

# A Comparative Study of Various CAPTCHA Methods For Securing Web Pages

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**Abstract**— CAPTCHA is broadly used for to make system secure. Its aim is to avoid robotic form submission or prove customer individuality. A pattern matching algorithm is useful to user for imagery to see gesture and find similar matches. This technique is very hard to gain unauthorized access of data since crafty bit is to recognize gestures in the images. This technique is not feasible present day. This technique performs actions on the behavior of user gestures which make it distinctive and secure. A Human Computer Interaction between the computer and individual easily understand person language and raise the users are responsive interface. The gesture is the non-verbal type of message communication which enables the Human Computer Interaction interface. The gesture is much more skilled to reduce the utilization of most conspicuous an electronic devices which are the additional strategy to deal with computers. Scientists have just considered that Turing examination with the cartoon CAPTCHA is fun and amusing method. In this paper, authors have discussed various different methods of CAPTCHA to secure web page and user's individuality.

**Keywords**—CAPTCHA, Handwriting synthesis, Hindi script, Cyber security, Spam

## I. INTRODUCTION

Completely Automated Turing test to tell Computers and Humans Apart is mainly used for safety purpose for machine on the web to make sure that these responses come from an authorized person. An image of wrongly showing letters is changing quickly as if need it is created (Blum *et al*, 2004). CAPTCHA is generally used to prevent from spam. Spamming is achieved at different public email provider places and also at different forums as well as blogs too. Although there are many types of CAPTCHA are in used but they have not permitted at many times designed. For example Backdrop CAPTCHA is without any trouble hack with the help of easy understood computer vision skill techniques. CAPTCHA should perform such a manner that it must have easily able to understand by humans and also must ease to respond the progression (Blum *et al*, 2004). It ought to be hard for machines to understand. This ought to be just justifiable by people, while pontoons cannot comprehend the (H *et al*, 2006; Szirányi *et al*, 2004).

Our framework is very instinctive and effortlessly justifiable by people and client felt it more pleasing than annoying the traditional image based CAPTCHA. Traditional input devices are available for interaction with computer (Baird *et al*, 2003) such as keyboard, mouse, and joystick as well as a touch screen. In whatever way it may they do not give a natural interface. They make employ of the web camera to capture the given picture. The first step towards any hand based gesture recognition is hand tracking as well as segmentation. The Segmentation is a procedure for

discovering the connected region within the image (Suzuki *et al*, 2010). The Hand gesture might be utilized by the clients have to wear any information glove or may utilize the web camera for capturing the hand picture. Sensor devices are used in Data-Glove based methods for digitizing hand and finger motions into multi parametric data.

Now a day there are a number of researchers find out various security issues in convectional text recognition based CAPTCHAs. Malicious automated programs that introduce a very complex optical character reader has been spreading and these have the splitting conventional text recognition based CAPTCHAs. An image recognition based CAPTCHA for example Asirra is known as one of the most prominent solutions for enhanced CAPTCHAs. Since image recognition is a substantially more difficult issue for recognizing machine in comparison to the character recognition. In Asirra there are many photos of creatures are exhibited to a client and the client is then made a request to choose a particular creature in a test. For instance when the client is requested to "select all the cats" if given cat pictures are chosen accurately then the client is distinguished as a human (H *et al*, 2006; Lindeberg *et al*, 1998). Robots or Bots in which persons are able to identify the different number of an objects at a particular movement of time without any difficulty. Despites fantastic dissimilarities results in attendance of graphical objects but users are able to response a multiple number of requests as regards to the shape properties of an object as well as spatial relationships among what we perceive (H *et al*, 2006). We can also do so with amazing speed.

For example we can buy books or tickets by easily fill up the forms over the Internet. But due to malicious programs it may cause serious effects on different number of transactions. Very squandering and even decrease Internet assets. CAPTCHA test to differentiate computers and human one from the other strategy offered by an investigation gathering of Carnegie Mellon either people or automated computer programs. The examination of CAPTCHA engineers everywhere throughout the world after its appearance. The primary techniques partition into two sections known as optical character recognition based strategies and Non optical character recognition based strategies (Tygar *et al*, 2004).

In OCR construct strategies CAPTCHA techniques based with respect to optical character recognition systems. In this procedure the disadvantage of the OCR technique is not able to recognize perusing writings printed with bad quality and producing as well as duplicate copies. OCR based strategy experience the serious effects of the improvement of counterfeit consciousness, innovation which is also known

as AIT. The acknowledgment rate of characters in the image has been ever more elevated. Which results in an increasing number of spams to current two dimensions still image confirmation code (Tygar et al, 2004). In Non OCR constructs strategy implementation lies in the principle based on multimedia systems and which is majorly in some type puzzle like games. For the example PIX needs clients to select images in definite theme between photographs of a different theme (Tygar et al, 2004). And another web security is re CAPTCHA in which users must need to click on a checkbox to resolve with the help of recognizing pictures in the similar procedure. If the user fails then system to generate new re CAPTCHA (Malik et al, 2003). In section I introduction part is explained. In section II motivation part is explained. In section III literature review of various authors is explained. In section IV various methodologies are explained to solve the important problems. In section V conclusion of the paper is explained.

## II. MOTIVATION

The Distortion has to be connected in a controlled way to keep away from a creation character image which with some challenging levels. CAPTCHA should be more secure for the security reason. Create a CAPTCHA that takes less time to solve create a CAPTCHA that is easy for the user (Malik et al, 2003; Suzuki et al, 2010).

### 1. RELATED WORK ON CAPTCHA

Various sorts of the CAPTCHA have produced and have executed to demonstrate specific subject for human as well as sort of a program idea. There are several efforts for producing further efficient (Davis et al, 2008) accessible CAPTCHA including the users which uses Java. Script mathematical questions and common sense questions.

#### 1.1 Disordered CAPTCHA

In this kind of CAPTCHA specific string is prepared such that it is somewhat vigorously twisted. The twisting might be precise or in extent (Suzuki et al, 2010; Szirányi et al, 2004). These sorts of CAPTCHA are effectively comprehended by people in the event that they are somewhat misshaped.

#### 1.2 Image Based CAPTCHA

This type of CAPTCHA is of various sorts. Certain contain a gathering of the characters appeared on closer view with foundation picture containing commotion (H et al, 2006; Blum et al, 2004). There are a few sorts of commotion usually utilized by CAPTCHA contents to humiliate the acknowledgment of images by spot.

- a) Pixel clamor is of arbitrary shading which resembles the ancient grainy film or 3200 ISO pictures of your advanced camera.
- b) The Lines here and there of an arbitrary shading and edge once in a while .They formed a sort of matrix.
- c) Rectangles or circles in some cases loaded with shading good.

#### 1.3 Limitation in exiting system

A few sorts of CAPTCHA have not encountered the standards for producing desired CAPTCHA. The basic general form of the CAPTCHA is needs that the customer is for categories the letters or the digits for the fleecy pictures that appear clearly to screen (Blum et al, 2004; Blum et al, 2004; Szirányi et al, 2004). Image recognition CAPTCHAs confront a considerable measure of potential issues which

have not been completely contemplated. Changing over picture to grayscale and evacuate foundation clamor translation session records to get CAPTCHA words and social building methods like CAPTCHA unravel the business, irritating other site clients by conveying and request that they break CAPTCHA (Suzuki et al, 2010). By utilizing to upgrade the security of content based web applications. Different web page, web sites and other privileges provided by the network that are questionable for brute force attacks by programs or else for the computers known as this present time everywhere internet can Robots or Bots. They can be used to get unauthorized access to users account or on the other hand present a boundless number of service request for example email account creation for web connection requests. Such events regularly prompt manhandle of benefit making the server to develop possibly idle its resources. Therefore to overcome this problem of interruption by Bots CAPTCHA was introduced from the effective cause due to denial of service attacks.

Introducing CAPTCHA is the authentication technique which enhances the security and protects from an automated brute force attack. The sequence of strings generally appeared in the CAPTCHA can be easily recognized by an individual. But with the help of an automatic machine the operating system cannot be able to identify the objects. So the presentation of CAPTCHA turned into a progressive advance in looking after security.

Totally automated public Turing test is used to distinguish computers and human's one from the other image and make visible the arbitrary string which the user needs to sort to show a structure. This is an easy task for people however but is a serious issue for computers that need to utilize character recognition. For the most part since this shown string in disconnected ways which makes this is very difficult to decode task for the computers to decipher. CAPTCHA is broad safety efforts on the World Wide Web which keep away from automated programing from mishandling on the web administrations. They have requested that people do an assignment which computer cannot yet perform. For example reading, distorted, characters. Our examination investigated whether such individual person strengthen can be controlled into a helpful reason. Which changes over in advanced old written word by asking for clients to unravel checked words from books that electronic optical character acknowledgment neglected to perceive. We demonstrated that this method can duplicate content with a word precision over ninety nine percent coordinating the assurance of expert human transcribers.

A trademark CAPTCHA is an image containing a considerable measure of twisted characters that appears at the last of the registration form. Clients made a request to sort the characters to demonstrate that they are human or any automatic machine working the framework. Later computer programs are not able to read distorted text as people can. So CAPTCHAs substantiates themselves best against mechanized projects that errand to manhandle online administrations. Because of their usefulness as a safety effort CAPTCHA is utilized to ensure many sorts of sites including email suppliers, internet business destinations, informal communities and websites. A noble quality CAPTCHA framework must have the accompanying

characters (Davis et al, 2008; Varona et al, 2000; Muller et al, 2011; ChingL et al, 2011; Black et al 2000).

- (a) CAPTCHA should have readable characters.
- (b) Fast and easy to access.
- (c) Appropriate for all types of bots abuse.
- (d) A high quality CAPTCHAs must be strong and easily usable (Malik et al, 2003; Suzuki et al, 2010).

#### 1.4 Moving CAPTCHA

A moving CAPTCHA mostly easier for humans and very hard for computers, and looks nice too. In this type of CAPTCHA image or text is moving one pixel to another pixel then they are strong conceivable outcomes for surprising people from machines. Among the key properties of CAPTCHAs are the most effortlessly tackled by humans? They should utilize exact solutions should just be achievable by taking care of the fundamental artificial issue. They depend on they should to minimize automatic attacks and as well as the cost of the difficulties. Through the help of the program which is automated should beat the requesting of the persons and performs a similar undertaking date heap of content, sound, text etc. Video based CAPTCHAs have been proposed in which a large portion of have acquiesced to various types of attacks. (H et al, 2006; ChingL et al, 2011) static CAPTCHAs (Black et al, 2000). Tougher challenges will be presented if a specific user has small reputation and affords various wrong type answers lots of time (Malik et al, 2003).

#### 1.5 No CAPTCHA Re CAPTCHA

This is simple and new easy to use rendition intended to totally eliminate the issue of settling CAPTCHAs. In this type of CAPTCHAs, users click upon the checkbox in the widget. After clicking upon the check box page opens and we work on that website (Malik et al, 2003). This new sort is made of the idea that recognizing images with the help of similar articles. The test contains a model of image and nine major important images and the user is asked for to pick those that are comparable or same in nature or character to the sample. The test usually contains a keyword describing the content of the images which the user is required to choose. The number of exact images varies between 2 and 5 (Malik et al, 2003; Muller et al, 2011; Douceur et al, 2007).

#### 1.6 Text re CAPTCHA

These distorted texts are repaid when the advanced risk analysis considers the user to have a lower reputation. In this type of CAPTCHA user must type two words with space and both of words are in different pattern that make security of our web page (Malik et al, 2003).

#### 1.7 CAPTCHA TAXONOMY AND RELATED WORK

At this present time most CAPTCHAs in business utilize today are character acknowledgments.

a) Character acknowledgment CAPTCHAs including static images of contorted characters. It attacks generally incorporate expanding on optical character acknowledgment recognition progresses.

b) Audio CAPTCHAs are an alternate additional class however it disconnects the present work.

c) Third significant class picture acknowledgment CAPTCHAs comprising an item in movement with the help

of animations, videos and with the promising image schemas.

d) Fourth category is cognitive based CAPTCHAs PUZZLE like as  $1+1=1$ ,  $2+2=4$ , then  $3+3=?$  Questions like  $2+6=?$   $8+8=?$ . (W.H. et al, 2006)

How to become better for the various users capacity to perceive the characters?

a) The letters are offered as unbending items all together.

b) The background video and the frontal area character shading are firmly consistent in shading and each time keep a high complexity. This is recommended this is done to ease the cognitive heavy load on clients.

c) The random code words in which each have free however have covering directions that licenses better empower clients to recognize a conclusion to end characters.

d) The code words which are selected are chosen from desired alphabet. In which effortlessly confounded characters are excluded. (H et al, 2006)

#### A Naive Attack

One important technique to attack such type of schemes is the traditional optical character recognition techniques. This is very effective results in defeating character recognition still CAPTCHAs. The limitation of The Naive attack is that it is difficult to generalizable and also not robust to small changes in the videos. In what follows we make no assumption about a priori knowledge of the color of the code words. We assume that the centers of gravity for each path are equidistant. For achieving this we have applied a robust segmentation method that utilizes temporal information to improve our ability to recognize the characters in the video. (ChingL et al, 2011).

#### 1.8 Optical Character Reader

Optical character recognition transforms handwritten image or printed text type image into the machine coded form test. The pages are examined and the subsequent bitmap images are converted into test files by using optical character recognition software. This is a useful conversion in terms of text because the books can be found ordered and stored in such a type that can be easily examined and manipulated. One of the hindrances in the digitization strategy is that optical character recognition is far away from ideal at decoding the words in bitmap images of scanned texts. Optical character recognition cannot identify about twenty percent of the words. But the humans are more appropriate in transcribing such types of print. In Optical character recognition select 'k' frames randomly and perceive the frontal area pixels of the code word by getting their color and give reference color notice. The attacker would likely know this value since the clients are inquired. For example this type the colored moving characters. By then the length of the code word can be coincidental by finding the benefit most and left generally pixels in the frontal zone (Black et al, 2000; Tygar et al, 2004).

#### Binarisation

Binarisation is the technique that is used in optical character recognition in which an image change from color or

grayscale white and black. The task of binarisation is performing an easy way of separating the text or other desired image part from the background (W.H. et al, 2006; Douceur et al, 2007).

#### *Moving image object recognition*

The moving image object recognition is very advance technique that decodes moving image video .The video can be act as considering the flood for a single image that essentially gives various perspectives of a developing scene. Our ability is to locate the distinctive object in the image that go together also with the help of MIOR. In which we can find different objects. But it is succeeded in the decoding with all the characters in the given code word other than thirty three percent of the time moving object tracking apparatus for detecting and tracking one or more moving objects in an environment is provided (H et al, 2006).

#### *1.9 Google Reverse Image Search (GRIS)*

GIRS is an Image CAPTCHA breaker that is mostly used in RECAPTCHA for decoding purposes. The Google reverses the image search built by Krizhevskys deals with the technique is used to find out an object based on searching. In the event that the inquiry is effective it might give a better estimation of an event of the thing alongside a rundown of sites where it can be found and other accessible sizes of that image. While this is not a part of the Google API. We perceived the arrangement of the search URL so our module can reproduce the usefulness (Malik et al, 2003; Tygar et al, (2004).

We define several problems of different types of CAPTCHAs

##### 1. Text based CAPTCHA

In this CAPTCHA user faced some difficulty to enter the correct text. Some reasons that confuse the user identify the correct text. Use the various lines, various shapes, multiple fonts, font size variation.

##### 2. Image based CAPTCHA

It can be broken by OCR techniques. The People that have color blindness face many problems.

##### 3. Video based CAPTCHA

The size of files is large, speed of the video etc.

##### 4. Audio based CAPTCHA

The system is available in the English. It is not working for dumb user or people that have low listening power.

##### 5. Puzzle-based CAPTCHA

The user cannot identify the puzzle easily. It is time consuming (Tygar et al, (2004).

### III. LITERATURE REVIEW

(Tygar et al, (2004) suggested the term that CAPTCHA is the best technique for new applications and it is well known to everyone. It is currently used for many systems without known to public generator. In this paper authors proposed an adjustment that takes into consideration character level perturbations on a present synthetic handwriting generation method. This method has allowed for changing levels of on the CAPTCHA because is an important technique for CAPTCHA. Due to its important features it is a most prominent technique for security analysis. The focal inquiry in examining the security of a CAPTCHA is whether it is conceivable to body an automated software solver that can clear up the non-minor division of the difficulties. Along

these lines undermining the preface that the CAPTCHA is difficult to handle by personal computer. In this paper authors have also explained that to implement the CAPTCHA implementation is not easy and difficult task while not take caring at design time. In this paper authors have studied and explained instance of the loopholes in present login site using text based CAPTCHA. Their concentrated nearby of standard bank of china and showed that with some specific methods. The CAPTCHA technique on its distinctive site can be easily split. Finally they will give a couple of recommendations for CAPTCHA draftsmen to adjust our CAPTCHA execution security in the coming future.

(Douceur et.al, 2007) created another structure to recognize human clients and also computer programs. This technique is coming into the picture and became famous by Alta vista site. With the change a basic disorder English words presented to the client and afterward the clients are making a request to submit it accurately. On the off chance that a match is discovered at that point it is considered as human otherwise as a bit. We recognize a progression of proposals for CAPTCHA designers as well for attacker and conceivable future rules for delivering more reliable human and computer distinguishes. The authors suggested that the CAPTCHA execution is unsure and dangerous without attentive plan. In this paper they gave various practical results to the loophole in the present login site utilizing content based CAPTCHA. They are focused on site of standard bank of china and demonstrated that with some particular strategies .The CAPTCHA conspire in it is the site can be effortlessly split.

### IV. PROPOSED METHODOLOGY

In the depth study of CAPTCHA the security issues should be measured and distinctive existing strategy can be given the better methods. The principle object is tied in with the outlining methodology of CAPTCHA which can be effortlessly reasonable and secure from

(a) Analyze the diverse parameters for outline the CAPTCHA.

(b) Design text based CAPTCHA.

(c) Implement on Character with rotation on the Characters.

(d) Analyze spacing choice between characters.

(e) Dynamic length of Characters for CAPTCHA.

The dissimilar alteration needs to consider for plan the security of the web application. This subdivision gives the means execute the proposed work. The combination of the arbitrary character and numbers will be utilized to create new CAPTCHA.

a. Concentrate current method of web security including CAPTCHA.

b. Research on these methods to recognize the issue.

c. Stream advancement of new proposed methods.

d. Implementation to any language.

e. Create result.

The client is human can be utilized it enhances ease of use against complex modification. By use of well-defined images which can be easily known by the majority of the clients which will enhance ease of use of picture base CAPTCHA. Test analyzes accuracy response time on different size images with a different distortion level.

DE CAPTCHA Pipeline: DE CAPTCHA uses the five stage pipeline.

#### 1. Preprocessing

This is the primary phase of the CAPTCHA contextual is separated and the CAPTCHA binarized and put in storage in the form of matrix values of binary. Changing the CAPTCHA into values of binary. Changing a paired framework make whatever remains of the pipeline simpler to perform. As the rest of the algorithm is working on well-known actions of the object.

#### 2. Segmentation

In this segmentation phase of DE CAPTCHA it is trying to attempt different segmentation techniques to achieve it. The paint pail algorithm is used by the most common organism color filling methods. This is a well-known method because it enables us to segment the CAPTCHA lettering regardless of whether they are at a point therefore it is not consider as a neighbor.

#### 3. Post Segmentation

After segmentation stage these segments are arranged alone to make the respect less difficult. While at this stage the segments are dependably in standardized size.

#### 4. Recognition

In the planning mode this stage is used to accomplish the characterized what each letter looks like after the CAPTCHA has been divided. In the testing mode each of the classifier is to be used for restructuring of each character.

#### 5. Post processing

In the post per-processing stage the classifier gives output is enhanced form compare to previous one. For example spell checking is achieved just for the classifier output for slash dots because it is well known that this CAPTCHA technique utilize lexicon words. Utilizing a spell checking enables us to build our exactness on Slashdot from twenty four percent to Thirty five percent.

#### Design Principles

After finding from the estimated results as well as for testing with DE CAPTCHA we have to achieve the various methodologies to solve the problems. In order to a CAPTCHA fashioner need to head toward making plans for attacker to solve the above problems. Anti-segmentation methods are very powerful in the anti-recognition methods and in also essential design sound. For example collapsing is very effective if the size and the quantity of characters are arbitrary.

#### Core features principle

The following desired principles are applied in the designing of CAPTCHA

1. Randomize the CAPTCHA length
2. Randomize the character size
3. Wave the CAPTCHA

#### Anti-recognition

Utilize anti-recognition strategies to rise.

1. CAPTCHA security
2. Do not use a complex char set

#### Anti-Segmentation

1. Use collapsing or lines.
2. Be careful while implementing

#### 3. Create alternative schemas

#### Hand Detection and Recognition

##### Models (a) Hidden Markov Model

Hidden Markov Models deal by way of the energetic aspect of the gesture. Gesture is separated from a succession of video pictures by following the skin shading blobs identified with the handover enthusiastic about a body look space fixated on the look of the customer. The objective is to recognize two projects of motions deictic and emblematic. The picture is sifted utilizing a snappy query ordering table.

##### (b) Using Time Flight Camera

This methodology utilizes 'x' and 'y' projections of the image in additional to optional intensity highlights for motion classification. The methodology utilizes a 3 D time of light sensor which has the huge improvement and make simpler and gives segmentation. The motions utilization of the framework clarifies a better separating potential along the two image axes. As consequence projections, the hand onto the 'x' and 'y' axis are utilized as highlights for the characterization.

##### (c) Naive Bays' Classifier

Naive Bayes Classifier is an important and quick technique for static hand gesture recognition. It is totally based on the principle that arranging the diverse motions as indicated by geometric based invariant which are achieved from image information behind the segmentation. Subsequently not at all like accepts of other affirmation strategies .This technique is not required for skin color. The gestures are extracting from each frame of the video with a foundation.

##### (d) YUV color space and camshaft algorithm

This technique manages the recognition of hand gestures. It is done in the fulfilling with five stages. Initial a digital camera records a video conduit of hand motions. Every one of the casings contemplates and afterward utilizing YUV shading space skin color based division is performed. The YUV shading framework is being used for forming the chrominance and energy. The image Y demonstrates force while UV indicates chrominance constituents. Currently the hand is separated by CAMSHIFT algorithm. Since, the hand is the major associated region. We can divide the hand of the corpse after completing this successfully the exact position of the hand centroid is done with each frame. This is finished by first calculating the zeros and major time and after that with this data the centered is measured. Presently the distinctive centroid indicates are joined frame a direction. This direction demonstrates the way. If the hand act of moving and hence the hand following strategy is identified.

## V. PROPOSED SYSTEM

In our framework we have produced an arbitrary character set and request that client indicate signal comparing two specific characters. Client hub is caught and procedure to recognize on the off chance that it speaks to demonstrate character. If the gesture is correct CAPTCHA is unraveled and the client is dealing with a person.

a) Finding key points using SIFT Algorithm: Scale invariant stamp change is a kind of algorithm in computer

dream to identify and clarify nearby highlights in pictures. The algorithm was distributed by David Lowe in 1999. It is created as a technique to extricate and depict key focuses. Which are vigorous to scale, pivot and change in clarification. There are five stages to execute the algorithm.

*b) SIFT Algorithm:*

*(1) Scale-space extreme detection*

The primary stage is to search above the scale break utilizing a distinction of Gaussian (DoG) function to distinguish potential intrigue indicates that are invariant scale and introduction.

*(2) Key point localization*

The site and the size of every candidate point are settled and the key point is picked in light of occasions of steadiness.

*(3) Orientation assignment*

At least one introductions are allocated to each key point site in light of local image slant directions.

*(4) Key point descriptor*

An element descriptor is made by processing the slope size and introduction at each image test point in a district around the key point area. These samples are then amassing into compass perusing histograms short shape the substance more than 44 locations with 8 introduction containers. So each key point has a 128 component highlight.

*(5) Ratio of space for the descriptor vector*

The correspondence of highlight point can be settled by taking the proportion of room for the descriptor vector from the close by neighbor in the space of the second nearest. Utilizing this algorithm we read an image as well as calculated key focuses portray and areas by applying an edge. Descriptors known as P by 128 matrix where P is the number of key focuses and each row gives an invariant depiction for one of the p key focuses.

*1. Text Based CAPTCHA*

Text is easy to understand for users as after submitting CAPTCHA text user can log in to the secure web page. High collapsing of character is difficult to understand by users.

*2. Image Based CAPTCHA*

Image Based CAPTCHA are easy for users as after check the image secure webpage can easily open. We can finally log into the secure web page. The only disadvantage of image based CAPTCHA is high colored background.

*3. Audio Based CAPTCHA*

It is helpful for blind people who can see something. In the audio based CAPTCHA it is difficult for the blind user when the network quality is poor or disconnected.

**VI. CONCLUSIONS**

Text based CAPTCHA systems have some limitations and issues. Image based CAPTCHA have been proposed as an elective test based CAPTCHA yet they have not been excessively capable, making it impossible to supplant content based CAPTCHA. CAPTCHA arrangement is more in contrast with that required in text based strategies. We have seen that reCAPTCHA and NuCAPTCHA is the most secure and usable CAPTCHA that helps in distinguishing between humans and computers. We have also introduce different techniques in the module to produce the challenges that user reCAPTCHA and NuCAPTCHA are vigorous as it is against the two assaults that utilizations optical character

recognition and moving image object recognition innovation. reCAPTCHA and NuCAPTCHA is exceedingly usable as it is simple for people to effectively recognize the arrangement of characters. In this paper we have been proposed the CAPTCHA based security algorithm methods which can be used for authentication and provide the secure communication of information over the inter-network. The proposed work is not implemented yet. The Distortion has to be imposed in a controlled way to maintain a strategic distance from production of same ambiguity character or picture which with a few challenges level can be recognized.

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