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## Identifying the Authorized Users in the Network with a New Methodology

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**ABSTRACT:** Authentication is very important to identify the user in the network. To identify whether the system is used by a human or not we use the CAPTCHA. CAPTCHA is an acronym for completely automated public Turing test to tell computer and human apart. Due to the enormous growth of web applications, security over internet has become a challenging issue. Most of the web applications are facing the threat of internet bot. Internet bot is an automated script which executes over the web forms. During a last few decades research have been done on CAPTCHA systems. This paper gives the work done on CAPTCHA systems till date and here we propose a new method of Captcha that is helpful in performing and identifying the bot and a human.

**KEYWORDS:** Captcha, Automated Script, Internet, Security.

### I.INTRODUCTION

With the emerging technologies and the advent of internet providing security is always been a vital issue. The latest advancements always make it tough to identify whether a robot is using the system or a human. The robot executes auto generated scripts on web applications and creating a security threat. Hence we need to provide much more security to identify a bot and a human. Mainly we have the security threat on web based transactions. Though we have several authentication methods like generating of OTP, 3 d secure etc. One of the technology that is been used is CAPTCHA. "Completely Automated Public Turing test to tell Computers and Humans Apart." This Turing test helps in identifying that the human and a bot is different and the transactions that re performed are by human itself. This term was initially coined in 2003 by Luis von Ahn, Manuel Blum, Nicholas J. Hopper, and John Langford. The most common type of CAPTCHA was first invented in 1997 by Mark D. Lilli bridge, Martin Abadi, Krishna Bharat, and Andrei Z. Broder. There are different applications of Captcha like preventing spam comments in blogs, protecting registration in websites, Protecting Email ids from Spammers, preventing dictionary attacks, preventing from worms and spam's. There are different methods in Captcha used in protecting the web applications.

### II.RELATED WORK

These days all the web applications, e-commerce applications, social networking sites, blogs etc have been a part and parcel of day to day activities. Most of the websites mainly which perform financial transactions uses CAPTCHA. It is a technique that performs a Turing test which identifies the bots or automated generated scripts. If the user passes this test then he is given the access to perform further access in the website. There are different methods of identifying the bots and they are categorized in the following way.

Text based CAPTCHA:

These are the most widely used in web apps. In this method the system gives a set of distorted letters and where the user have to identify the characters and type the same in the text box given.

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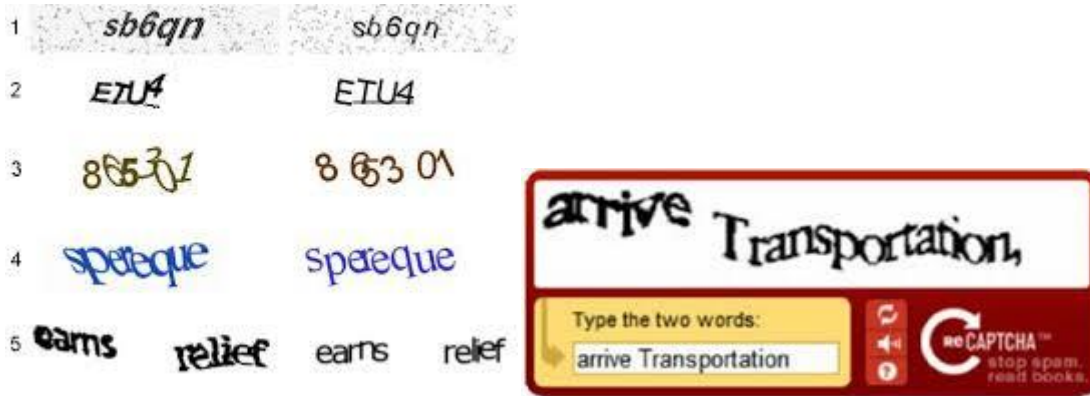


Fig 1: Text Based Captcha and Re Captcha

## Image Based CAPTCHA :

In this method the user needs to identify the images and a drop down of those images will be present and the user has to select from that drop down list the correct word of the image. Another way is the name of the image is given and the user have to select the image from the given database.



Fig 2 :Image based Captcha

## ASSIRA:

Another image based CAPTCHA is Assira which means Animal Species Image Recognition where an animal is displayed as the image. The user has to identify the correct image from that available species and then only the user is authenticated to perform his further tasks.



Fig 3: Assira based Captcha

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Multi Modal Captcha:

Another advancement in this technology is Multi Modal Captcha where image and text are combined. And also the name of the image is inscribed on the Captcha along with few other wrong names. The user has to identify the correct name on the image and place it on the text box available



Fig 4: Multi Modal Captcha

DIC:

Dynamic image based CAPTCHA is another method where the user has to recognize the matching image exactly from the set of available other pictures available dynamically. There is also a limit for the number of attempts in this method not exceeding up to 5 attempts.

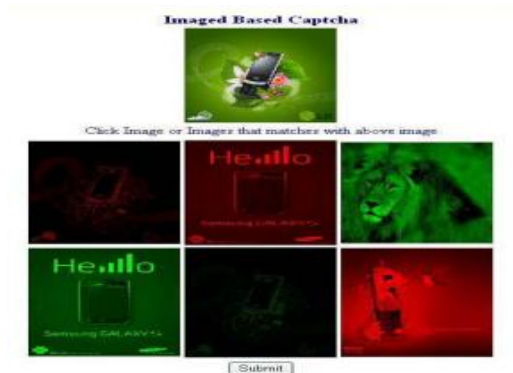


Fig 5: Dynamic image based Captcha

Puzzle Based Captcha:

Puzzle based Captcha is another type where a puzzle with basic mathematical knowledge or simple puzzles of images are given. The user need to solve the puzzle and place the answer in the required location intelligently solve the given puzzle

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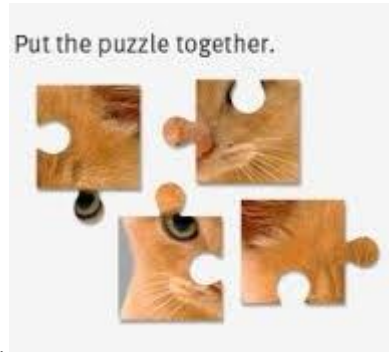


Fig 6: Puzzle based Captcha

Audio Based Captcha:

Audio Based CAPTCHA is where the user have to pass the test with audio or voice recognition.

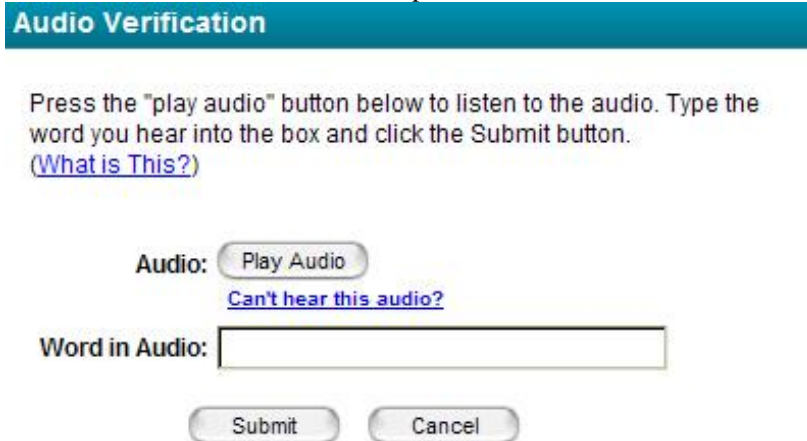


Fig 7: Audio Based Captcha

## III. PROPOSED MODEL

We Propose a new type of CAPTCHA, technique where an image and alphabets are combined. The alphabets which are present on the image are corresponding to the image itself. The letters are written in cursive writing and bold letters and also will be a combination of both upper case and lower case letters. The letters are jumbled all over the image.

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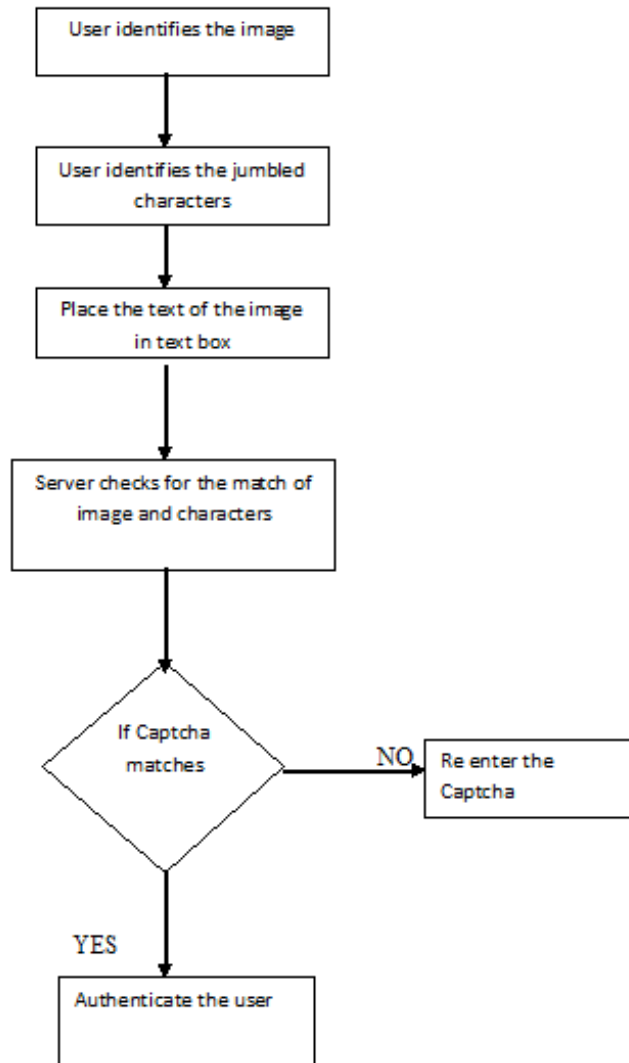


Fig 8: Flow chart of proposed Model

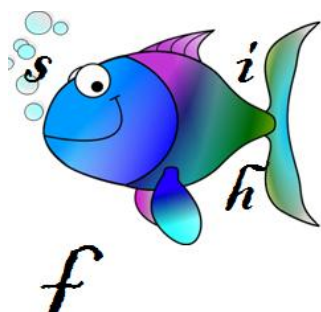
When the user needs to be authenticated, he must first identify the jumbled letters of the picture and place them in the text box provided. Now the server checks for the correctness in the system and finally authenticates the user.



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*Enter Captha in Text box*

This methodology helps more secured way in finding the bots and human and also it overcomes the weakness of regular CAPTCHA which have conflicts in identifying the letters of different styles and numbers. Since it is easier to identify the images, anyone can easily identify the captcha and authenticate himself. The key guidelines for any CAPTCHA is accessibility, image security and script security are achieved in this model

The following weakness can be overcome in this proposed model

- 1) **Digit vs digit:** In many cases 8 may look like 6 or 9. Depending on what type of font is used by the system 7 may look like 1 and vice versa.
- 2) **Letter vs letters:** If distortion is applied for example “cl” can be confused with „d “nn” can be confused with „m or „rn and “vv” can be confused with „w.

Here in our model it is easier to identify the digits and letters based on the images and makes the user process easier and time is not wasted or identifying the distorted letters and digits.

## IV.CONCLUSION

Security with Captcha has become a key standard for all the web applications. In this paper, we proposed a new Captcha technique which over comes the weakness of the traditional and current using Captcha techniques. There are many research work carried on Captcha which is advancing in the field of artificial and machine learning. As we all know that technology is growing day by day there is a need to enhance ourselves in proving security which is a major threat for the digital world and a lot of research is needed in the field of security through machine learning.

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## BIOGRAPHY

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