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Image Filtering in Message Passing Application

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***Abstract*—**Message passing application is the medium of communication between two parties over the internet or server, the proposed system is going to design messages passing application in the form of images utilizing effective feature selection and pattern classification technique. This paper represents a messaging app in android which restrict the edited message in the form of image

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I. INTRODUCTION

Now a day's people are getting attracted towards using the cell phones instead of using the laptops andcomputers for their basic operations that they perform on a laptop or computer. Android is an established brand in the latest cell phones and it is taking cell phone industry to the heights in market. Theseandroid cell phones have become important part of our lives these days. We are almost performing allthe important things related to personnel as well as professional life.The proposed system is going to design messages passing application in the form of images utilizing effective features selection and pattern classification technique. The proposed mechanism detectsand filters out edited image messages in a smart manner. Application of this technique is used toavoid spreading the wrong messages in the form of images which disturb the society. Android is anopen source mobile phone operating system based on Linux platform. It has occupied an importantposition in the field of mobile web for its open and convenient development mode. The system represents amessaging app in android which restrict the edited message in the form of images which causes violence in the society and communicate with each other without any trouble.

The basic concept of this application is to send an image message in secure fashion that is identifythe forwardedimage at the server side and skip or forward the same image as per vulnerabilityof the corresponding image: This is done by applying an image comparison technique to therequested forwarded image at server side, if the image is found to be mismatch to the original saved image then it is dropped if not then forward. This principle is applied to only for those image which are stored in database, this application is design to restrict. The system is designed to control defamatory post morphing of images of legends and respected people in the society and maintain peace in society and social means.

II. REALATED WORK

As in recent days android mobiles become the respiration of the world, everybody has its own android cell, everyone use it, and there are so many systems to access android phone via internet. Due to the advanced mobile configuration and constant internet service everyone preferred to send the messagesuse the messaging application for effective and efficient service now days messaging apps like WhatsApp, hike, WeChat, Line, viber etc. all people preferred to send a text message or image through theseapplication instead of using mail service or internet service but these application lacks while sendingimage that they send all the images messages as it is it didn't check about its vulnerability speciallyabout images of iconic people which cause big trouble latter in the society all these application fails at thesesteps below are some existing messaging application.

A. WhatsApp

This is really a very good message passing application over the internet. It is the most popular message passing application in the current time, in this application

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many feature are availablebut problem is that sender can send any type of images that is edited images through messageswhich may be normal images or vulnerable images which may disturbed the society. One more drawback is it can't keep track the user which is habitual to send vulnerable message in the formof images which caused trouble latter in the society. This database is may be helpful for the crimeinvestigation for police department.

B. Hike Messenger

This is also veryfamous and popular application used to communicate with the people over the internet available in the market. This application also provides many interesting featuresin the application for the user and graphical user interface but lacking the same problem that problem occurred in the WhatsApp messaging application that it sends all the images as they are originally forwarded by the server without checking for any malicious morphed images.

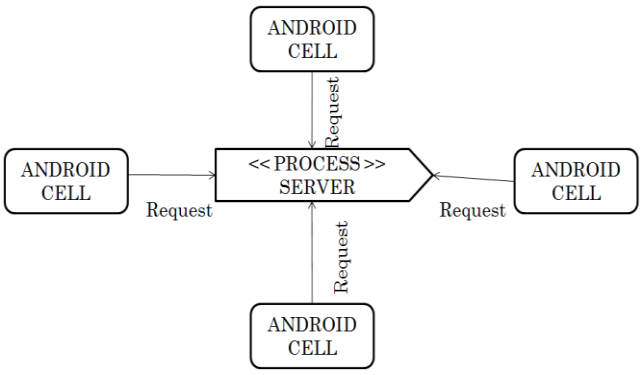
C. WeChat

WeChat is also similar kind of application introduced by Chinese company and contributed in the field of social messaging application. This application improved the previous lacking feature that was present at that time in the messaging application.

This is also similar kind of message passing application like others, introducing video calling feature in addition. This application also lack in the same problem that problem occurred in the othermessaging application that it sends all the images as they are originally forwarded by the server.

D. Preliminary

Nowlooking at how the existing system is going to work, the block diagram given below show the whole working of all the applications above mentioned.



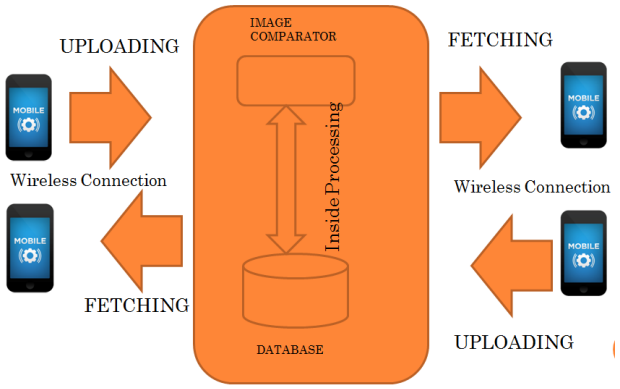
When user request for the installation of the application the query is automatically fired to the sever which consist of the address of the user device and request for the connection establishment inside the packet after the verification of the user whole request is processed by the server and installation process initializes and complete application is installed in users device now the application is ready to be used.

To overcome the issue of forged images in above mentioned applications this system of image filtering in message passing application is proposed.

III. PROPOSED SYSTEM

The system is going to develop a message passing application that will filter images coming from users and block the forged (edited) images.The users trying to share their images on this system with other users will have to go through the filtering process on this system. The image filtering results will decide whether to forward or block the image.This image filtering process in proposed message passing application will be carried on the server itself.

The following architecture diagram of the system will provide a detailed description of above mentioned process.



The users are connected to each other through a wireless connection. The user involved in this process will send the message in the form of image to the receiver. This image will be uploaded on the saver's database before the image travels to the receiver. Here, on the server, image comparator will carry out filtering of images in database for detecting any forged (edited) part in the corresponding image. After execution of this part on the server, the image is ready to be fetched by the user depending on filtering results. If it contains any malicious part, the image will be blocked and will not be made available to others otherwise it will be made available. And similarly the receiving user follows the same whole process to send the image back to the sending user.

In this system when the message is sent from the client before receiving by the receiver it travels

through the server, at the server side image comparing process is done in fallowing steps:

1. Check whether the arrival image is in JPEG or PING format.
2. If the image is neither of both format it return false
3. Resizes the image to 8x8 squares and returns as image resource.
4. Returns the mean value of the colors and the list of all pixels' colors.
5. Returns value with one and zeros. If a color is bigger than the mean value of colors it is one.
6. Returns the hammering distance of two images' bit value.

The detailed description follows:

When the image arrives at the server side it checks whether it is in JPEG or PNG format. If the image is in some other format than these two, it returns a false value and discards the image from the system. After returning the values, it compresses the corresponding image in 8x8squares and returns the image resources. After returning the resources it maps the mean value of the color and the mean value of the all the list of pixels color.Analyzing all the values of the components,it returns one if color is bigger than the mean value of color otherwise it returns zero. At last, analyzing all the results, the bit value of hammering distance is calculated.

If the hammering bit value is less than or equal to 10 then the image is almost same that is not altered. As thevalue increases, the similarity between the images decreases.

If the value is less than or equal to 10 then image is forwarded to the receiver. If this value lies in between 11 to 20, the image is dropped.When this value goes beyond 21 then sender is trying to send a completely different image which is completely different from database of images in the server and hence the image is forwarded to the receiver.

IV. EXPECTED OUTCOME

The system detects the forged message in the form of images by comparing them with original images stored on the server. Based on the comparison result system blocks or forwards the image.

V. FUTURE WORK

- The system can be upgraded to handle all the types of image formats.
- The im**a**ges on server can be stored in binary format to reduce the size of the system.

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