

# Secure Student Information Sharing System

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**Abstract:** The veil of anonymity provided by smartphones with pre-paid SIM cards, public Wi-Fi hotspots, and distributed networks like Tor has drastically complicated the task of identifying users of social media during forensic investigations. Through social networking people all around the world were able to connect and stay close which helps to keep them being near even when far. There are various online social sites that are available like Facebook, Twitter etc. which brought world closer. These social medias helped us to share our messages and memories and videos, to our close ones but nothing comes without risks. These risks are mainly security and privacy issues, which comes to who else can see them and can access and we should know by now nothing is hidden or secure completely. Apart from all the issues one of the main issues in social media is comments created by users which can be positive and negative depending on the user. But when people post or comment offensive messages on a user profile which may cause a serious problem to user's reputation and morale which can lead to serious consequences. To avoid such kind of serious problem we can apply Information Filtering (IF) technique. Information filtering can be used for formless data in contrast to database application in which data required is in ordered manner. There are various types of Information Filtering methods namely Content-based filtering method, Policy-based filtering method, etc. This system we are filtering the post using both the technique

## 1.Introduction

Messaging was used as a means of communication for centuries and it changed during the time, in the ancient times means of communication were (scrolls, pigeons, smoke-signals etc.) As times went on new means of communication was invented such as telegraph, radio, telephones which made communication much faster but with less reliability. In our modern era technological advancements has led to quick message transmission among users which provided us a portal(internet) to be near with our friends and family even if they are other side of the world, through this portal we were given doorways to multiple social media such Facebook, WhatsApp, Instagram etc.. through these social medias we were given the privileges to express thoughts and share videos and connect with people all over the world in a blink of an eye. With the help of these social networking sites we were able to connect to all corners of the known world. But nothing comes without a risk, in a social media platform threats are looming everywhere, some of the threats we can point out are security and privacy because what we share in a social media to our friends not just seen by them but even others individuals will be also watching and each individual has different views and they can respond either positively or vulgarly. But these vulgar comments can ruin a user reputation as we have seen many incidents before. Social media such as Facebook have provided many securities features such filtering and making message private, but with the recent incidents it was revealed even Facebook is not secure as it states that data loss has occurred in Facebook recently. For this project we will creating a student online portal where the students of a college can interact and share information with the faculty and vice versa, the admin can be the HOD or the class coordinator who will monitor the students who uses vulgar comments or share inappropriate contents and block them. This portal uses a n-gram technique to analyses the sensitive content before it is being posted and will be remove the content before it is being posted and provides a safe environment.

## 2.Scope of the Product

The goal of this system is to prevent the user from posting sensitive data in student portal and gives a statistic to the Admin about the user who is frequently trying to post sensitive messages in the portal. Online portal provides some space or area to post the status such a space is called Wall. But sometimes people post offensive messages on a wall which may cause a serious problem to user's reputation. To avoid such kind of serious problem we can apply Information Filtering (IF) technique.

This system uses N-Gram technique for content-based filtering and Weight-age concept for policy-based filtering method. With the help of these concept this system will detect whether the post contains sensitive data or not.

- Identifying sensitive post and block the post, which avoid unnecessary conflicts in the society.
- Gives Statistic Report to admin regarding which user is trying to post sensitive post frequently.

## 3.Existing System

As we know in any online portal allows user to post the message on wall even if they do not know each other. So, it may cause serious problem to all those users who are active and are affected individually by their social image. As we have seen in any online portal allows users to post comment on another user's wall even when they were unknown to each other. But if that comment is a vulgar one then it may cause serious problem to user reputation. To avoid such a problem Information filtering is used to filter the content of the message

Since some social networking sites do not support content-based filtering approach there is possibility to get vulgar or abusive messages on wall. Online student web portal provides some space or area to post the status such a space is called Wall. But sometimes people post offensive messages on a wall which may cause a serious problem to user's reputation.

## 4. Proposed System

In my proposed system I'm looking to prevent the user who is posting vulgar comments in my online student web portal using the n-gram technique. Here I'm creating a pattern set that contains the set of vulgar words and stored in the database. Once a user put a sensitive data in the portal it checked with the pattern set that I'm created in the admin section, if the word comes below a particular threshold then it should be posted in the wall, otherwise the word and also the user will be blocked. The admin can able to see the statistics of this portal.

## 5. System overview

In the proposed system for secure student information sharing via web portal. Which helps to prevent sensitive data that is placed as a comment in the portal. The process of this software works by creating a database with sensitive keywords and tokenization. The overall control of this portal is under control of admin that can be a student coordinator or HOD of the department. The admin can classify the sensitive words. Each user register in this portal by giving certain requirements. After entering to the portal, the user can able to see the posts and they can comment on it, while they are commenting the word is checked with the sample pattern set that has already placed in the admin database. When the comment is posted it will go through the preprocess stage where the message will be tokenized and analyzed with the sensitive keywords stored in the database. By using the preprocessing algorithm, the system finds the keywords and checked it with bag-of-words, if the word comes under less sensitive it should be posted on the

wall. The n-gram technique contains three levels less sensitive, medium sensitive, highly sensitive. If the data is highly sensitive the post and the user will be blocked. The admin can able to see the users who are active in the portal and the number of users blocked in this portal.

During this process the data that is given by the user will be checked and analyzed to find out how much sensitive information exist in the comment, based on the weightage (small, medium, high) the system will decide to let the send or block the comment. If the weightage is small the comment will be passed but if the data is medium or high it will be blocked.

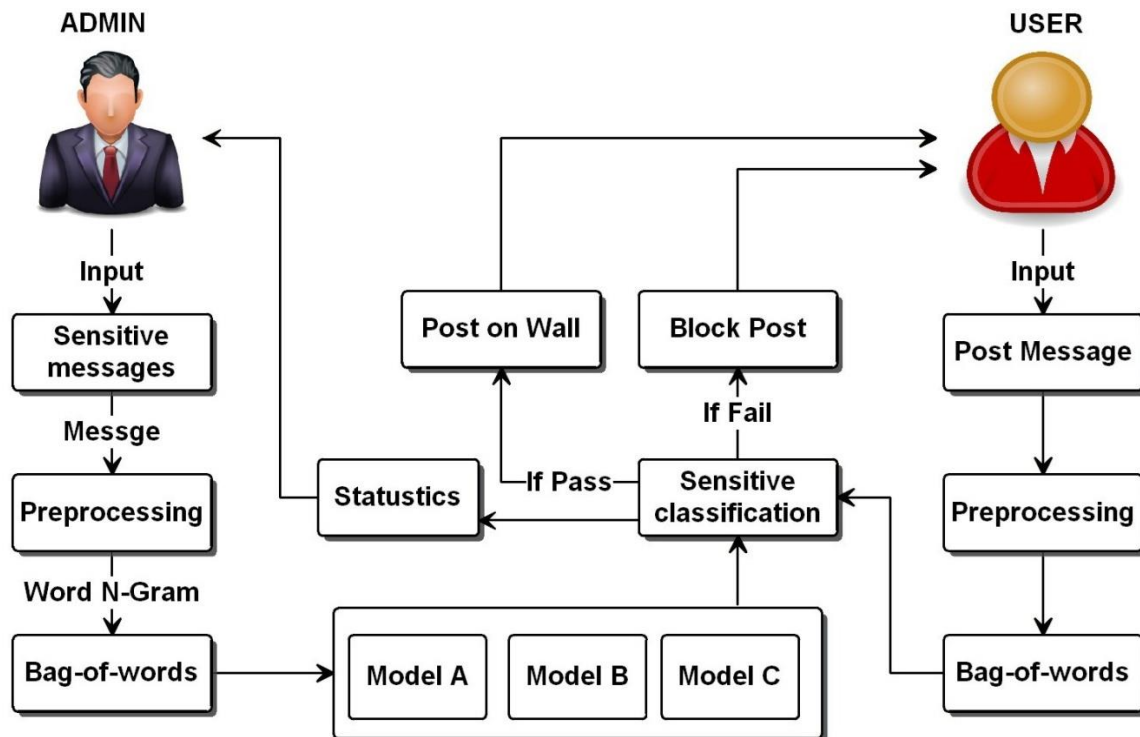


Figure:1 System Architecture [4]

## 6. Project Module Description

- Adding sensitive keywords and weight age

Admin going to add sensitive keywords with weightage, those sensitive keywords is converted n-gram technique. Admin maintaining three types of classification

  - Less sensitive
  - Medium sensitive
  - More sensitive
- Policy Details

In Policy module admin must give sentence and he must select the classification id and store it into m-sentences table. Then for that sentence he is removing the unnecessary words by using pre-processing algorithm after that key data (result) he is doing 'N' gram techniques and based on classification store it into respective sensitive table.
- User Registration

In this module we are going to register the user with basic information.

• Posting Management

In this module, users can post images and comments. In this comments our system removing unnecessary words by using pre-processing algorithm after this technique we are getting the key data (result), for this key data this system doing ‘N’ gram technique and comparing with all sensitive table values if it is matching less sensitive based on that sensitive values this system allowing us to post the comments in user wall and its showing sensitive result to user or if more sensitive this system will block the user.

- Remove unnecessary words
- Pattern Creation
- Filtering Policies

7. Data Flow Diagram

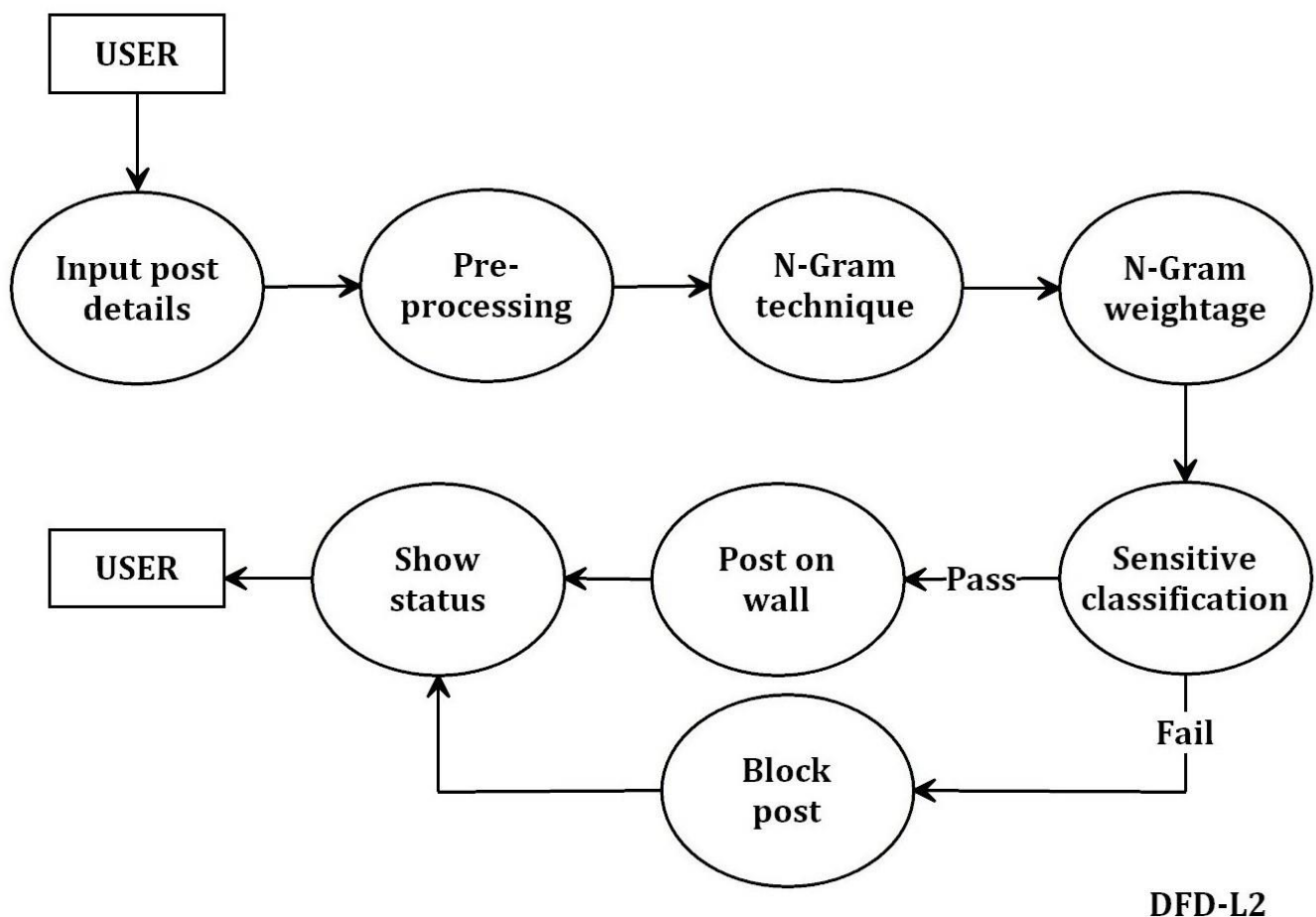


Figure: 2 Data Flow Diagram DLD [5]

8. Advantages

- Identifying sensitive post and block the post, which avoid unnecessary conflicts in the society.
- Gives Statistic Report to admin regarding which user is trying to post sensitive post frequently.
- Each user can share their thoughts nicely, no worries about their social reputation.
- The proposed solution aims to prevent abuse languages in the portal accurately and efficiently.

- It increases the security of data which are being transferred and received.
- To deal with the large amounts of data, this algorithm is flexible and with low-complexity.

## 9. Limitations

- One of the main disadvantages of the software is if the sensitive keyword database can be compromised by a hacker or an insider it can lead to complete collapse of the system.
- This system can be only implemented in an intranet environment as of now, because implementing in an internet environment is too vast and expensive.

## 10. Conclusion

We implement a methodology which provide a new means to prevent the user from posting sensitive data in student portal and gives a statistic to the Admin about the user who is frequently trying to post sensitive messages in the portal. This system helps to analyze sensitive data which is shared in the online student web portal, with the help of tokenization and n-gram technique. Content-based filtering method is best filtering method than any other methods, because it has filtered out bad or non-neural words from the input message and allows posting only pleasant comment to be posted on a user's wall. This will help us to avoid unwanted messages from ever spoiling reputation which carries the utmost importance in the world of socialization.

## 11. Future enhancement

- Analyze pictures and videos posting in the portal.
- Can implement this concept in social media platform.
- Analyze the behavior pattern of the user.
- Customer support.
- Create more powerful database for storing sensitive dataset

## 12. References

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