Available Online through   *Research Article*

www.ijptonline.com

VALIDATION OF SECRET CODE USING IMAGE BASED TECHNIQUE

D. Saravanan*
IFHE University, IBS Hyderabad, Telangana State, India 501 203.
Email:sa_roin@yahoo.com

Abstract

Background and Objective: Text Based password technique is fighting fit and easy for the user to enter their password. But this type of password is hard to remember by the user and at the same time it is very easy for the attackers to identify the password.

Methods: The proposed technique called Image based authentication password generation is a user created point image technique method. In this proposed technique user generates single hint from each image and this process is repeated for all input images. Users preferred image based authentication method selects single points which are easy to remember instead of remembering multi points. Image based authentication password generation gives higher protection than existing technique because it is difficult the attacker to identify the correct hit point in the selected image.

Results: The hint or make sense points consist of ordered images with which user interacted and chose a point on every image and the selected points serve as a password. In addition these points user also creates an audio authentication corresponding to the selected points. This audio authentication will be used in recalling the make sense points on images. Users preferred Image based authentication password generation helps to remember single point additionally audio verification helps to improve the selection process. The user can have an alphanumeric password with selected image.

Conclusion: This will help to increase the security level. The main purpose of this work is to maintain a higher level of security for user login. The proposed technique is very difficult to guess the hackers against password prediction.

Keywords:

Graphical Password, Pass points, Image Selection, Data Mining, Image Authentication, Point Selection, Password generation, Image mining.

Introduction

In recent years many new image authentication techniques have been developed to overcome the problems with the traditional authentication methods. Due to usage and security advantage these new image authentication techniques are more desired than traditional authentication techniques [1]. It has been theoretically proven that the human brain is better at understanding and remembering the images. The image based password generation techniques are intended to reduce the recollection burden on users.

Image authentication performs the retrieval of the image almost similar to the given selected image. Security means between the user and computer for this an important application is user authentication Users often use traditional password technique that is easy for hackers to estimate. A good password system should support strong passwords while at the same time they should be easy to remember. The image based authentication system mentioned here uses this approach to create passwords which are very strong and yet easy to remember. [2].

The image usage is increasing day by day due to many factors for the purpose of analysing and identification [3] In this work the technique propose a new make sense-based graphical password scheme called Image based authentication password generation Password consists of one make sense-point. Per image for a sequence of images. It also includes the audio authentication and alphanumeric password [4].

The audio authentication is entered once for all the images. The password is entered every time with the image. This way user can create a strong password. When a wrong password is given by the attackers it will lead to a wrong path, which will lead to authentication failure. Image extraction is the complex problem in image mining, when we want to extract any image information we must have some domain knowledge such as colour, shape, pixel value stored in the image frame etc. Image based authentication technique is the best alternative to existing graphical based authentication systems. In this a user need to remember a single point rather than multiple points. It supports some additional features to help users to recollect the points by providing clues. [5]. When there is any attack in the proposed technique they will have to keep trying to choose the correct. Point which is highly difficult and unlikely, therefore a single point system provides enough security. Instead of requiring the user to remember a sequence of 4 or 5 points, the proposed techniques requires the user to remember only one point. This would definitely be easier and secure for the user. Hence the usability of this technique would be high.

Previous Research

The Sketch based image retrieval technique discusses the image retrieval based on histogram of Gradients (HOG) technique. This method selects the candidate block image and compare this with database image Methods prove that proposed brings number of images down compared to existing technique such as Index able oriented chamfer matching, context aware saliency techniques[6].This paper discusses the CP-ABE technique for cryptographic information [7] Paper discusses the technique of information hiding using barcode technique. This brings more secured image data transformation[8].In Image based authentication password generation, users generate one point image, existing technique creates multiple points with a   burden to the user to remember all created points. One point image selection reduces this burden it gives some hint to the user even if they forgot the generated [9]. In Cancer identification in brain images, image segmentation concept is used to group the images into normal. This paper brings a technique called Active counter method used for segmenting the images and LM algorithm for classifying the images in to the above category. This produces accurate and fast image classification compared to the existing techniques. [10].This paper brings the new hardware based security systems in private network; the proposed technique brings the reduced threat in all possible situations [11].

A. Premeditated Technique

In the premeditated technique audio authentication is used to facilitate recollection of the code word generated by the user. Still no method for audio authentication in graphical password authentication [12]. Study says that audio authentication provides additional security for the proposed system. Based on the correct point selected the related audio information plays to support the security features. Existing multipoint selection never supports audio based supporting system. Proposed single point selection supports it very effectively [13] and image security is maintained effectively, it is shown in the fig 1.
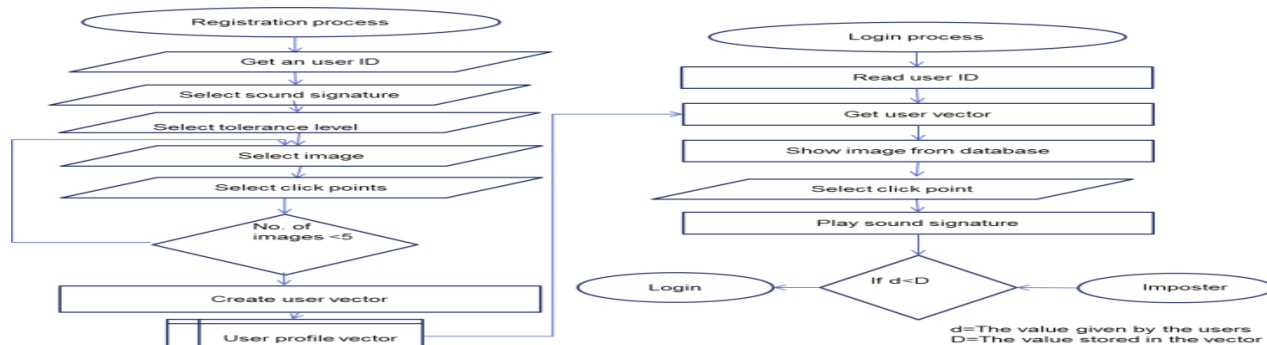
Fig 1. Proposed architecture flow diagram.

Research method

A. View port Selection

When an image is browsed and selected, the full image is not stored but only a part of it. This is done by the help of a view port. This view port is movable in overall image. A small area of the selected image is stored in database using the view port.

B. Fixing Tolerance Level

Tolerance level is used for deciding coordinated pixels around the make sense point of the selected image. This tolerance level helps the user while entering the value. They need not remember the exact pixels value but can give the values around the exact make sense points within the given tolerance level.

C. Selecting Pixels Coordination

During the registration process, an image is selected and any part of pixels in that image is making sensed. That information is stored in the database for particular user.

D. Encrypting Data

All the information stored in database should not be visible for other users, so it is in encrypted form. Data Encryption Standard (DES) algorithm is used for encryption and decryption process. It is an internal process done by scripting language. This is used when hacker tries to retrieve data from the login session.

E. Application Maintenance

That is, to maintain the application with more and more security. The application is provided with users' details like username, password, address, phone no. state, a complete registration form. Also with a login window to acknowledge the user that they have entered a correct value.

Before the new system gets implemented various points are considered. It consists of various techniques and methods considered to develop proposed technique the premeditated technique remove all the work tension in the present system.

 Outcome of this work is shown in the fig 2-6.

Pseudo code for View Port Selection

```
{   Button1.Text = Get Image;
```

```
string    s1    =select    imgDetails.Cus_ID,img,xPoint,yPoint,tol    from    user_details,imgDetails    where

user_details.Cus_ID= + Session[id].ToString().Trim() +  and user_details.Cus_ID=imgDetails.Cus_ID;

con.Open();

SqlDataAdapter da = new SqlDataAdapter(s1, con);

DataSet ds = new DataSet();

da.Fill(ds);

Session[d] = ds.Tables[0];

string img = HttpContext.Current.Server.MapPath(uploads/images);   }
```

The results and discussion

Text Based Passwords are commonly used but it is really hard to remember. Due to increased demand and usage of image files, many image authentication methods have been developed. This overcomes the problems faced with text based authentication. Images are easy to remember and understand, thus reducing the load on users. The proposed design brings the solution of all the above problems. In the proposed technique, a user registers him by selecting his own interested image pattern, and this image is used for the rest of that users operations. Then the user needs to create a click point stream, on the selected image. Finally click point generated images are uploaded, this click point image is used for authentication operation instead of text based passwords. This procedure is shown in the fig 2-6. Experiments have proved that that the proposed technique is easier for users and difficult for attackers to choose the correct click point.

Fig. 2. User Authentication Form with help of input image.

Fig. 3. Retrieval of Image of click point selection.

Fig. 4. Uploading an image for creation of   Password selection.
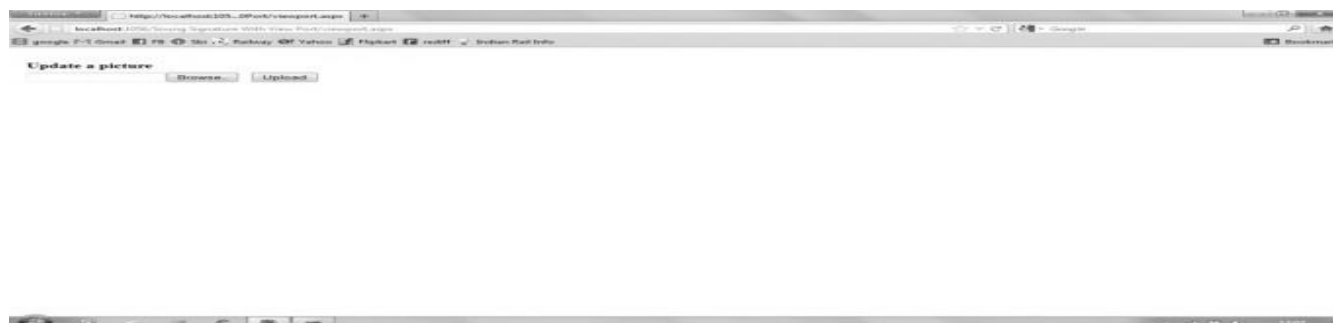
Fig. 5. After Upload the image user can Select image.

Fig. 6 . Selected image user can Enter a password.

Summary and conclusion

A. Conclusion

The proposed overcomes the exiting problem of   remembering the password and thus reduces the burden of the user. This technique is more useful and easier for users to remember as it is single point, instead of remembering a sequence of multiple points. It also allows the users to interact more with the system. The proposed technique makes it hard for attackers to guess the password. In the proposed authentication method for password generation, a less guessable password would be generated. This provides greater security than the existing content based security technique. It also gives the flexibility to the user to choose well built security. Advantage of Image based authentication password generation is that it makes it   harder to guess passwords and is t more effective than text based method

B. Future enhancement

When compared to other techniques like Pass Points the image based authentication password which is proposed here is a more secured alternative. This technique makes it very difficult for attackers as they have to acquire image sets for every client and then apply point selection analysis on each image. This complexity for attackers further increases due to the flexibility of the system to increase the overall number of images. Future work should include the modification of data of the existing users to maintain more secured login. Also include a thorough assessment of the viability of Image based authentication password generation as a verification method, with an extended term revision of how these hit point technique is used in all applications. The security of Image based authentication password generation also deserves faster inspection, and should deal with how attackers may develop further to counter the problem.

References

1. Radakrishnan.S, Neduncheliyan S, Thyagharajan k.K,A Review of Downlink packet scheduling Algorithms for Real Time Traffice in LTE-Advance Network, International Journal of Science and Technology, 9(4),2016,pp 1-5.

2. Elizabeth Stobert, Alain Forget, Sonia Chaiasson, Exploring usability effects of increasing security in click-based graphical passwords, in Annual computer security applications conference, ACSAC'10,2010, Austin, Texas USA,pp1-6.

3. Saravanan D ,Ramesh Kumar A, Content Based Image Retrieval using Color Histogram, International journal of computer science and information technology (IJCSIT),2013,4(2), pp 242-45.

4. Saravanan D, Dr Srinivasan S, Video image retrieval using data mining Techniques, Journal of computer applications (JCA), 2012,V(1), pp.39-42.

5. Chippy T,R.Nagendran, Defenses Against Large Scale online password guessing attacks by using persuasive click points, international journal of communications and engg. 3(3), 2012,pp119-127.

6. Aarthi R., Anjana K. P., Amudha J., "Sketch based Image retrieval using information content of orientation", Indian journal of science and technology,2016,Jan,9(1).

7. Sarath Chandra M.S, Raghava Rao K, Mohammed Ali Hussian, An effiecient Scheme for facilitating secure data sharing in decentralized disruption tolerant network, International Journal of Science and Technology, 9(5),2016,pp 1-13.

8. Vijay ananth S, Sudhakar P, Peformance analysis of a combined cryptographic and teganographic method over thermal image   using barcode encoder, International Journal of Science and Technology, 9(7),2016,pp 1-5

9. Srinivasan Nagraj, Raju G.S.V.P, Image security using ECC Approach, International   Journal of Science and Technology,   8(26),2015,pp 1-5.

10. Saravanan D, Ronald Tony A ,Text Taxonomy using Data Mining Clustering System, Asian Journal of Information Technology ",2015, 14(3), pp.97-104.

11. Padma E,Rajalakshmi S, An efficiene strategy to provide secure authentication on using TPM, International Journal of Science   and Technology, 8(35),2015,pp 2-8.

12. Sonia Chiasson · Alain Forget · Robert Biddle · P.C. van Oorschot, User Interface design   affecsecurity :Patterns in click based   graphical passwords, volume-8, No. 6, Year- 2009, pp. 387 to 398.

13. Saravanan D,Somasundaram V, Matrix Based Sequential Indexing Technique for Video Data Mining ,Journal of Theoretical and Applied Information Technology,2014, 67(3),pp725-731.

Corresponding Author:

D. Saravanan*

Email:sa_roin@yahoo.com