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## Identifying and Restricting Abusive Images in Emails

G.V.Hindumathi<sup>1</sup>, M.Sandhya<sup>2</sup>, K.Sudha<sup>3</sup>, P.Sravya<sup>4</sup>

Assistant Professor, Dept. Of CSE, Gayatri Vidya Parishad Engineering College, Visakhapatnam, India<sup>1</sup>

Assistant Professor, Dept. Of CSE, Gayatri Vidya Parishad Engineering College, Visakhapatnam, India.<sup>2</sup>

Assistant Professor, Dept. Of CSE, Gayatri Vidya Parishad Engineering College, Visakhapatnam, India<sup>3</sup>

Assistant Professor, Dept. Of CSE, Gayatri Vidya Parishad Engineering College, Visakhapatnam, India<sup>4</sup>

**ABSTRACT:** The explosive growth of the Internet has brought many good things: electronic commerce, easy access to vast stores of reference material, collaborative computing, e-mail, and new avenues for advertising and information distribution, to name a few. As with most technological advances, there is also a dark side: Some people are sending attachments through emails like spam mails and some fraud images. In this project we check the mail before sending it to the receiver mail id for the fraud images using “Skin Detection Algorithm” and also identify the spam mails. If any fraud images and spam mails are identified then the IP address and physical location of that sender is identified by a third party application. This ethical hacking technique is effectively used for identifying the location of the spam mail. After identifying the sender of the mail, discard the mail and send some warning message to that sender mail id. If that mail doesn't contain any spam files or abusive images, send it to the receiver mail id.

**Key words:** Electronic commerce, E-mail, Skin Detection Algorithm, IP address, Ethical Hacking, Spam files

### I. INTRODUCTION

The Internet or the World Wide Web is indeed a wonderful and amazing addition in our lives. The Internet can be known as a kind of global meeting place where people from all parts of the world can come together. It is a service available on the computer, through which everything under the sun is now at the fingertips of anyone who has access to the Internet. So many protocols are using for uploading and downloading the files in internet. Using internet some disadvantages are also there. Upload some obscene images into web. Using some types of software's we can stop the uploading. Main advantage of the internet is emailing.

The main problem with emailing is some people attach some obscene images and send through emails. So we can't access the email attachments and can't stop the sending. In this project check every mail attachment, if it is an image. This project mainly used for private network.

In private network a user send a mail with attachment to other user through server. Sender sends attachment details and receiver mail ids to server mail id. Server downloads the image and applies Skin Detection Algorithm. And then send it to receiver mail ids or Hack the ip - address

As it is mainly intended to for private networks. We assume that the Server has access to all the mails. Integrated 2 applications, as these are already existing systems. The Project is done under 2 phases.

*A. 1<sup>st</sup> Phase:* It Deals with identification of obscene images if any in mail attachments and restricting them using skin detection algorithm.

*B. 2<sup>nd</sup> Phase:* It deals with identification of the sender IP- address, if any obscene image identified.

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This can be extended to public networks also

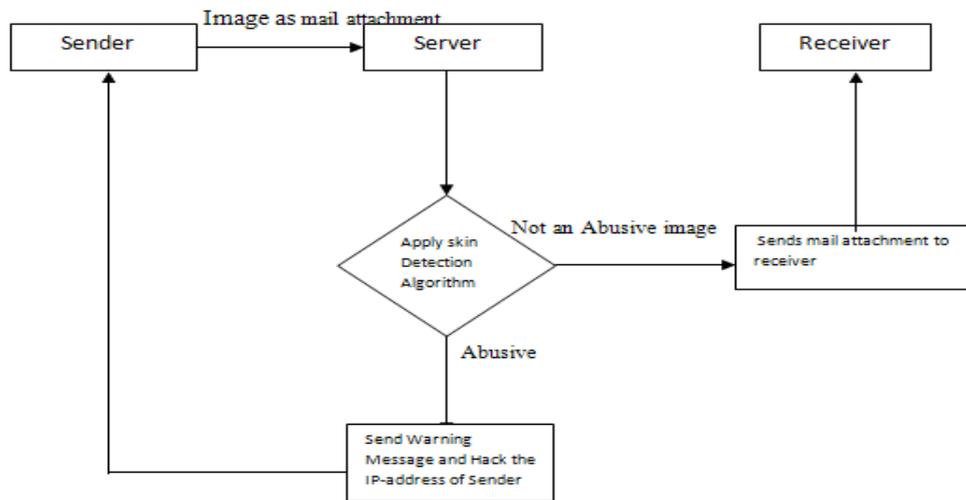


Fig . 1 Architecture for identifying abusive images and restricting them

## II.METHODS

In this proposal we are using Java for sending mails with attachments. Platform Independent, It is a unique feature of java, which made it an internet language.

### C. Check the Authentication of Sender :

Here check authentication of sender mail ids.If Password authentication function returns ‘one’ then mail attachment try to send. In case it returns ‘Zero’ raise exception.

Table I. Creates a New Password Authentication Object from the Given User Name and Password.

```

public void sendSSLMessage(String recipients[], String subject,String message,String from)throws MessagingException {
boolean debug = true;
Properties props = new Properties();
.....
Session session = Session.getDefaultInstance(props,
new javax.mail.Authenticator() {
protected PasswordAuthentication getPasswordAuthentication() {
return new PasswordAuthentication("xxxx.gmail.com","test");
}
}
}
  
```



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At server side after getting mail attachment from sender, Server verifies mail attachment image by using Skin detection algorithm. For this we are using MATLAB. As suggested by its name (a contraction of "Matrix Laboratory"), MATLAB provides can create and manipulate arrays of 1 (vectors), 2 (matrices), or more dimensions. In the MATLAB vernacular, a *vector* refers to a one dimensional ( $1 \times N$  or  $N \times 1$ ) matrix, commonly referred to as an array in other programming languages. A *matrix* generally refers to a 2-dimensional array, i.e. an  $m \times n$  array where  $m$  and  $n$  are greater than or equal to 1.

D. Skin Detection Algorithm:

Table II. Algorithm for Detecting the Skin Part

```
img_ycbr = rgb2ycbcr(img);  
Cb = img_ycbr(:, :, 2);  
Cr = img_ycbr(:, :, 3);  
%Detect Skin  
[r,c,v] = find(Cb>=77 & Cb<=127 & Cr>=133 & Cr<=173);  
numind = size(r,1);  
%Mark Skin Pixels  
for i=1:numind  
out(r(i),c(i),:) = [255 0 0]; bin(r(i),c(i)) = 1;
```

### III. RESULTS

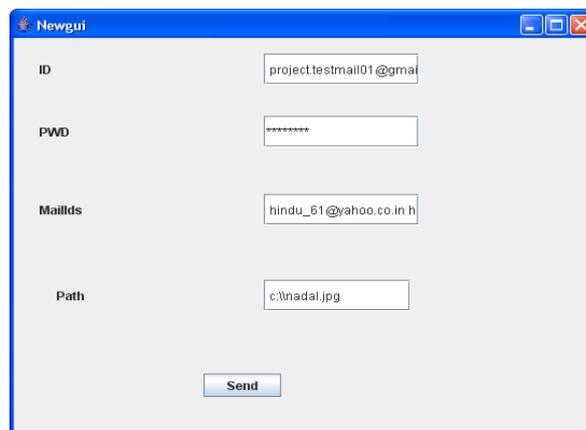


Fig . 2 Screen shot for entering sender id and receiver ids and attaching file also through interface



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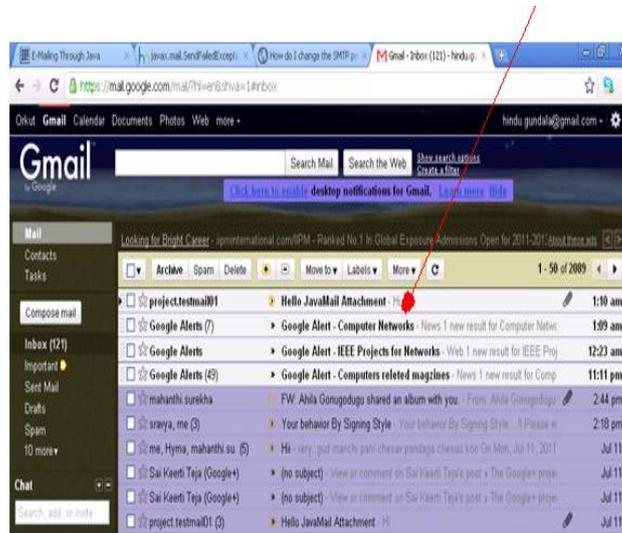


Fig. 3 Screen shot of server id getting mail from sender

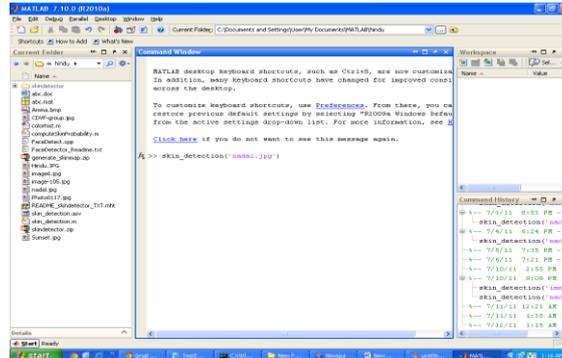


Fig. 4 Screen shot for applying skin detection algorithm

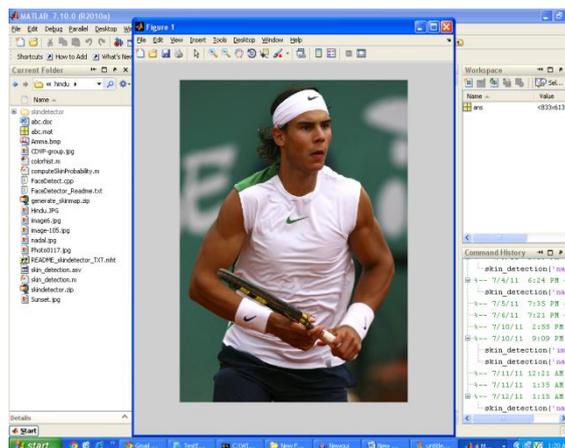


Fig. 5 Screen shot for original image that is attached by sender

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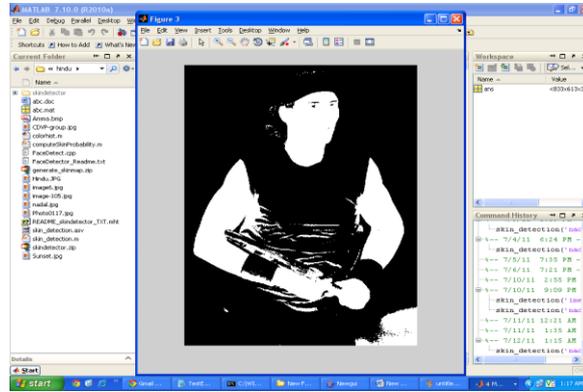


Fig . 6 Screen shot for after applying skin detection algorithm for that image

## E. Not an Abusive Mail Attachment:

Verify that attached image with skin detection algorithm, if Image is not an abusive image then send it to the receiver mail ids

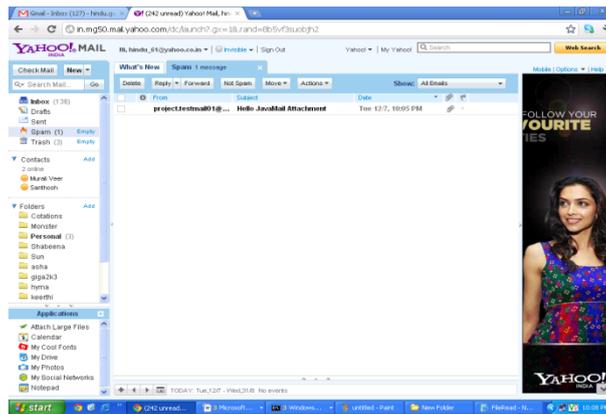


Fig. 7 Screen shot of getting mail from sender id with attachment

## F. An Abusive Mail Attachment:

Verify that attached image with skin detection algorithm, if Image is an abusive image then send some warning message to the sender and hack the sender system also.



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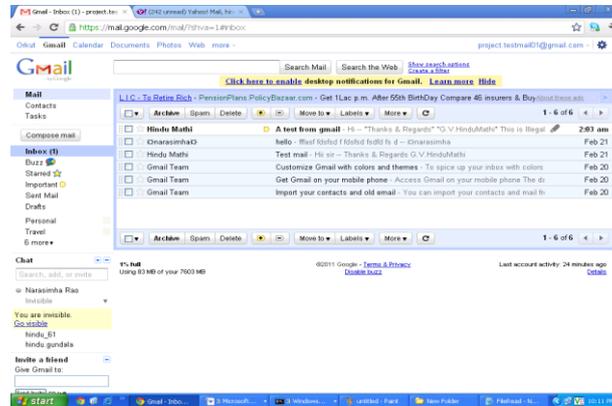


Fig. 8. Screen shot for sender receives warning message from server mail id

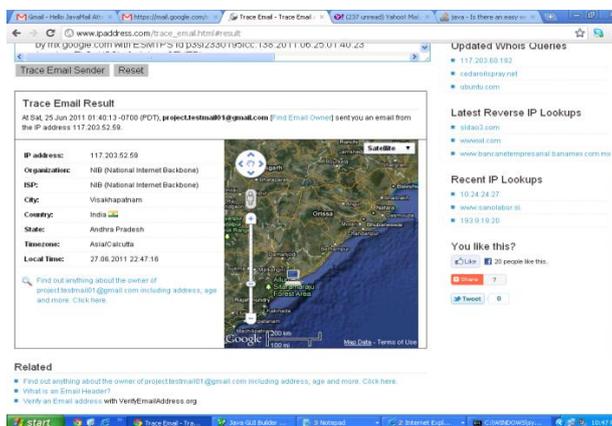


Fig . 9 Screen shot for identifying sender IP-address and location also

## IV. CONCLUSION

In this proposal, an attempt is been made to identify any abusive images which are sent as attachments through e-mails and restrict such mails in a private network. The mails are first checked for any attachments and if any, the attachments are checked for any abusive content using skin detection algorithm at the server. If any abusive content is present the mail is deprived of transmission to the recipient and a warning message is send to the sender.

The implementation is done only for private networks; it may be extended to public networks also.

## V. FUTURE WORK

The basic skin detection algorithm just gives the threshold value but this value is not very accurate. Still work has to be done for accurate skin detection algorithm to give exact value of the image. Second phase of this project is hacking where the IP address of the sender of abusive images is tracked and a warning message is sent. In this project a third party tool is used for hacking but it can be implemented by code also.



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