Abstract

Internet becomes more popular in the day to day activities of users. In recent years online social networks (OSN) also increased rapidly. The users can communicate and share their views and content through online social networking services (OSN). The sharing between the users should be several types of content like image, audio, video etc. The main draw-back of these Online Social Networking (OSN) services is the lack of privacy for the users own private space. The users can’t have the ability to direct control to prevent the undesired messages posted on their own private walls. Online Social Networks (OSN) becomes an important part of many people life today. So Online Social Networks (OSN) should be highly secured to prevent the individual’s privacy. Up to now the Online Social Network (OSN) provides the security measures are limited. To filter the unwanted messages, in this work proposed an enhanced filtering system by using machine learning technique based on a content filtering.

1. Introduction

The aim of the present work is therefore to propose and experimentally evaluate an automated system, called Filtered Wall (FW), able to filter unwanted messages from OSN user walls. We exploit Machine Learning (ML) text categorization techniques to automatically assign with each short text message a set of categories based on its content. The major efforts in building a robust short text
classifier are concentrated in the extraction and selection of a set of characterizing and discriminate features. The solutions investigated in this paper are an extension of those adopted in a previous work by us from whom we inherit the learning model and the elicitation procedure for generating pre-classified data. The original set of features, derived from endogenous properties of short texts, is enlarged here including exogenous knowledge related to the context from which the messages originate. The role of interface design is to reconcile the differences that prevail among the software engineers design model. The designed system meets the end user requirement with economical way at minimal cost within the affordable price by encouraging more of proposed system. Economic feasibility is concerned with comparing the development cost with the income/benefit derived from the developed system.

In this we need to derive how this project will help the management to take effective decisions. As far as the learning model is concerned, we confirm in the current paper the use of neural learning which is today recognized as one of the most efficient solutions in text classification. In particular, we base the overall short text classification strategy on Radial Basis Function Networks (RBFN) for their proven capabilities in acting as soft classifiers, in managing noisy data and intrinsically vague classes. The architecture of OSN services is a three-tier structure of three layers.

These three layers are:

- **Social Network Manager (SNM)**
  The main task of Social network management layer is profile and relationship management. It maintains the data related to user profile and provides the data to the second layer for applying filtering rules (FR) and blacklists (BL).

- **Social Network Application (SNA)**
  Second layer composed of Content Base Message Filtering (CBMF) and a short text classifier is most important layer. The classifier categorizes each message according to its content and CBMF filters the message according to filtering criteria and blacklist provided by the user.

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*Figure 1.1: Filtered wall architecture.*
• **Graphical User Interface (GUI)**

Third layer consists of graphical user interface by which users can provide their input and see published wall messages.

1. After entering the private wall of one of his/her contacts, the user tries to post a message, which is intercepted by FW.
2. A ML-based text classifier extracts metadata from the content of the message.
3. FW uses metadata provided by the classifier, together with data extracted from the social graph and users' profiles, to enforce the filtering and BL rules. Depending on the result of the previous step, the message will be published or filtered by FW.

### 2 Scope And Objective

**Scope:**
- Online Social Networks enable users to keep in touch with friends by exchanging various types of content including text, audio, and video data.
- To control the messages posted on their own private space to avoid unwanted content being displayed.

**Objectives:**
- To design an online message filtering system that is deployed at the OSN service provider side.
- To consider the challenges in short text classification and filtering criteria while publishing messages on user walls.
- Once deployed, to inspect every message before rendering it to the intended recipients and make immediate decisions on whether or not the message under inspection should be dropped.

![Figure 2.1: Structure of System](image-url)
3 Class of Problem

The Class P

P is the class of decisions that are polynomials bounded. P is defined only for decision problems. It may seem rather extravagant to use the existence of a polynomial time bound as the criterion for defining the class of more or less reasonable problems polynomials can be quite large. There are, however a number of good reasons for this choice. First, while it is not true that every problem in P has an acceptably efficient algorithm, we can certainly say that if a problem is not in P, it will be extremely expensive and probably impossible to solve in practice. A second reason for using a polynomial bound to define P is that polynomials have nice "closure" properties. An algorithm for a complex problem may be obtained by combining several algorithms for simpler problems. Some of the simpler algorithms may work on the output or intermediate result of others. A third reason for a using polynomial bound is that it makes P independent of the particular formal model of computation used. A number of formal models are used to prove rigorous theorems about the complexity of algorithms and problems.

The Class NP

NP is the class of decision problems for which a given proposed solution for a given input can be checked quickly (in polynomial time) to see if it really is a solution. More formally, inputs for a system and proposed solution must be described by strings of symbols from some finite set. There may be decision problems where there is no natural interpretation for "solutions" and "proposed solutions". A decision problem is abstractly just some function from a set of input string to the set yes, no. A formal definition of NP considers all decision problems.

NP-Hard Problems

NP-hard (Non-Deterministic polynomial time hard), in computational complexity theory, is a class of problems that are, informally at least as hard as the hardest problem in NP. A problem H is NP-hard if and only if there is an NP-complete L that is polynomial time turing reducible to H. NP-hard problems may be of any type: Decision problems, search problems or optimization problems.

NP-Complete Problems

NP-Complete is the term used to describe decision problems that are the hardest ones in NP in the sense that, if there were a polynomials bounded algorithm for an NP-complete problem, then there would be a polynomials bounded algorithm for each problem in NP. This is a P class problem. The algorithms used in this system are fixed Algorithms. So it will not go into NP Hard class.

4 Modules

- Login
- Friend Request
- Filtering rules
- Online setup assistant for FRs thresholds(Classifiers)
- Blacklists

Module 1: Login and Registration Module:

In this module, user can register their details like name, password, gender, age, and then. Here the user can make friends by accept friend request or send friend request. They can share their status by messages also share.
videos with friends and get comments from them.

Module 2: Friend Request:
Search Friends: Here they can search for a friend and send a request to them also can view their details.
Accept Request: In this Module, Accept the friend request along with category.
Share Comments: They can share videos with his friends by adding comments they share their status by sending messages to friends.

Implementation Steps (Algorithm/Code)
1: Login and Registration
Steps:
1. User is connected to facebook (OSN system)
2. take Input as a username and password from user.
3. If user enter correct username and password then login successfully Otherwise re-entered.
4. Once user connected to Facebook, user gives input to module2 (Friend request)

Figure 4.1: Login & Authentication Friend Request
5 Design Goals

Here in this section we characterize certain design goals that are taken as prerequisites for designing the proposed work. These include aspects relating to access, privacy, storage and efficiency.

ACCESS:
Admin must register himself before his login for obtain the details of the user. Once he register admin can view user's profile, how many bad words a message contains and whenever admin filters any message then a pop up window is appeared to that particular user whose message is filtered.

PRIVACY:
Whenever any user updates his status or his profile image immediately he will logout of his account and he want to login again to view his status or image. It gives more security to the user.

STORAGE:
In the system we have many number of admins and users so the system provides a database which stores all these details. When admin logins he can directly access the users databases.

EFFICIENCY:
The efficiency of the proposed scheme works as follows: as we can have more number of admins the later performance will be high. The proposed work is based on the content-based altering which is in advance of the existing system.

Module 4:
Online setup assistant for FRs thresholds (Classifiers) As mentioned in the previous section, we address the problem of setting thresholds to filter rules, by conceiving and implementing within FW, an Online Setup Assistant (OSA) procedure. OSA presents the user with a set of messages selected from the dataset. For each message, the user tells the system the decision to accept or reject the message. The collection and processing of user decisions on an adequate set of messages distributed
over all the classes allows to compute customized thresholds representing the user attitude in accepting or rejecting certain contents. Such messages are selected according to the following process. A certain amount of non-neutral messages taken from a fraction of the dataset and not belonging to the training/test sets, are classified by the ML in order to have, for each message, the second level class membership values.

**Module 5: Blacklists:**

A further component of our system is a BL mechanism to avoid messages from undesired creators, independent from their contents. BLs are directly managed by the system, which should be able to determine who are the users to be inserted in the BL and decide when users retention in the BL is finished. To enhance edibility, such information are given to the system through a set of rules, hereafter called BL rules. Such rules are not define by the SNM, therefore they are not meant as general high level directives to be applied to the whole community.

![Figure 5.2: Blacklist Process](image)

### 6 Testing & Result (Analysis)

<table>
<thead>
<tr>
<th>Sr.no</th>
<th>Msg send on facebook (OSN Wall)</th>
<th>Login &amp; Registration Module</th>
<th>Friend Request Module</th>
<th>Filtering Module</th>
<th>Classification Module</th>
<th>Blacklist</th>
<th>Msg Post on User Wall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>User Login successfully</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Shejwal Shalini K., Prof. N. G. Pardeshi , Prof. A. O. Rathi : A System for Filtering of Text and Image Messages on OSN User Space.**
2. User send Friend request on facebook
   | Yes | Yes | No | No | No | No |

3. User share msg on facebook
   | Yes | Yes | No | No | No | Yes |

7 Conclusion & Future Scope:

The System work to provide unwanted message filtering for social networks. we have presented a system to filter undesired messages from OSN walls. The system exploits a ML soft classifier to enforce customizable content-dependent FRs. Moreover, the flexibility of the system in terms of filtering options is enhanced through the management of BLs. Proposed system represents just the core set of functionalities needed to provide a sophisticated tool for OSN message filtering. Additionally, strategies and techniques limiting the inferences that a user can do on the enforced filtering rules with the aim of bypassing the filtering system, such as for instance randomly notifying a message that should instead be blocked, or detecting modifications to profile attributes that have been made for the only purpose of defeating the filtering system.

Future scope of this system is that Video Filtering Techniques. In proposed system, only filter the text and Image messages. So video filtering will be tried in my future system.

References