Subtitles Generation using Audio based ReCAPTCHA

#1Pavankumar Kolluru, #2Taslim Shaikh, #3Shreepad Bidwai, #4Aditya Mannarwar, #5Kapil Shamlani

1pavanwithu@gmail.com,
2taslimsk1994@gmail.com,
3shreepadbidwai@gmail.com,
4aditya.mannarwar@yahoo.com,
5kapil.shamlani@gmail.com

#12345Dept. Computer Engineering, G.H.R.C.E.M Pune, India

ABSTRACT

To provide security from automated scripts or bots a technique known as CAPTCHA(Completely Automated Public Turing Tests to TellComputers and Humans Apart) is introduced.CAPTCHA has become a standard for securing web applications from Internet Bot and almost all the registration web forms use this test. Re-CAPTCHA is an improved version over CAPTCHA that helps to utilize functions of CAPTCHA as well as helps in utilization of keywords used in CAPTCHA. In this paper we are using Audio ReCAPTCHA to identify bots and to generate subtitles for movies automatically.

ARTICLE INFO

I. INTRODUCTION

The world in which we live today is filled with a tremendous amount of technological innovations. Internet among this has emerged to be one of the most well-known forms of development; it has helped people to connect with the world outside besides has also lead to a great development in the industrialization, globalization,etc [2, 3]. The tasks that modern computers have not yet been able to provide is efficiency and consistency; are optically recognizing images of characters (OCR) and distinguish between humans and computers[4]. ReCAPTCHA is a system thatsolves boththese problems. Image ReCAPTCHA, itdistinguishes between automated scripts or bots as well as is used to digitize the printed/hard copy of the books by using one known and other unknown keyword as shown in Fig 1.Of these two goals, the second is likely the more critical, as to determine whethersomething is human or computer [5]. It is an important task for palliating the spam that is scourge. Unfortunately, though, there are many ways for spammers to defeat this goal, which is described in the remaining part of this paper.

Figure 1: Image ReCAPTCHA

II. LITERATURE SURVEY

1. An audio CAPTCHA to distinguish humans from computers; Year: 2010

In this paper, a novel sound based CAPTCHA is proposed. Unlike currently existed sound based CAPTCHAs; this CAPTCHA exploits the gaps between human voice and synthetic voice. The user only needs to read out a given sentence to pass the challenge. A user study has also been conducted to verify the usability of the CAPTHA. It has

been proved that the success rate for human voice is approximately 97 percent and the attack success rate is 4 percent [1].

2. A Study of Audio Captcha and their Limitations; Year: 2013

In this paper, we have studied over the various types of CAPTCHA have grown yet. A brief review has been carried out on the Audio Captcha and list out the limitation in sound Captcha in diverse methodologies. A huge scope for research exists in outlining new and novel CAPTCHA procedures that are easy to use, require less server handling and offer enhanced security control against bots [6].

3. Understanding Captcha: Text and Audio Based Captcha with its Applications; Year: 2013

In this paper, we have studied CAPTCHAs are an effective way to counter bots and reduce spam. They serve dual purpose of help advance AI knowledge. Applications are varied from stopping bots to character recognition and pattern matching also some issues with current implementations represent challenges for future improvements [7].

III. EXISTING SYSTEM

As we sit down to watch a movie the first and most important part that we take into consideration is the language in which the communication takes place between the actors. If it is known to us then there is no problem but what if the language spoken is unfamiliar at this time we look down at the caption that are displayed at the bottom of our screen. The timeline on the bottom shows the in-that is the subtitles that appear up on the screen and out- that is when the subtitle disappear from the screen [8]. The words of the subtitles can be given in as an input directly or can be imported from a file. Each sentence is then slotted into the predetermined in- and out- times as seen in the Subtitles Data tab.Once complete, the subtitles are exported out and embedded into the subtitle track of the appropriate video format. So it still consumes time but the actual process isn't complicated [9].

During the past few years subtitles were been generated manually, but currently we use a combination of manual as well as automatic speech recognition software even then the speech recognition system do not guarantee to provide us error free subtitles as there are a variety of accents and language that are still not recognized by speech recognition software. Today professional subtitle generators usually work with specialized computer software and hardware where the video is digitally stored on a hard disk, making each individual frame instantly accessible [10]. Besides creating the subtitles, the professional subtitle generators usually tell the computer software the exact positions where each subtitle should appear and disappear. For cinema film, this task is traditionally done by separate technicians. The end result is a subtitle file containing the actual subtitles as well as position markers indicating where each subtitle should appear and disappear. For cinema film, this task is traditionally done by separate technicians. The end result is a subtitle file containing the actual subtitles as well as position markers indicating where each subtitle should

appear and disappear. These markers are usually based on timecode if it is a work for electronic media for example television,DVD,videos or on film length if the subtitles are to be used for traditional cinema film.

IV. PROPOSED SYSTEM

In this paper, we make an attempt to show the ReCAPTCHA system that presents two audio clips consisting generally words or/and numbers. One of the audio clips contains a string, the value of which the system does know, but the system does not know the value of the words and number in the other clip. Users are asked to type in the value of both audio clips given. If the user inputs the correct value for the known clip, it is assumed that the user is a human, and assumed that their input for the second clip that is the unknown one is correct as well. At this point, the system has determined that the user is a human, but for it to achieve satisfied result; several additional users must confirm the value of the unknown audio clip. They too are presented with two audio clips – a different known clip, and the same unknown clip. If they respond correctly to the known audio clips again, it is assumed they responded correctly for the unknown clip. If their input for the unknown audio clip is the same as the previous one given in by the user, the system assumes that the value that has been put in by these people is valid, and thus learns the value of the letters in the audio clip (achieving satisfied result). Of these two goals that as stated, the second issubtitle generation which we can generate easily by mapping the keywords which are gained as CAPTCHA values to the index and its timing is also considered. By using this method we can remove the supervising ReCAPTCHA which condition of professional subtitle generators that is the get all the values from CAPTCHA and generate subtitles accordingly.
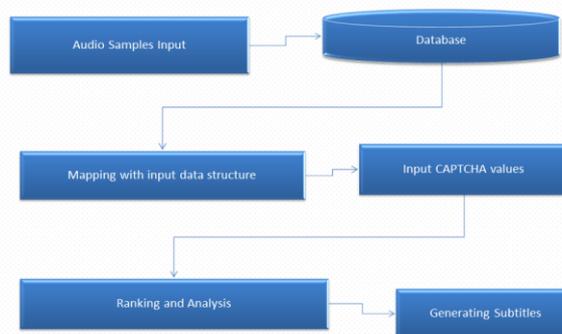

Figure 2: Audio ReCAPTCHA

Figure 3: System Architecture

The above architecture describes proposedsystem in which admin provides audio file as an input that is used to generate samples of that particular audio file. The obtained samples are stored in databases which are mapped with the data structure and their indexes.

Later these mapped audio samples are given to different clients as an audio CAPTCHA to verify the bots on that website. The system stores the keywords which are gives to particular CAPTCHA's and ranks them with respect to the number of keywords provided by clients; analysis is done by comparing various inputs given from users with threshold value given by admin. All the analyzed and ranked keywords are arranged as per the index as well with their timing to generate subtitles.

V. CONCLUSION

Normally subtitles are generated manually by the industries so that the language can be understood by viewing subtitles that are seen below the movie screen. It is time consuming as well as costly, since manually generated subtitles often require multiple people which can understand that language, which can be hard to find since there are thousands of languages in which movies are made.

In this paper, we have implemented a system that can generate the subtitles by using the technique of audio recaptcha. This helps us to obtain the subtitles automatically which is cost effective and the times upon the website on which the system is implemented, where the speed of subtitle generation is directly proportional to the number of users registering to that particular website; as the number of the users increases the number of given CAPTCHA keyword are also generated which is used to create subtitles.
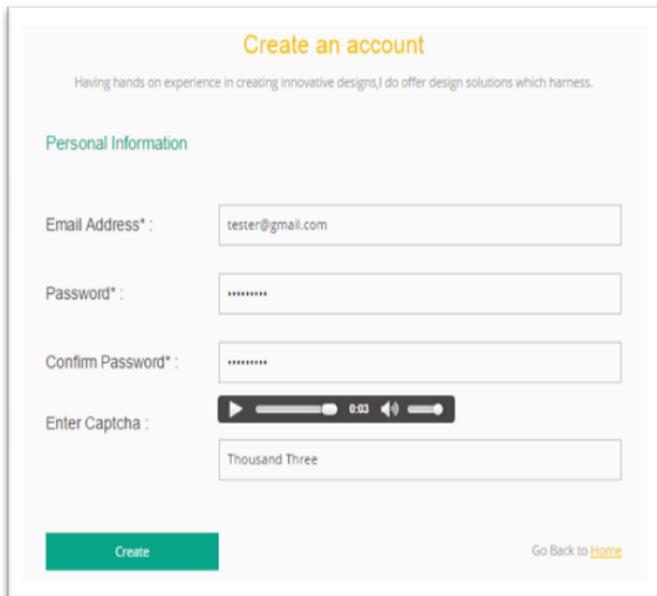
Screenshots

Figure 1: Registration form

The above figure shows us the Audio ReCAPTCHA that is attached to the form.

Figure 2: Active Status

The figure given above explains the audio samples that are currently active.

Figure 3: Completed Status

The figure given above provides us the information pertaining to the completed status of ReCAPTCHA and their related keywords.

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