

Unwanted message filtration from OSN user's wall and Blocking of person using Trust Value

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Abstract

Social networking sites are more famous now a day. It is included in routine activity of the person to check messages on their wall. It is the best entertainment medium for youngsters. On-line social network helps you to connect with your family, friends and society to share your views on any topic. As social networking sites are open for everyone, anyone can post message on their own wall or others wall. Sometime people posts inappropriate messages on others wall which annoys people by seeing them. Considering this problem System work is related to filtration of unwanted wall messages before they reach to the user's wall and determine trust related to people on OSN. As OSN messages are short in nature so that Short text classifier and Machine learning text categorization techniques are used and for blocking of person trust value calculation is used. This system provides OSN user, Filtered wall architecture for filtration of unwanted message with blocking of person depend upon trust value analysis.

Keywords: On-line Social Network (OSN), Text classification, Message filtering, Trust value analysis.

1. Introduction

From last few years Online Social network (OSN) have become popular interactive medium of communication, disseminate and share considerable amount of human life information. OSN provides powerful means of finding and organizing useful information. Communication involves exchange of several types of content such as text, video, audio and images. Therefore in Online Social Network there are chances of posting unwanted contents on private or public areas, in general it is called as walls [1]. Today OSN provide little support to prevent unwanted messages [4] [6]. For example on social networking site they allows users to state who is allowed to write message on their wall (i.e. Family members, friends, friends of friends, particular community or group). No content based performances are supported and therefore it is not possible

to prevent unwanted messages such as vulgar or political, no matter who posts them. The aim of proposed this to provide user ability to automatically control the message written on their walls by filtering out unwanted messages. We can call the system as filtered wall (FW). Here exploit Machine Learning (ML) text categorization [8] techniques (RBFN algorithm) to automatically assigns with each short text message, a set of categories based on its content. This can be the key OSN service that has not provided yet. System using neural learning which is today's recognized as one of the most efficient solutions in text classification. As a text on which we want to perform operation is short, for that Radial Basis Function Network (RBFN algorithm) as short text classification strategy [3], in managing noisy data and vague classes. As well as provide blocking of person who sends bad messages on users wall with the help of trust value analysis.

2. Problem Statement

To Design a system for, Unwanted message filtration from OSN users wall and Blocking of person using trust value, using Data Processing, Short text classifier (machine base learning categorization), RBFN algorithm, filtering rules and trust value analysis. Benefits of this system Filter unwanted messages before they display on your wall and you can calculate trust towards the person and can block that person using trust value. Because social network maintain relationship on trust. For example if you are denoting someone as a best friend means you have more trust on that person.

3. System Design

System design defines the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as an application of system theory, which helps in production of system.

3.1 General OSN System

Fig 1 shows General OSN System. This system provides very little support to prevent unwanted messages on users wall for e.g. Facebook allows unwanted messages on users wall for e.g. Facebook allows users to state who is allowed to insert messages on their wall (i.e. Family members, friends, group of friends, friends of friends). In Facebook once we block the person he cannot send any kind of messages to you. General OSN System is Two-tier architecture which will not provide any facility of message filtration. Because it does not have any message filtration mechanism, this system provides blocking of unwanted person from which they do not want any kind of messages. So the disadvantage of existing system is that if any person has any good message or information for you and it is blocked by you, at that time he cannot post it to you. So to overcome this disadvantage new system is proposed.

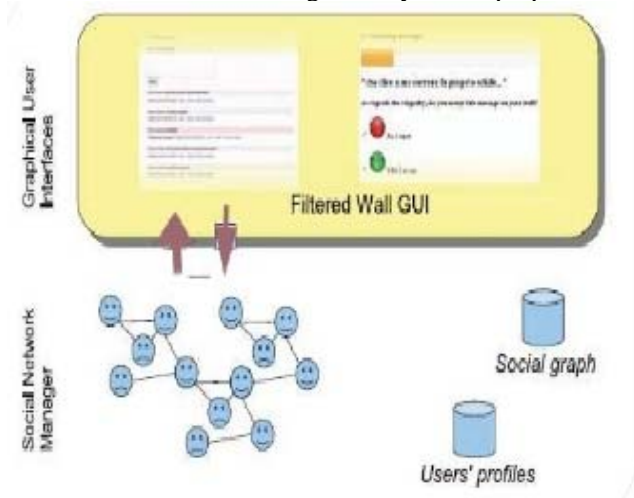


Fig. 1 General OSN System architecture

3.2 Disadvantages of General OSN system:

1. Even though social networking sites have restrictions on users who can post and comment on any user's wall, they do not have any restrictions on what they post. Some people will use ugly or indecent words in commenting on the public posts. Because of this there can be misunderstanding between two person, friends or communities.
2. This service is not only matter of using previously defined web content mining techniques for a different application, rather it requires to design ad hoc classification strategies.

3. This is because wall messages are short text for which traditional classification methods cannot use because short text does not provide sufficient word occurrences.

3.3 Existing System

Existing OSN provides Filtered wall architecture but very little support for blocking of person. In existing system you can block the person by some filtering rule for some time or permanently. Somehow like, Facebook allows users to state who is allowed to insert messages on their wall (i.e. Family members, friends, group of friends and friends of friends). So the disadvantage of existing system is that if any person has any good message or information for at that time he cannot post it to you. So to overcome this disadvantage new system is proposed.

3.4 Disadvantages of Existing System

1. In existing system filter bad word and display message by dropping bad words but that message is meaningless.
2. In other existing system they filter message and display bad words in ***** format [7]. Again the message is meaningless. So the propose system will overcome this disadvantages and provide another way of person blocking using trust value.

4. Proposed System Architecture

To overcome the disadvantages of existing system. This three-tier architecture of OSN services is proposed. First layer is called as Social Network Manager (SNM), it's aim to provide the basic OSN functionality such as Profile and relationship management. Second layer provides Social Network Application (SNA). Third layer is Graphical User Interface (GUI). According to this structure Propose system is placed in second and third layer.

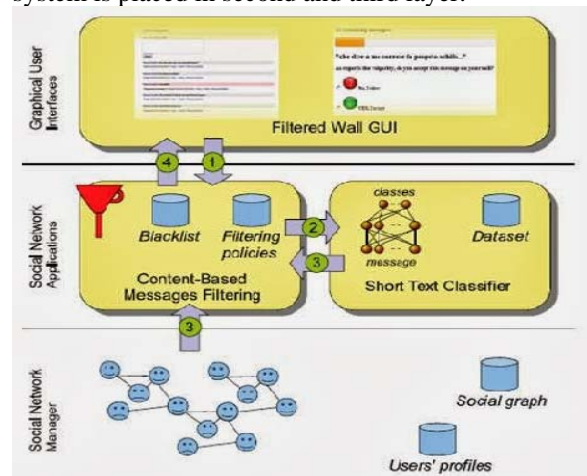


Figure 2: Proposed OSN System architecture

1. System provides Filtered wall to OSN users by filtering unwanted messages.
2. Here with message filtration system provides blacklisting mechanism which blocks sender who sends bad messages
Depend on trust value.
3. User have to decide threshold trust value (i.e. cut of value) to blacklist person. Threshold value is depending upon the user what threshold value he wants to declare.
4. User has to assign trust value to the people which are present in his friend list.
5. When Sender sends bad messages to receiver, filtered wall get that messages, then classify that message, and then apply machine learning to categories that message as neutral or non-neutral (i.e. Good or Bad)For that system using Radial Base Function Networks (RBFN).
6. If the word is neutral system will represent it by 0 and if the word is non-neutral system will represent it as 1 it is called as Text Representation.
7. If message is neutral system will display that message.
8. If message having non-neutral words then system will not display that message simultaneously reduce trust value of the person from which receiver gets that bad message.
9. System will display the good messages of person until he meets threshold value to blacklist that person.

4.1 Advantages of Proposed System

This system will not display ugly or bad messages on your wall.

It calculates trust value of user who is sending bad messages and block that user when he meet the threshold value of blocking.

5. How to Process Data

1. The first step in analyzing the text data is to remove all the punctuation and symbols. Once the message has been cleansed of punctuation marks and symbols.
2. The message can be parsed into words.
3. Then remove articles a, an, the, is, was etc. This parsing occurs by the purpose of the analysis to identify words that are present in the message which may be of further use to machine.
4. An association analysis which analyses the identifying spaces and using these spaces as the indication of one word ending and another word beginning. Words present in the information which are further use to compare with “Bag of words”. If message contain symbolic signs such as smiles then we have to remove it. Bag of words-System using text files containing abuse, ugly words related to politics, sex, etc.
5. When words in messages are separated, are compare with words present in bag of words. If word match with,

then that message will not display and trust value calculation starts for blocking of person.

6. Trust Value Calculation Process

6.1 Input

Filtering Rules are customizable by the user. User can have authority to decide what contents should be blocked or displayed on his wall by using Filtering rules. For specify a Filtering rules user profile as well as user social relationship will be considered.

FR= Trustier, SOUs, Rule, TuV FR is dependent on following factors -Trustier Set of Users (SOUs) Rule Action Trustier is a person who defines the rules. SOUs denote the set of OSN user. Rule is a Boolean expression defined on content.

6.2 Process

FM= SOUs, Rule==category (Violence, Vulgar, offensive, Hate, Sexual) TuV FM SOUs Rule TuV Here, FM Block messages at basic level. SOUs Denotes set of users Rule Category of specified contents in message. TuV is the trust value of sender. In processing, after giving input message, the system will compare the text with the different categories which are prevented. If message found in that prevented type of category then message will not display and still the user wants to send the message he/she can continue with sending the message. E.g. FM== Friends, Rule==category (Vulgar, Sexual), TuV less than or =50(i.e. threshold value) i.e. Trustier will accept the message from friends but message should not contain vulgar or sexual words. Message containing such words will affect the TuV of sender. Now the question arises, calculation of TuV.

6.3 Trust Value Calculations

The trust value of any user in OSN is dependent on the feedback they gain by the user to whom they sent a message. Feedback from the user must also be trust worthy. That’s why the FB can be categorized into following.

1. Positive with content (PC) - Good FB, message is acceptable with objectionable content.
2. Positive without content (PWC) - Good FB, message is acceptable as this message does not contain objectionable content.
3. Negative with content (NC) - Bad FB, such messages must not be sent again, which are against the Rule.
4. Negative without content (NWC) - Bad FB, message does not contain any objectionable content but the Trustier is giving negative FB.

Such type of FB from Trustier will affect the TuV of its own. So, based on above categories the TuV will be FB as 3

$TuV = TuV - [1 + (NC + NWC) / (PC + PWC)]$ for $[(NC + NWC) / (PC + PWC)]$ less than 1

7. Result

Example:

Suppose user is Priya. Assume PC=5, PWC=2, NC=6, NWC=1 for priya. And TuV=30 Message: Acid is chemical so it is use to destroy face. As we know this message will go into the non-neutral category. Then trustier will give the feedback to this message. Hence we will calculate the Trust value using following formula.

$TuV = TuV - [1 + (NC + NWC) / (PC + PWC)]$

$TuV = 30 - [1 + (6 + 1) / (5 + 2)]$ Tuv=28.85. Here we can see that the trust value is reduced here for priya.

8. Conclusion and Future Work

This system is deployed at the OSN service provider side. Which provide user a facility to get message only which they want on their wall by inspecting every message. Here filtered wall architecture achieved with the help of RBFN algorithm and blocking of user with the help of trust value analysis calculation.

We can increase trust value depend on good messages and come to know who is your well wisher and good friend.

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