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Monitoring suspicious communication on online forum

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Abstract

Forum is a huge space where people from different geographical location can express and share their own opinions, influencing any aspect of life by marketing and communication. On one side, Monitoring suspicious communication on these forums is the best way to measure the loyalty of users. On the other side, Many malicious people use these discussion forums for illegal purpose by posting suspicious chats in the form of text, video or images, exchange them with other users. The law enforcement agencies are looking for solutions to monitor these communication forums for possible criminal activities. Mostly the data stored in chat forums are in the form of text, so the proposed system will focus only on text posts. Considering this scenario, I propose a system which tackle this problem. Monitoring the malicious activities is the best way to calculate the user's honesty, keeping a track of their sentiment toward their chats. The exponential advancement in information and communication technology has fostered the creation of new online forums for many online discussions and has also reduced a distance between people. In online forums the user produce various formats of malicious post like text, image, video, gif and exchange them online with other people.

Keywords: Monitoring suspicious communication, own opinions, marketing and communication

1. Introduction

In recent days people are addicted to the social media like anything. It has become the part and parcel of our life ^[1]. We have started using it as a live platform to express our feeling, opinion, promotions of the current events on any topics. Fraud and misguided people don't have any space to spread criminal activities and social media is one of the popular medium of them. Data mining and data analysis is the technique by which we can keep eyes on social media. The process comprises of mainly four steps administrators, keywords, users, and view. Module description administrator is responsible to input suspicious keywords into the system to catch the illegal activity over the web ^[2]. There exists a large amount of information being stored in the electronic format. With such data it has become a necessity, means that could interpret and analyze such data and extract the facts that could help in decision making. Datamining which is used for extracting hidden information from huge database is a very powerful tool that is used for this purpose. A huge amount of information exists in form of text in various diverse areas whose analysis can be beneficial in several areas. A system that can effectively monitors multiple chats going on and alarm the administrator about some suspicious chat process. A system where manager can monitor the whole system. Suspicious chat can detect based on keywords secure including control chat. Monitoring suspicious communication on the online forum is best way to measure the loyalty of users by keeping the eye on their everyday messages while it facilitates it is suspicious text or not ^[3]. This paper present how to monitor suspicious discussions on online forums. I can detect the suspicious message while two users are communicating to each other which will further assist in developing more refined and reliable techniques for detecting these activities. In this system to detect suspicious in chatting system the user just send and receive the messages to and from other users but cannot monitor like the admin ^[4]. In this system the admin is able to see chat of users without knowledge of users and the admin is responsible for controlling the suspicious conversation between users ^[5]. The system is designed that admin and users are must register their first in order to access the system and admin should have valid account to control and avoid from happening of suspicious.

Motivation

Generally, the concept of Text mining has become the significant and trending research area

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and it the discovery of new previously unknown information by automatically extracting information from different written resource ^[6]. Text mining extracts the quality information highly from the text. As most information stored as text, text mining is believed to have high commercial potential value. Text mining is the task of extracting meaningful information from text which has gained significant attention in recent years. The text mining studies are gaining more importance recently because of the availability of the increasing number of electronic exchanging conversation from variety of users that include legal and illegal messages. With the expanding utilization of chat messengers to share dubious information exercises have likewise expanded. There are numerous sources to share data but chat messengers and social communication sites are brisk and simple intends to share anything. At times even new stories are at first separated via web-based networking media destinations and further on visit envoys rather than any news channel. A few people are abusing these moment talk detachments to share dubious exercises and make arrangements to accomplish something dubious ^[7]. Moreover, This sort of visit is essentially accessible in textual design. With the progression of web innovation and the adjustment in method of correspondence, it is discovered that much direct news has been talked about in web discussions a long time before they are accounted for in customary broad communications. Likewise, this correspondence station gives a powerful station to criminal operations, for example, communicating of copyrighted motion pictures, threatening messages and web based betting. Our proposed framework will break down online plain content source from observing dubious conversation on online discussions and will perceive the content is dubious or not thus, the framework will choose which chat is legitimate and illicit ^[8].

Proposed System

Our proposed system functionality is to analyze online text sources from selected discussion forums and compared the text with suspicious words, additionally, the system decide which chats are legal or illegal. Moreover, The system ensure that admin may not watch all the chat at a time, so to stop illegal chat the alarms are set by the admin as suspicious words which will be informed or it cannot be able to view by the other person.

Tools and technologies used

It is important to know what are all the tools and technologies used to implement the system, they are discussed below ^[5]:

- The system environment implementation is windows 7 or above;
- Front end technologies that used for designing the system are HTML5, CSS, JavaScript and ASP.net;
- Integrated Development environment (IDE) is visual studio 2010;
- Back end technology is used for developing the system is Microsoft SQL server.

Functional requirements of system

The function that system is required to perform as follow

- **Message:** the user can chat with each other by the system we can discover the suspicious or genuine chats ^[9].

- **Login:** users are required to provide username and password to authenticate so that they can start chat, but to seek or display the chat logging in is required.
- **Contact:** users are asked to provide feedback or report issues through the contact module so that the issues can be resolved faster possible.

Non-functional Requirements

The non-functional requirements of the system as follow Performance

- System shall give response faster possible;
- System must support a multi user environment;
- System must compare the text with the suspicious words in the database and find out it is genuine or suspicious ^[9].

Availability

- System shall be available all the time;
- Entry screen, messages and responses not be delayed.

Maintainability

- Verify that the entries are of the correct format;
- No duplicate entries should be allowed proper management of slots concerning the task.

Portability

- System shall provide the capability to use store data.

Security

- System shall keep a log of all the errors.

Reliability

- All field entries must work properly and should be accurate assigning of slots to the application.
- All links should take the user to the correct page.

Architecture of the proposed system

The detailed architecture of the system that monitory suspicious words on an online forum for further explained step by step.

Server: Server is a computer, a device or a program that is dedicated to managing network resources.

Client: the client most often located on another system or computer which can be accessed via a network.

Database: is a collection of information that is organized so that it can be easily accessed, managed and updated.

Chat message: allow user to send and receive a free text from a computer. All you need to use send and receive a text is a standard web browser and internet. You can send and receive free text online from computer. No need to sign up every time. First user register their self then by user username and password the user get online to that application then user be able to start a conversation and exchange the information. While sending and receiving the information one user should be the admin user that take care of other user's communication.

Suspicious chat detecting. In this chat box whenever the sender send the text receiver to receive the message if any suspicious word comes during texting the system automatically detect the suspicious words and inform the admin user about those users that they are doing communication.

Suspicious chat detecting

Generally, a great deal of dubious communication occurred over the internet. In addition to this, They additionally utilize these chat applications over the web for getting their message to youthful age and making new fear based oppressors. All things considered, we here propose a web chat application that effectively screens different visits going on and furthermore alert the administrator about any dubious process occurring. The framework is intended to process all information goes through the server it constantly examine it for any dubious watchwords. The administrator may, notwithstanding, keep a watch at any chat that clients wants ^[1]. Furthermore, An exceptional alert is given before the administrator with respect to any dubious chat that is handled at the server. The administrator may now watch that specific chat. This chat screen is a significant application that could take into consideration secure visits alongside dubiously related visit identification that assists track with bringing down the spread of dubious exercises.

Suspicious chat list

The act of suspecting something or someone especially of something wrong or the condition of being suspected ^[6].

Notify admin

An admin of a chat box is a member of that has privileges which include modifying user privileges for other members, inviting and removing members from a messenger and changing member roles. A messenger can have more than one admin ^[2].

System functional test cases

The functional test provides a systematic demonstration that functions tested are available as specified by the technical requirements, system documentation and user manuals. For the proposed system the following test cases are designed ^[9].

Table 1.1: shows the functional test cases and result

S. No	Scenario	Action	Expected result	Actual result	status
1	User login	Enter details and click on login button	Error message for duplicate user login	As expected	Not ok
2	User login	Enter details and click on login button	System should display successful message	As expected	ok
3	Send/ receive	Write message and click getting message from user	System should send and receive message	As expected	ok
4	Send / receive	Write message and click getting message from user	System should not display message	As expected	Not ok
5	Selecting user to send message	Clicking the name of the user	System should select	As expected	ok
6	Selecting user name to receive message	Clicking the of the user	System should display successful message	As expected	ok
7	Signup	Enter valid detail to the system	System should accept message	As expected	ok
8	Online user	Show the system the user is online or offline	System should display	As expected	ok
9	Detecting suspicious words	Enter the suspicious words to the chat box	System should extract suspicious message	As expected	ok
10	Admin	Controlling all users to detect suspicious conversation	System should display message	As expected	ok
11	Signup	Enter same name many time	System should not show error message	As expected	Not ok
12	Logout	Click on logout button	System should logout successfully	As expected	ok

Conclusion

This paper presented that how to reduce the suspicious behaviors of users on the web forums. To monitor suspicious in chatting system the system should analyze plain text and detect suspicious words that send or receive by user of system. I designed a messenger focusing on data mining to reduce the suspicious behaviors of user on the web forums and the system can detect suspicious communications. Whenever, users are communicating to each other and if it is not a normal communication the system can recognize it by comparing suspicious words in the database. If there is match, it will flag the conversation and send to the admin a notification of suspicious conversation. However, sometimes texts on social media can make situations complicated, create panic and as a result the social networking site becomes a platform of anger, happiness and for expressing the feelings and thoughts regarding every matter. So, there is a possibility that sometimes it may create controversy.

Future enhancement

As this paper has come to end, I have noted here some methods that can be implemented in the future:

- Add a feature to detect suspicious words according to the context used;
- Detecting video that are suspicious;
- Detecting images that are suspicious;
- Create a desktop version of the messenger;
- Add a feature to scan any attached file to determine if they are suspicious;
- Incorporate the detection features of this paper into existing chat application.

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