apparel Shopping is one the main markets that needs to be tapped in. Freedman's prediction is that, slower starters or early laggards may prove to be some of the strongest categories online long term.

Within this dissertation, facts about Online Apparel Shopping are gathered to demonstrate whether Freedman's prediction is correct.

C.   Dissertation Layout

The layout of this project has been divided into six chapters as follows:

1. **Introduction**
Giving a brief summary of online shopping and also, introducing Online Apparel Shopping. Outlining what this project aims to achieve.

2. **Literature Review**
This chapter has been divided into two parts. The first part explores further about Online Apparel Shopping, where it will outline the current status of the industry and find about the modern e-shopper.

The second part investigates potential issues of the industry. Finding out how this will affect the future e-shopper.

3. **Design and Implementation of Prototype Web site**
Applying a web development methodology to create a prototype web site, where it will

focus on one of the issues that was raised in part two of the literature review.

4. **Testing**
Testing functionality and usability of the prototype web site.

5. **Evaluating**
Evaluate prototype web site with an existing web site.

6. **Conclusions**
The conclusion of what was gained from this project. Future developments in the Online Apparel Industry and what recommendations that present day technology may offer.

2.SYSTEM REQUIREMENTS AND ANALYSIS

2.1 Existing system

- ❖ The existing systems of securing online reputation system falls under four major categories. They are as follows:
- ❖ In the first category, the defense approaches limit the maximum number of ratings each user could provide within certain time duration. Such type of approaches actually restricts the rating power of each user ID. This can prevent the attackers from inserting a large amount of dishonest ratings through a few user IDs within a short time.
- ❖ In the second category, the defense schemes aim to increase the cost of launching an attack.
- ❖ In the third category, the defense approaches investigate rating statistics. They consider ratings as random variables and assume dishonest ratings have statistical distributions different from normal ratings.
- ❖ The defense approaches in the fourth category investigate users' rating behaviors. Assuming that users with bad rating history tend to provide dishonest ratings, such approaches determine the weight of a rating based on the reputation of the user who provides this rating. Such reputation is also referred to as trust or reliability

Disadvantages of Existing System.
- ❖ Time domain
- ❖ Majority rule

2.2 Proposed system

In this work, we propose a reputation defense scheme, TATA. The objective of the proposed scheme is to (1) detect the malicious users who provide dishonest ratings; (2) recover reputation score of the target item, that receives dishonest ratings; and (3) avoid interference to normal items' reputation scores.

We propose a change detector in TATA as the anomaly detector, which takes the rating sequences as inputs and detects changes occurring in the rating

sequences. The proposed change detector will detect not only sudden rapid changes but also small changes accumulated over time. In this way, even if malicious users insert dishonest ratings with small shifts to gradually mislead items' reputation scores, such type of changes will still be accumulated and finally be detected by the proposed change detector.

Advantages of Proposed System
1. Identifies the false users
2. Lists the false users, so based on it, the admin can block the user for further false ratings
3. Recover from false reputations

3. TESTING

3.1 Introduction:
Testing is the process of detecting errors for which the required open web application secure employment portal specifications stated. Testing performs a very critical role for quality assurance and for ensuring the reliability of software. The results of testing are used later on during the software maintenance.

The aim of testing is often used to demonstrate that a program works by showing that it has no errors. The basic purpose of testing phase is to detect the errors that may be present in the program. Hence one should not start testing with the intent of showing that a program works, but the intent should be to show that a program doesn't work. The main objective of testing is to uncover an error in systematic way with minimum effort and time.

Levels of testing
In order to uncover the errors present in different phases the different levels of testing are:
- System Testing
- Function testing

TYPES OF TESTS

Unit testing
Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

Integration testing
Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

Functional test
Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.
Functional testing is centered on the following items:
Valid Input : identified classes of valid input must be accepted.
Invalid Input : identified classes of invalid input must be rejected.
Functions : identified functions must be exercised.
Output : identified classes of application outputs must be exercised.
Systems/Procedures: interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

System Test
System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

White Box Testing
White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

Black Box Testing
Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot "see" into it. The test provides inputs and responds to outputs without considering how the software works.

3.2 Unit Testing:

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

Test strategy and approach

Field testing will be performed manually and functional tests will be written in detail.

Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

3.3 INTEGRATION TESTING

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

3.4 Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

CONCLUSION

Many schemes have demonstrated very good performance in protecting reputation systems; there are still limitations that are not fully addressed. In this paper, a comprehensive anomaly detection scheme(TATA) is designed and evaluated for protecting feedback-based Online reputation systems. TATA demonstrates significant ad-vantages in terms of identifying items under attack, detecting malicious users who insert dishonest ratings, and recovering reputation scores. To analyze the time-domain information, revised-CUSUM detectors developed to detect change intervals. Online reputation systems are increasingly influencing people's online purchasing/downloading decisions. And thus the project has been implemented successfully based on the TATA reputation system.

REFERENCES

[1] Press Release: Online Consumer-Generated Reviews Have Significant Impact on Offline Purchase Behavior, Nov. 2007 [Online]. Available: http://www.comscore.com/press/release.asp?press=1928

[2] R. Lee and H. Paul, Use of Online Rating Systems Oct. 20, 2004 [On-line]. Available: http://www.pewinternet.org/Reports/2004/Use-of-Online-Rating-Systems.aspx

[3] ComScore, Final Pre-Christmas Push Propels U.S. Online Holiday Season Spending Through December 26 to Record $30.8 Billion Dec. 29, 2010 [Online]. Available: http://ir.comscore.com/releasede-tail.cfm?ReleaseID=539354

[4] Buy iTunes Ratings and Comments—Increase iTunes Sales and Downloads [Online]. Available: http://www.youtube.com/watch?v=-TWV4XaxCo

[5] A. Whitby, A. Jøsang, and J. Indulska, "Filtering out unfair ratings in Bayesian reputation systems,"Icfain J. Manage. Res., vol. 4, no. 2, pp. 48–64, Feb. 2005.

[6] P. Laureti, L. Moret, Y.-C. Zhang, and Y.-K. Yu, "Information fil-tering via terative refinement,"Europhys. Lett., vol. 75, no. 6, pp. 1006–1012, 2006.

[7] Y.Liu andY.Sun,"Anomalydetection in feedback-based reputation systems through temporal and correlation analysis," inProc. 2nd IEEE Int. Conf. Social Computing, Aug. 2010, pp. 65–72.

[8] Y. Yang, Q. Feng, Y. Sun, and Y. Dai, "Reputation trap: A powerful attack on reputation system offile sharing p2p environment," inProc. 4th Int. Conf. Security and Privacy in Communication Networks,Is-tanbul, Turkey, Sep. 2008.

[9] M.Abadi,M.Burrows,B.Lampson,andG.Plotkin,"A calculusfor access control in distributed systems,"ACM Trans. Program. Lang. Syst., vol. 15, no. 4, pp. 706–734, 1993.

[10] H. Yu, M. Kaminsky, P. B. Gibbons, and A. Flaxman, "Sybilguard: De-fending against sybil attacks via social networks," inProc. 2006 Conf. Applications, Technologies, Architectures, and Protocols for Computer Communications, 2006, pp. 267–278.

[11] J. Weng, C. Miao, and A. Goh, "An entropy-based approach to pro-tecting rating systems from unfair testimonies,"IEICE Trans. Inf. Syst., vol. E89-D, no. 9, pp. 2502–2511, Sep. 2006.

[12] A. Jøsang and W. Quattrociocchi, "Advanced features in bayesian rep-utation systems,"TrustBus, pp. 105–114, 2009.

[13] C. Dellarocas, "Immunizing online reputation reporting systems against unfair ratings and discriminatory behavior," inProc. 2nd ACM Conf. Electronic Commerce, 2000, pp. 150–157.

[14] J. Zhang and R. Cohen, "A personalized approach to address unfair ratings in multiagent reputation systems," inProc. Fifth Int. Joint Conf. Autonomous Agents and Multiagent