



SECURE ONLINE AUCTION (E - COMMERCE)

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ABSTRACT

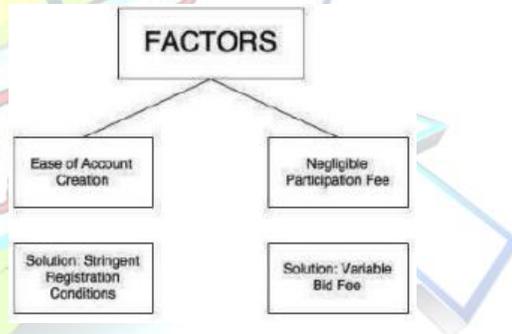
The goal of this project is to develop an anti-shilling module which would lie between the Presentation layer and the Data layer. In Online auctions, shill bidding is the hardest type of frauds to deduct as any user can easily register in an auction system under a false identity to bid on his own selling or buying items. An honest bidder, unaware of the fact that the increased bid was by another honest bidder or by a shill bidder, bids more and thus is trapped in a vicious cycle of bids in order to win the auction. The seller may achieve this by creating fake accounts or by colluding with other sellers to form a group. In even more worse scenarios, multiple users can form a group to bid on each other's items under the regulations of online auction. So it is necessary to develop an anti-shilling module to protect the users from the presence of shill bidders. The anti-shilling module will monitor, detect and prevent shilling during the auction with the help of factors like bidding behavior, validation and tracking. With this anti-shilling module, trust and reliability is ensured for online auctions.

1. INTRODUCTION

Online auctions are the most popular trading mechanisms in e-commerce. Auctions allow buyers and sellers to purchase and sell products

in an efficient way. Online auction frauds into six different categories: non-delivery of goods, item misrepresentation, triangulation, fee staking, selling of black-market goods, multiple bidding and shill bidding. Shill bidding is the hardest type of frauds to detect because any user can easily register in an auction system under a false identity to bid on his own selling or buying items. The proposed system detects shilling during the auction running time by using different bidding behavior detection and IP tracking techniques.

colluding with other sellers to form a group. A group of shill bidders is formed in order to avoid easy detection of shill bidding. On the contrary, a single shill bidder account may catch even the naive bidder's attention if the bid history is analyzed carefully.



The major characteristics of shill bidders that help identify them from honest bidders are:

1. Minimum increment in the bid price
2. Shill bidder aims to lose an auction
3. Minimum inter-bid interval time
4. Bid Frequency and Interaction with

the Seller Factors Encouraging Shill Bidding :

1. Ease of multiple accounts creation.
2. Negligible or minimal participation fee.

11. RELATED WORK

Shill bidding is an online auction fraud technique in which the seller tries to manipulate bidders into bidding more than they would have in a normal auction

scenario, thus eventually increasing the selling price of the item. A shill bidder manipulates the honest bidders by bidding higher than them. An honest bidder, unaware of the fact that the increased bid was by another honest bidder or by a shill bidder, bids more and thus is trapped in a vicious cycle of bids in order to win the auction. The seller may achieve this by creating fake accounts or by



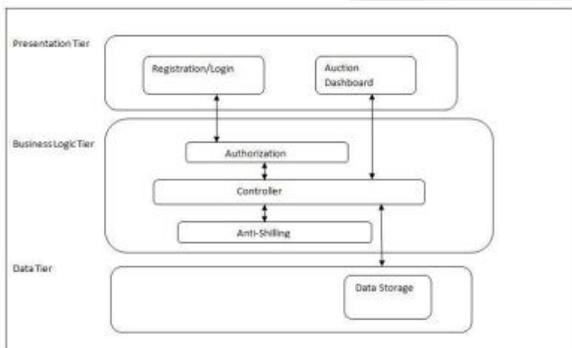
111. PROPOSED WORK

Shilling behavior tracking during the online auction is one way of preventing the Shill Bidding. However Shill Bidders would more often change their Way of Bidding a Product. So behavior tracking alone will not be able to prevent the Shill bidding in the E-commerce Platform.

So the Proposed model for our Project is to develop an anti-Shilling Module which would lie between the application layer and the database layer.

The logic behind this module would be many aspects and factors such as

1. The Registration Validation
2. IP-address tracking
3. Shilling behavior



IV. EXPERIMENT

a) Registration/Log-in (Authorization)

Registration module is the user interface module for the bidders to create an account in order to bid.

b) Auction Dashboard

This is the module where all the current and recently concluded results of the biddings will be displayed to the bidders.

c) Auction Controller

AC works as the brain of the whole system. It transmits and processes all the actions made by users in the application layer. This component

makes the final decision of acceptance or rejection of the user's registration based on the reports from SM, AM and ScM.

d) Status Module

SM assigns a wide range of different statuses to any seller and buyer based on three metrics: UsingPeriod(UP), UsingManner(UM) and Shilling Attempt(SA).

Users are categorised as

1. New User
2. Trusted User
3. Most Trusted User
4. Untrusted User
5. Most Untrusted User
6. Average User

e) Authorization

Authorization module deals with registration, sign-in, bidding and procurement. Based on the registration information of the user, Authorization checks for the validity of the data.

f) Security

Bidding Behavior Tracking:

The Bidding Behavior Tracking (BBT) module calculates the score, ranging from 0 to 5, from the following five signs. Each sign is assigned a value of 1 for a positive result of shilling behavior and 0 for a negative result.

1. Multiple Bids Detection
2. Bidding Time Detection
3. Bidding Stopping Time Detection
4. Outbidding time detection
5. High Bidding Frequency Detection

g) IP Tracking:

ScM gets the IP address of a user and checks if



multiple users are using the auction system from the same address. ScM also checks whether different user ids are acting as a buyer or seller on the same auction from the same IP address. A combination of three methods is considered to detect a bidding user address: Packet Header Learning Technique, IP Traceback, and DHCP Origin Traceback.

h) Data Storage

The data layer maintains all the information and history of users and auctions, such as auction starting time, ending time, bidding time, bidding price and bidding history of every user.

V. Algorithm

Explanation Skill Score

algorithm:

Its main focus is on detection of shill bidding. Based on the analysis of the behaviour of an individual shill bidder

or a collusive shill bidding techniques, formulae have been devised to calculate the shill score that assists in the identification of shill bidding accounts.

V1. CONCLUSION

Fraudulent activities like shill bidding damage the reliability and reputation of online auctions. So with this project, the intensity on the need of an anti-shilling system will be highlighted and the methodologies to make sure that the online auctions are safest will be put in place.

V11. FUTURE WORK

Auction fraud has become one of the major concerns in electronic commerce. Volume of transactions in online auctioning business is compounding each year. In future work, different pricing schemes can be explored to improve the effectiveness of our shill bidding prevention mechanism.

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