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# SURVEY OF MACHINE LEARNING TEXT BASED MESSAGE S(TEXT AND IMAGE) FILTERING FROM OSN USER WALL.

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**ABSTRACT**: As we know, today everyone is using On-line Social Networks (OSNs) to communicate and share information. Therefore one important need in today On-line Social Networks (OSNs) is to give users the ability to control the messages posted on their own private space to avoid that unwanted content is displayed. OSNs provide little support to this requirement up to now. To provide this, we propose a system allowing OSN users to have a direct control on the messages posted on their walls. This is accomplished through a flexible rule-based system, which allows users to customize the filtering criteria to be applied to their walls, and a Machine Learning based soft classifier which automatically produce membership labels in support of content-based filtering.

## 1. Introduction

**Today's world is the world of an Internet. Social** Networks are the new way of communication. Everyone is sharing pictures, day to day activity, thoughts about issues, personal problems etc. on the **social network. Now a day's people cannot imagine** their life without Internet. But there is a security and privacy issue of such data or information which is shared on social media. So there is a need of filtering of information which is shared on social sites. Information Filtering has been widely used and employed for the textual documents and web contents. However, the goal of this proposal is to propose and experimentally evaluate an automated system, called Filtered Wall (FW), able to filter unwanted messages from OSN user walls.

On-line Social Networks (OSNs) are today one of the most popular interactive medium to communicate a considerable amount of human life information. Daily and continuous communications imply the exchange of several types of content, including free text, image, audio and video data. Information filtering has been greatly explored for what concerns textual documents and, more recently, web content. However, the aim filtering can also be used for a different, more sensitive, purpose. This is due to the fact that in OSNs there is the possibility of posting or commenting other posts on particular public/private areas, called in general walls. Information filtering can herefore be used to give users the ability to automatically control the messages written on their own walls, by filtering out unwanted messages.

One fundamental issue in today On-line Social Networks (OSNs) is to give users the ability to control the messages posted on their own private space to avoid that unwanted content is displayed. 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 propose Machine Learning (ML) text categorization techniques to automatically assign with each short text message a set of categories based on its content. We insert the neural model within a hierarchical two level classification strategy. In the first level, the RBFN categorizes short messages as Neutral and Non-Neutral; in the second stage, Non-Neutral messages are classified producing gradual estimates of appropriateness to each of the considered category. Besides classification facilities, the system provides a powerful rule layer exploiting a flexible language to specify Filtering Rules (FRs), by which users can state what contents should not be displayed on their walls. FRs can support a variety of different filtering criteria that can be combined and customized according to the user needs.

The major efforts in building a robust short text classifier are concentrated in the extraction and selection of a set of characterizing and discriminant features. 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. As far as the learning model is concerned. In the current system it 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. Moreover, the speed in performing the learning phase creates the premise for an adequate use in OSN domains, as well as facilitates the experimental evaluation tasks. System insert the neural model within a hierarchical two level classification strategy. In the first level, the RBFN categorizes short messages as Neutral and Non-Neutral; in the second stage, Non-Neutral messages are classified producing gradual estimates of appropriateness to each of the considered category.

## 2. Literature Review

Literature survey is the most important step in software development process. In the literature the major efforts in building a robust short text classifier are concentrated in the extraction and selection of a set of characterizing and discriminant features. 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. As far as the learning model is concerned. In the current system it 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. Moreover, the speed in performing the learning phase creates the premise for an adequate use in OSN domains, as well as facilitates the experimental evaluation tasks. System insert the neural model within a hierarchical two level classification strategy. In the first level, the RBFN categorizes short messages as Neutral and Non-Neutral; in the second stage, Non-Neutral messages are classified producing gradual estimates of appropriateness to each of the considered category.

In this paper, Author present a detailed experimental study of face detection algorithms based on Skin Colors has been made. Three color spaces, RGB, YCbCr and HSI are of main concern. We have compared the algorithms based on these color spaces and have combined them to get a new skin color based face detection algorithm which gives higher accuracy. Experimental results show that the proposed algorithm is good enough to localize a human face in an image with an accuracy of 95.18 percent. The study on skin color classification has gained increasing attention in recent years due to the active research in content-based image representation. For instance, the ability to locate image object as a face can be exploited for image coding, editing, indexing or other user interactivity purposes. Moreover, face localization also provides a good stepping stone in facial expression studies. It would be fair to say that the most popular algorithm to face localization is the use of color information, whereby estimating areas with skin color is often the first vital step of such strategy. Hence, skin color classification has become an important task. Much of the research in skin color based face localization and detection is based on RGB, YCbCr and HSI color spaces. In this paper, Author proposed a Filtering is based on explanations of individual or group information preferences that typically represent long-term interests [2]. Users get only the data that is extracted. Information filtering systems are intended to categorize a stream of dynamically generated information and present it to the user those information that are likely to satisfy user requirements. Researched tested methods for predicting which Technical Memos (TMs) best match people's technical interests. Within Bellcore, nearly 150 new TMs are published each month, yet very few are related to any single person's interests. Feedback using previous related abstracts provided an efficient and simple way of demonstrating people's interests [3]. In this paper, Author defined one fundamental issue in today On-line Social Networks (OSNs) is to give users the ability to control the messages posted on their own private space to avoid that unwanted content is displayed. Up to now OSNs provide little support to this requirement. To overcome this problem, we propose a system allowing OSN users to have a direct control on the messages posted on their walls. This is achieved through a flexible rule-based system, that allows users to customize the filtering criteria to be matter-of-fact to their walls, and a Machine Learning based soft classifier automatically labelling messages in content-based filtering [4].

A system to filter unwanted message in OSN wall is presented. The first step of the project is to classify the content using several rules. Next step is to filter the undesired rules. Finally Blacklist rule is implemented. So that owner of the user can insert the user who posts undesired messages. Better privacy is given to the OSN wall using our system. In future Work, we plan to implement the filtering rules with the aim of bypassing the filtering system, it can be used only for the purpose of overcome the filtering system. In this paper, Blacklist mechanism is used, where the user's list will be avoided for the moment to post on user wall. In this paper, all classification and filtering rules will be included, additionally BL rule is used. Based on the user wall and relationship, the owner of the wall can block the user. This prohibition can be approved for an uncertain period of time.

**Existing System:**

1. **In the existing system we don't have facility to** filter the post messages.
2. **If somebody doesn't want some words (it may** related with the community or with any field) he can**'t avoid that posts.**
3. **Existing system doesn't maintain blacklist** automatically, user has to maintain it manually.
4. In the existing system there are no filtering rules are available.

Set (P) = {p0, p1, p2, p3, p4, p5, p6, p7} Set (K) = {p4, k0, k1, k2, k3}

Set (D) = {p2, p3, p4, d0, d1, d2, d3} Set (C) = {p5, p6, d0, d1, d3, p7, c0**3. Problem Statement**

The main aim of the proposed system is to propose and experimentally evaluate an automated system, called Filtered Wall (FW), able to filter unwanted messages from OSN user walls. The support for content based user preferences is the key idea of proposed system. This is possible thank to the use of a Machine Learning (ML) text categorization procedure able to automatically assign with each message a set of categories based on its content.

## 4. Mathematical Model

### A. User Module:

Set (P) = {p0, p1, p2, p3, p4, p5, p6, p7}

p0=User Registration p1=User Login. p2=Create account.
p3=Post text message. p4=Post images on wall.
p5=Communication.
p6=Maintain friend list.
p7=Apply filtering rules.

## 5. Proposed Work

### A. System Architecture:

The conceptual architecture of OSN services is a three-tier structure. The first layer is Social Network Manager (SNM), commonly aims to provide the basic OSN functionalities (i.e., profile and relationship

management), however the second layer provides the support for external Social Network Applications (SNAs). The supported SNAs may in turn need an additional layer for their desired Graphical User Interfaces (GUIs). By considering this reference architecture, the proposed system is placed in the second and third layers. Users interact with the system by means of a GUI to set up and manage their FRs/BLs.
Furthermore, the GUI provides users with a FW, that is, a wall where only messages that are authorized according to their FRs/BLs are published. The main components of the proposed system are the Content-Based Messages Filtering (CBMF) and the Short Text Classifier (STC) modules. STC goals to classify messages according to a set of categories.

1. SNM (Social Network Manager)

2. GUI (Graphical User interface)

3. SNA (Social Network Application)

**B. Text classification:**
Set (K) = {p4, k0, k1, k2, k3}

k0= Stopwords removal.

k1= Neutral-Non Neutral Classification. k2= Probability Calculation.
k3= Vulgar words classification.

**C. Threshold estimation and post action:**
Set (D) = {p2, p3, p4, d0, d1, d2, d3}

d0=Skin detection algorithm. d1=Train image classification. d2=Threshold value calculation.
d3=Skin and non skin pixel detection.

**D. Blacklist generation:**
Set(C) = {p5, p6, d0, d1, d3, p7, c0}

C0= Block unauthorized user

**Union and Intersection of project:-**

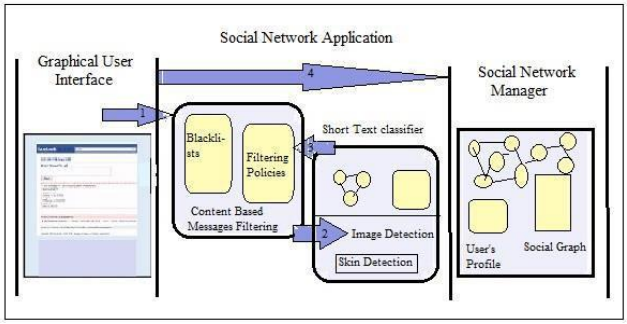


**Figure 1. Overview of System**

**B. Proposed Algorithm for Face Detection:**

It is assumed that by combining the detected regions from algorithms, skin region is extracted. Thus, three algorithms are combined assuming that their combination gives the skin region from the image and from the skin detected image face is extracted by first extracting facial features and then drawing a bounding box around the face region with the help of facial features.

Step 1: Extracting Facial Features

Step 2: Drawing a Bounding Box around the face region

Step 3: Calculate Skin Pixels Step 4:
Calculate Non skin Pixels

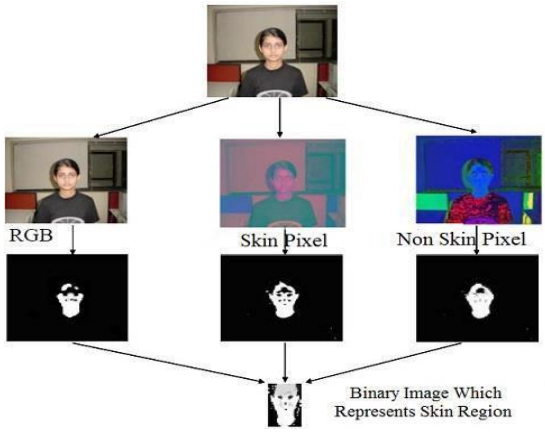


**Figure 2. Face Detection Algorithm Flow**

This application is useful for common people who **don't want to write any unwanted messages like** vulgar, political sextual messages on his\her own wall by any third person. Mostly, this type of activities are happen with some famous personalities, So if this facility will provide with OSN sites then people can protect his wall from this type of malpractices. Filtered Wall (FW) where the user is able to see his desirable messages.

**2. Text classification:**

In this module established techniques used for text classifications work well on datasets with large documents but suffer when the documents in the quantity are tiny. In this perspective critical features are the description of a set of characterizing and discriminant features allowing the representation of underlying concepts and the collection of a complete and consistent set of supervised examples. We evaluate various representation technique in combination with a neural learning strategy to semantically categorize short texts.

**3. Threshold estimation and post action:**

By conceiving and implementing within FW, an Online Setup Assistant (OSA) procedure, we address the problem of setting thresholds to filter rules. OSA presents the user with a set of messages selected from the dataset. For each message, the user expresses 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 permits to calculate customized thresholds representing the user attitude in accepting or rejecting certain contents.

**4. Blacklist generation:**
BLs are directly managed by the system, and should be able to determine the users to be inserted **in the BL and decide user's retention in the BL is** finished. Such information are given to the system through a set of rules, called BL rules.

**C. Algorithm for Text Classification: RBNN (Radian basis Neural Network):**

Following are the steps of Radian Basis Neural Network are as follows:

Step 1: Text Classification

Step 2: Stopwords Removal

Step 3: Neural Non Neural word classification Step 4: Threshold calculation

Step 5: Vulgar words classification and detection.

**D. Modules in the Proposed System:**
Proposed system divide into modules are as follows:

**1. Framework:**
This module provides Graphical User Interface to the user who wants to post his messages as a input. In this module Filtering Rules (FR) are used to filter the unwanted messages and provide Black list (BL) for the user who are temporally prevented to publish **messages on user's wall. The GUI also consists of**

**6. Conclusion**
We have presented a system to filter unwanted messages from OSN walls. The system exploits a ML soft classifier to enforce customizable content-dependent FRs. Furthermore, the flexibility of the system in terms of filtering options is enhanced through the management of BLs. The first concerns the extraction and/or selection of contextual features that have been shown to have a high discriminative power. The second task includes the learning phase. As the underlying domain is dynamically changing, the collection of pre-classified data may not be representative in the longer term. and in future this technology will apply for video also.

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**8. References**

1) [1] A. Adomavicius, Gland Tuzhilin, "Toward the next generation of brecommender systems: A survey of the state-of-the-art and possible extensions," IEEE Transaction on Knowledge and Data Engineering,bvol. 17, no. 6, pp. 734–749, 2005.
2) M. Chau and H. Chen, "A machine learning approach to page filtering using content and structure analysis," Decision Support Systems, vol. 44, no. 2, pp. 482–494, 2008.
3) R. J. Mooney and L. Roy, "Content-based book recommending using learning for text categorization," in Proceedings of the Fifth ACM Conference on Digital Libraries. New York: ACM Press, 2000, pp. 195–204.
4) F. Sebastiani, "Machine learning in automated text categorization," ACM Computing Surveys, vol. 34, no. 1, pp. 1–47, 2002.
5) M. Vanetti, E. Binaghi, B. Carminati, M. Carullo, and E. Ferrari, "Content-based filtering in on-line social networks," in Proceedings of ECML/PKDD Workshop on Privacy and Security issues in Data Mining and Machine Learning (PSDML010), 2010.
6) Bhushan Jagtap, Rahul Rathod, Vitthal Anpat, Utsav "A System to Filter Unwanted Messages from OSN User Walls", International Journal of Advance Foundation and Research in Computer (IJAFRC), vol. 2, Special Issue, January 2015.
7) Vikrant Sanghavi, Amol Nanaware, Divya Nadar, Chitra Bhole "A System to Filter Unwanted Messages from OSN User Wall", International Journal of Research in Advent Technology, Vol. 1, Issue 5, December 2013.
8) ayuri Uttarwar, Yogesh Bhute "A Review on Customizable Content-Based Message Filtering from OSN User Wall", International Journal of Computer Science and Mobile Computing (IJCSMC), Vol. 2, Issue 10, October 2013.
9) Sruthi. T, Greeshma T.R. "Filtered Wall-An Online Social Network Filter", International Journal of Science, Engineering and Technology Research (IJSETR), Vol. 3, Issue 4, April 2014.
10) Dipali D. Vidhate, Ajay P. Thakare,"To Avoid Unwanted Messages from OSN User Wall: Content Based Filtering Approach", IJCSMC, vol.3, Issue.4, April 2014.
11) M. Vanetti, E. Binaghi, B. Carminati, M. Carullo and E. Ferrari "Content-based Filtering in On-line Social Networks" 2010.