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Paper On Storage Privacy Via Black-Box And Sanitizable Signature

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Abstract - Storage privacy is basic need for security because today's generation is become digital .Every person use internet for money transaction and other important document transformation. In this paper we use redactable signature and sanitizable signature for security. Sanitizable signature is used to modify the sensitive information of document by sanitizer and this was not known by the original signer.[21]   We use black-box for tighten security. We are going to apply this concept in black-box for better security. Sanitizable signature allow third party to do modification in signature.

Index Terms - Storage privacy, Black-box, Sanitizable signature, Eclipse, CDT.

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I. INTRODUCTION

 Storage privacy is basic need for security because today's generation is become digital .Every person use internet for money transaction and other important document transformation. Sanitizable signature is used to modify the sensitive information of document by sanitizer and this was not known by the original signer. Lot of information is shared through internet using different means now a day. From that information some information are sensitive and we cannot compromise with its security. Different techniques and algorithms we use to secure our data. Sanitizable signature is important techniques which help to decide that information provider and provided information both are genuine. Black-box is very important concept for provide better security to storage. We also use sanitizable signature and redactable signature for storage privacy. Redactable signature allow anyone to remove blocks from Document, without invalidating the signature. When we don't want to share particular portion of document we just dark out that portion the same thing was done by using redactable signature. Sanitizable signature is used to modify the sensitive information of document by sanitizer and this was not known by the original signer.
In this paper for storage privacy we are going to use combine algorithm of redactable signature and sanitizable signature.
In this algorithm we have to follow seven different steps like key generation, signature, sanitization, redactation, judge and verify. We have to use seven different algorithms for creating this
algorithm. We are applying this algorithm in black-box for tighten security.

II. STORAGE PRIVACY

   "Authorized users and trusted networks can only use the available resources unauthorized person cannot use the resources" is the basic concept of storage privacy. We have to protect information against online threats such as Viruses, Worms, Trojans, and other malicious code. Effectiveness of storage security methodology can determine from two criteria.[10]
1) Implementing system cost should be a small fraction of value of protected data.[14]
2) It should cost a potential hacker more, in term of money and/or time, to compromise the system than the protected data is worth[14]

fig:2.1 Storage Privacy

III. BLACK-BOX

In black-box We get output of given input without knowing its internal working. Implementation of code in black-box is "opaque".[8]
Ex:- human brain
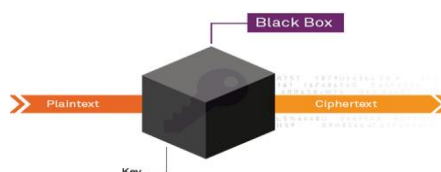
Fig:2.2 BLACK-BOX

IV. SANITIZABLE SIGNATURE

Data sanitization is the process of change or modifies the data. In cryptosystem we use this concept for security purpose. We use sanitizable signature which allow a person to modify the original portion of the data without knowing to the original signer.[7] Who made these changes are known as sanitizer. The sanitizer can produce a valid signature if it modify the designated portion no other parts of message.[7] sanitizer have authority to modify the portion of signature.
Following problem can solve using sanitizable signature: We want a properly signed document by any authorized signer, without harming the original data behind, we need some portion of that signed document hidden or masked to protect some important information. Sanitizing process can be done without original signer to sign again.[7] This concept is very useful in case signer is not available at a moment.[2]

A. Properties of sanitizable signature
- Unforgeability:- Says that no one except for the honest signer and sanitizer can create valid signature[3]
- Immutability:- sanitizer cannot change message parts which have not marked as modifiable by signer.[3]
- Privacy:- Secure sanitized message parts from outsider to recover that.
- Transparency:- Clear the indistinguishaibility of signature created by sanitizer or signer.[3]

Signing:- The Sign algorithm takes
m = (m[1]; : : : ;m[`])(message) ,the signer's secret key sksig, the sanitizer's public key pksan, as well as a description adm of the admissibly modifiable blocks, where adm contains the number of blocks in m, as well the indices of the modifiable blocks. It outputs the message m and a signature.[7]
Sign(m; sksig; pksan; adm)

Sanitizing:- Algorithm Sanit takes a message

B. Algorithm for sanitizable signature
- Accountability:- By this the signer can prove that a particular signature is his not by the sanitizer.
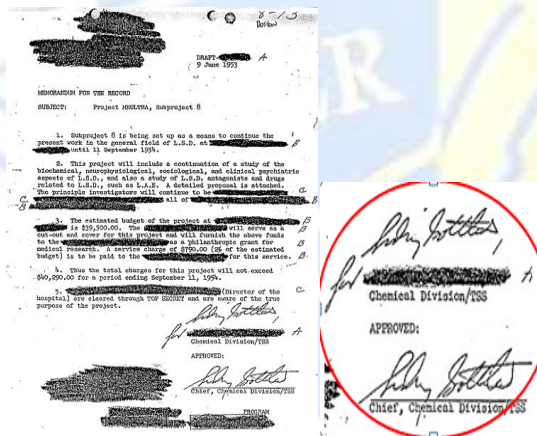
- Easy to install
- Easy to use
- A new release every year
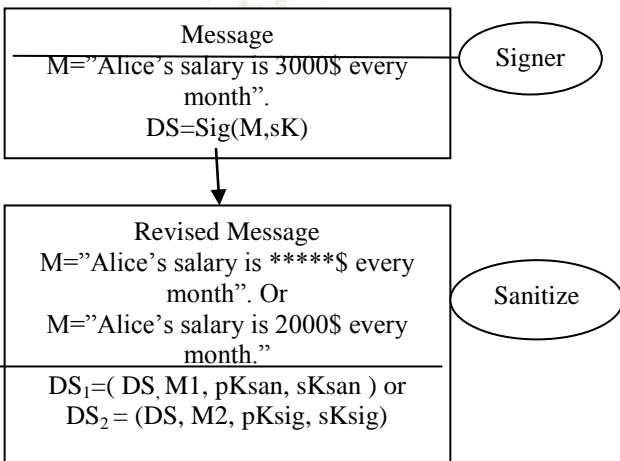
```
Can verify the signature for M, M1,
            and M2
   V(DS, M, pKsan, pKsig) TRUE
   V(DS, M1, pKsan, pKsig) TRUE
   V(DS, M2, pKsan, pKsig) TRUE
```

Verifier

The functions of genetic operators are as follows:-

Key Generation:- There are two key generation algorithms are used, two pair of keys are generated one for signer and second for sanitizer.[7]

      D.   CDT(C/C++ Developing Tooling):

The CDT Project provides a fully functional C and C++ Integrated. Development Environment based on the Eclipse platform[27].

$m = (m[1]; : : : ; m[`])$, $m[i]$, the public key pksig of the signer and the secret key sksan of the sanitizer. It
modifies the message m according to the modification instruction mod, which contains pairs $(i; m[i]0)$ for those blocks that shall be
modified. Sanit calculates a new signature _0 for the modified message m0 mod(m). Then Sanit outputs m0 [7]
Sanit(m;mod; _; pksig; sksan)

Verification:- The Verify algorithm outputs a decision verifying the validity of a signature
for a message $m = (m[1]; : : : ; m[`])$, $m[i]$ with respect to the public keys. [7]

      E.   Introduction To Eclipse:

- Eclipse is a universal platform for integrating development tools. Multi-language software development environment comprising an

    integrated development environment and an extensible plug-in system.[23] Eclipse was Started by IBM (Canada) in late 1990s.[27] A small Java program with loader functionality. Eclipse Can be infinitely extensible by 3rd parties products are created in the form of plug-in which are then loaded by Eclipse[27]

      F.   Goal:

- Development tools platform
- Common platform for all IBM development products[23]
- Integrated experiences for the customers Formed and created Eclipse Foundation (non profit org.) in 2003-2004[27]

➢ Latest Version:
- Neon 22 June 2016 4.6

➢ Next Version:
- Oxygen June 2017 4.7

      G.   Layer of eclipse:
- PDE: Plug-in Development Environment
- JDT: Java Development Tool

Platform: Eclipse Platform
JVM: Java Virtual Machine
    ➢ Features:

Check: http://wiki.eclipse.org/CDT/User/NewIn82
Signatures   and   a   Black-Box Construction of Strongly Private Schemes" David Derler and Daniel Slamanig[27]

Editor: C/C++ syntax highlighting
    Code completion (Camel Case Completion)
    Hover help Automatic indentation[23]
Parser: Parses source files in project to extract C/C++ elements Information used to search, outline and code completion[27]
Search
API and extension points to allow extensibility
C++ Development:
    Class creation wizards

ECLIPSE
We are using eclipse platform to implement proposed algorithm.

C. Purpose for Using Eclipse:

- Open source and FREE!
- One IDE for almost all languages!
- Supported on most operating system
- OS independent GUI

> Latest Version:

- Neon 28 Sept 2016 9.1.0
  > Next Version:

- Neon Dec 2016 9.2.0

VI. CONCLUSION

We get better privacy using Black-Box in Sanitizable signature. We believe that our algorithms can be further tuned in order to achieve an even larger performance increase. Sanitizable signatures permit a designated party to remove or replace designated parts of a document. Any unauthorized person cannot access the data without permission. Create the black box from where they can access the system of company.

VI. FUTUREWORK

Future work will be implementation of proposed
algorithm using Eclipse. Once it will be implemented, testing will be done and result will be compared with current results for conclusion.

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A Survey On Opinion Mining of Restaurant Review by Sentiment Analysis using SVM

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Abstract - The area of sentiment mining is also called sentiment extraction, opinion mining, opinion extraction, sentiment analysis, etc. . Researchers in the areas of natural language processing, data mining, machine learning, and others have tested a variety of methods of automating the sentiment analysis process.

It can be seen from the increasing of customers opinion and review about restaurant. So it can be recognized various sentiments about the restaurant either positive, negative or neutral. Sentiment analysis is a computational study of the opinions, behaviors and emotions of people about restaurant review... From some machine learning techniques of classifications, the most often used is Support Vector Machine (SVM). SVM are able to identify the separated hyper plane which maximize margin two different classes. However SVM is lack of electing appropriate parameters or features. Election features and setting parameter at SVM significantly affecting the results of accuracy classifications. Therefore, in this research used the merger method election features This research find the classifications restaurant review in the positive or negative.[1]

INTRODUCTION

Sentiment analysis or opinion mining is machines analyzing human expressions of sentiment. Human according to various thoughts, actions, or reactions generate

feelings of subjective nature such as emotion, mood, combined with visible facial expressions or postures, and communicate using language either in the spoken or written form. Opinions expressed by others are a matter of interest for everyone be it individuals or companies. Individuals through reviews, blogs, and opinions expressed on social media by other people, buy a product, or follow the popularity of various political parties to cast their vote. This plethora of information comprising of peoples thoughts, likes, dislikes shared among different related and unrelated people determines to a large extent other individuals choices and preferences in liking or buying a product or in supporting representatives of political parties. Companies deeply mine consumer reviews for brand management and for promoting their products. In economics and finance to understand beyond fundamental and technical knowledge analysis, sentiment analysis supporters suggest additionally it is essential to use information as diverse as, impending announcements, sudden surge in commodity prices, rumors and reports of a market collapse or break through, increase in the interest rates by central banks, fluctuations in dollar prices, etc. as these factors help in better estimating and forecasting situations of changes in market.[2]

The classification of yelp restaurant reviews into one or more, "Food", "Service", "Ambience", "Deals/Discounts", and "Worthiness", categories is the problem in consideration. Inputs are the Yelp restaurant reviews and review ratings. The multi-label classifier outputs the list of relevant categories that apply to the given Yelp review. Consider a Yelp review: " the food is good, and service is not good.food is good is positive sentiment analysis and service is not good is negative sentiment analysis Extracting classification information from the review and presenting it to the user, shall help the user understand why a reviewer rated the restaurant "high" or "low" and make a more .

Yelp users give ratings and write reviews about businesses and services on Yelp. These reviews and rating help other yelp users to evaluate a business or a service and make a choice. The problem most users face nowadays is the lack of time; most people are unable to read the reviews and just rely on the business' ratings. This can be misleading. While ratings are useful to convey the overall experience, they do not convey the context that led users to that experience. For example, in case of a restaurant, the food, the ambience, the service or even the discounts offered can often influence the user ratings. This information is not conceivable from rating alone, however, it is present in the reviews that users write.[1]

2.IMPACT OF MACHINE LEARNING IMPACT ON SENTIMENT ANALYSIS

Most of the contemporary models are based on machine learning models such as

1) Naive Bays Classifier.
2) Support Vector Machine (SVM).
3) Multilayer Perception.
4) Clustering.

The significance and limits of these machine learning techniques learned are:

☐ There are a number of benefits with Naïve Bays Classifier. Two major benefits are, it is simple to implement, and is effective in computation. However the major drawback with the approach is that it assumes attributes based on probability and as a result useless attributes are generated more.

☐ The benefits of the models built using SVM classifier have been determined to be highly accurate in prediction, and effective in solving the problems of dimensionality. However it is a highly complex model to implement in case missing values are present in a d

☐ The benefits of Multilayer Perception are, it performs as a universal function approximation, and is capable of creating strong relations among the variables of

☐ The benefit of clustering approach is that it assures optimally high decision making capabilities by generating multiple classes. The disadvantages are that as there is no training included in the implementation the classes cannot be known beforehand, and a high number of classes are generated leading to many complications. Also the model used for measuring features and distance mostly determines its application.input and output based on the strategy of learning and building. However the method incurs high overhead and also in the implementation a dense training set is needed.

FUTURE RESEARCH OBJECTIVES:

In the process of sentiment analysis several topics of open research exist.
A few of them are as follows:
☐ The question of automatic entity resolution that is denoting numerous names to the same product inside and across documents has to be addressed. The application of anaphora resolution with efficiency is also a most important issue that has to be solved. The issue of aspect extraction technique for grouping aspect another

difficult that is. E.g. To talk about a phone, terms such as "battery life" or "power usage" that denote one aspect create number of difficulties that has to be answered.
☐ In detecting for every entity relevant text, where many entities may be discoursed in a document, the existing techniques accuracy is of insufficient levels that needs improvement.
☐ In the detection of sarcasm there are a few methods of classification used however these techniques have to be built into systems of autonomous sentiment analysis.
☐ A major problem of many systems of sentiment analysis is handling noisy texts involving mistakes of spelling/ grammar, punctuation are missing/unpredictable and use of slang
☐ The existing methods of sentiment analysis are designed to find subjective statements sentiment and not that of objective statements that regularly show up in news articles and though of factual type they however also hold sentiment. The objective statements have to be associated with sentiment scores by the context based algorithms.
☐ The integration of sentiment analysis with the latest methods of soft computing and machine learning is required and has to be an important part of future research studies. These methods and their strategies have majorly risen in popularity due to their contributions in recent times and need to be further researched for enhancing sentiment analysis systems.
☐ The depiction of the content in the form of metaphors is lexically highly challenging in sentiment analysis. This necessitates a great deal of research in the area of feature extraction and optimality detection.

METHODOLOGY

1) Define the domain of dataset: dataset collection spanning a domain, for example dataset restaurant reviews, dataset review products and others.
 2) Pre-processing: the initial processing stage which is generally carried out by the process of tokenization, stopwords removal, and stemming.
3) Feature Selection: Selection of features (feature selection) can make the classifier more efficient/effective by reducing the amount of data to be analyzed to identify the relevant features for further processing. Feature selection method that is usually used is Expert.
Feature Selection Feature selection is one of the most important factors that may affect the accuracy of classification because if the dataset contains a number of features, dimensions of space will be large, degrading the accuracy of classification Feature selection affects several aspects of the pattern of classification, classification accuracy, the time required for learning classification functions, the amount of sample needed for learning and costs associated with the features according to Yang .Feature selection is an optimization process to reduce a large set of great features original to a relatively small subset of features that are significant to improve the classification accuracy quickly and effectively.

SUPPORT VECTOR MACHINES:[4]

SVM was introduced by Boser, Guyon and Vapnik and widely being used for classification, regression and pattern recognition.SVM has capability to classify indeed of the dimensions or size of the input space. It acquires the major advantage because of its high generalization performance with indeed of the much prior knowledge. The goal of the SVM lies in finding the best classification function and also it aims to distinguish between members of the two classes in training data. The major idea behind the SVM is construction of the optimal hyper plane that is widely used for the problems of classification and for patterns identification .From the set of hyper planes the hyper plane that is of optimal is needed be selected for pattern classification and thus to improve the margin of the hyper plane. SVM needs to classify the given patterns correctly so that it can maximize the margin that determines the efficiency of the SVM algorithm. The accuracy in classifying pattern will improve based on the size of the margin i.e. greater the margin size more exactly it classifies the patterns [4]. The equation for the hyper plane is given below. Hyper plane, $aX + bY = C$, With the help of kernel function $\Phi(x)$.i.e. $\Phi(x)$,the above pattern can be mapped into high dimensional space.SVM tries in finding the hyper plane accurately that separates the two different samples with the set of independent training samples being specified [4].

ADVANTAGES OF SVM ALGORITHM [4]

☐ It provides the greater benefits on the text classification when the high-dimensional spaces are being used.
☐ Accuracy in the prediction is comparatively high with other classification algorithms.
☐ Fast evaluation of the learned target function.
☐ Used widely in various real time applications with the high scope in evaluating the good outcome.
☐ Without the dependence of the dimensionality of feature space it has the good ability in learning.
☐ It interprets the inherent characteristics of the data better when comparing to artificial neural networks.

APPLICATION OF SVM ALGORITHM [4]

It is been widely used for many real world problems such as
Text categorization:
☐ To categorize the text documents i.e. natural text, based on their content, for example in email filtering, web searching, sorting the documents to specific topic.
☐ In assigning documents to more than one category such that for series of binary classification problem.
Image classification:
☐ Used in validating and testing the bacterial image, pathogens and for the classification SVM is used widely.
Medicine:
☐ It isused in detecting the micro calcifications in mammograms which is an indicator for the breast cancer.

CONCLUSION

In this paper we have proposed a new way of using SVM as a classifier and it is proved to be an effective method to find users' perception about restaurant review in positive and negative sentiment anaylysis.using svm obtain more accuracy. We proposed a novel way of resolving the problem of spam detection that usually appears in any review.

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