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Real-Time Cyberbullying Analysis on Social Media Using Machine Learning And Text Mining

Mr. Ravindran U[1], Dhinesh Kumar T[2], Dinesh R[3], Marthandavarman V[4], Mohammed SulaimanA[5]

[1]*Assistant Professor, Department of Computer Science Engineering, Kingston Engineering College, Tamilnadu, India*

[2,3,4,5] *UG Scholar, Department of Computer Science Engineering, Kingston Engineering College, Tamilnadu, India*

Abstract *People now-a-days are fond of using internet technology. As internet technology had been increasing more and more. This technology led to many legal and illegal activities. It is found that much first-hand news has been discussed in Internet forums well before they are reported in traditional mass media. This communication channel provides an effective channel for illegal activities such as dissemination of copyrighted movies, threatening messages and online gambling etc. The law enforcement agencies are looking for solutions to monitor these discussion forums for possible criminal activities and download suspected postings as evidence for investigation. We propose a system which will tackle with this problem. In this project we had used a machine learning algorithm to detect criminal activities and abusive conversation. Comments containing abusive words effect psychology of teens and demoralize them. We encounter this with analysing the words that may psychologically affect an individual using Machine Learning Algorithm (ANN) Artificial Neural Network. The predicted bad/abused words are displayed as the censored content. With censoring the abusive/bad words we prevent innocent victims from depressing activities.*

Key Words*:* **Cyber Bullying, Machine Learning, Social Media, Cyber Activities.**

1. INTRODUCTION

Young people today are using the internet more than ever. They view the internet and even more so the mobile phones as positive aspects of our society. The internet and mobile phones system are the two biggest systems of communication which play a crucial role in our daily activities and development of identities. On the other hand, these same technologies are also often used negatively. Many children are the targets of bullying via the internet or mobile phones resulting in total confusion on the part of the "target". Very often, children are not able to understand that what they are going through is a form of bullying. As a result the previously safe environment of the internet is now becoming a source of confusion and anxiety. As of now Social media websites have only given an option of blocking a certain individual who involves in these bullying activities. An offensive comment on posts from strangers affects an individual drastically. We take these problems head on by censoring the offensive contents before it reaches the victim.

1.1 Existing System

The exponential advancement in information and communication technology has fostered the emergence of new channels for online discussion and has also reduced distances between people. Unfortunately, malicious people take advantage of this technological achievement in the sense that they use it for illegal purposes. In social media, the users produce several and various formats of suspicious posts (text, image, video…) and exchange them online with other people. The data in most social media sites are stored in text format, so in this work we will focus only on text posts.

1.2 Drawbacks

The advances in digital and multimedia technology are significantly impacting human behaviours and social interactions. The main idea of our global research project is to develop an automatic system for detecting suspicious profiles in the social media, through which we can uncover suspicious behaviour and interest of users as well.

With the lack of information retrieval analysis from social media retrieval data analysis remain debatable. The existing approach is based on the calculation of a similarity distance to distinguish suspicious posts for detecting suspicious profiles within social media

2. Proposed System

Monitoring Suspicious Discussions on Online Forum by Data- mining. The technique used is data-mining in which few data is extracted from huge amount of data. The system uses text mining to extract suspicious words from entire chat. The system not only provides the forum to chat but also helps to reduce the use of illegal words during chat and provides the database for criminal investigation, if any crime occurred by the person using that forum.

If the system detects the suspicious word in the chat the word is replaced by****** and if this occur twice the particular word is not allowed to pass through and if an individual feel certain words to be in-appropriate he can report back to the admin, Admin will go-through it.

The Social Networking sites are affecting human life. Hence this system successfully detects the suspicious words from chats and prevents the suspicious activities. This system is applicable to every department where there is need. Not only in social networking is sites this system applicable in forest

department, disaster management system to prevent illegal activities. Text mining technology used to detect suspicious words from discussion forum.

3. System Architecture

In this the words are removed after the removal of these words the system updates the database and finds the most repeated frequent words. The outline regression means the statistical analysis of the words

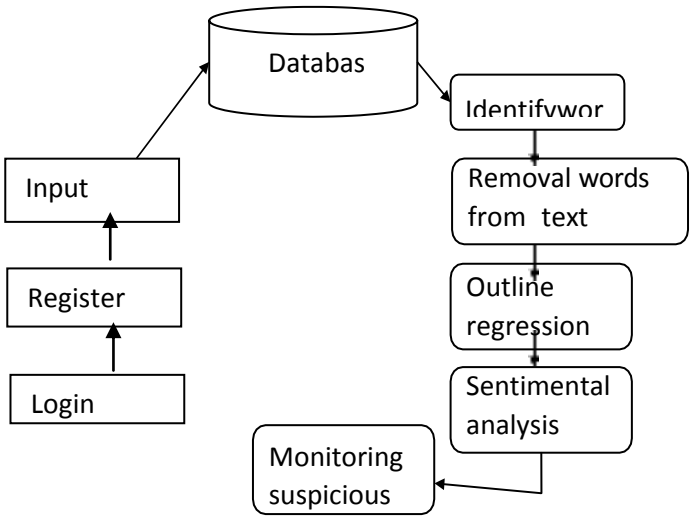

Fig no. 1 system Architecture

3.1 Sentimental Analysis

In this the sentiment analysis of the stop words is done. In this after the statistical analysis of the frequent words, these words are checked and removed with the blank space or asterisks.

3.2 Monitoring Suspicious Discussion

In this the chat is monitored by the removal this un expected or suspicious words and hence we get the chat free from the suspicious words.

4. Data Flow Diagram

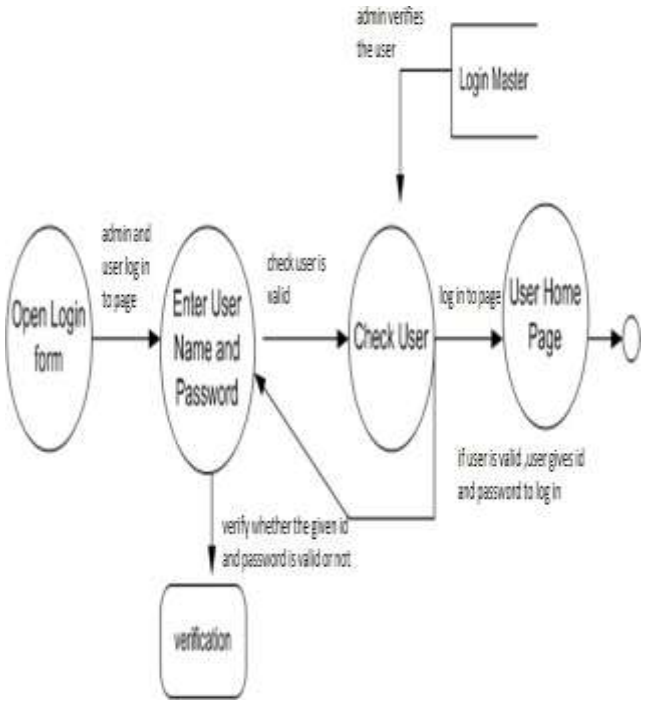

Fig no . 2 Data Flow Diagram

5. Use Case Diagram

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved. A use case diagram can identify the different types of users of a system and the different use cases and will often be accompanied by other types of diagrams as well.

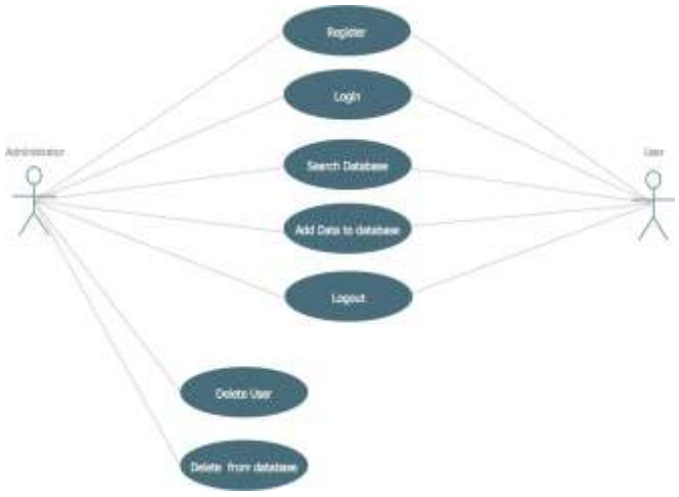

Fig no. 3 Use case Diagram

6. Sequence Diagram

A sequence diagram is an interaction diagram that shows how objects operate with one another and in what order. It is a construct of a message sequence chart.

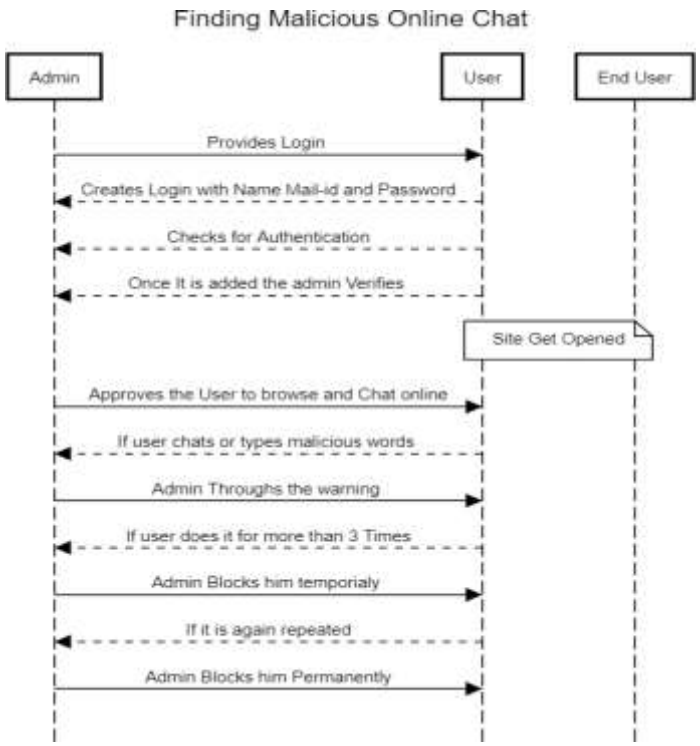

Fig no. 4 Sequence Diagram

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development. Sequence diagrams are sometimes called event diagrams or event scenarios

7. Conclusion

This paper presents a way for detecting suspicious discussions on the online forums, through which we can uncover suspicious activities and interests of users. The purpose of this system is to monitor suspicious discussions on online forum. Machine Learning in Text mining is used to detect suspicious posts in online forums. Also purpose of this paper is to provide a review to mining useful information by means of Data Mining. The procedure of extracting knowledge and information from large set of data is data mining that applying artificial intelligence method to find unseen relationships of data.

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