



SPEECH BASED RECOGNITION FOR USER AUTHENTICATION

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Abstract— Natural Language Processing (NLP) is nothing but the communication of the computer and the human as it spoken as own language. The paper proposes a way to give a password as safe, secure and authentication using message digest 5 algorithms. Here, the create login page like the username and password. The username and password is given as a speech and the speech is converted into text. The speech is converted to text with the help of webkit speech recognition API it is like a google assistant. Here, the username and password matches it results as a login successful, otherwise it results as login failed. This approach ensures the security and authentication of the password given by the user.

Keywords— Speech Recognition, Speech to Text, Authentication, MD5 algorithm and Webkit speech recognition

I. INTRODUCTION

Now-a-days, the natural language is growing technology in the IT industry because it is full of automation. Most of them are using Natural Language Processing. Natural Language processing is communication between the computers and the human (In this the human can speak their own language).The natural language processing is most useful for speech recognition, Converting Speech to Text etc.

Most of the people have stored the data in online and some apps and to keep their data safe their using some locks like keeping password. So, the disabled people or the paralysed people etc are difficult to keep their text based password and they can use speech password. It is terribly comfy and easy to use.

Some people keep the same text passwords to the internet banking, phone lock, accounts etc. So, hackers can easily hack the password.

To overcome this problem use the speech recognition system, password is given as speech and the speech is converted to text.

For the disabled or the paralysed or the uneducated etc. are difficult to keep the text based password or alphanumeric password. Now-a-days the hackers are easily cracking those passwords. Not only the hackers when some emergency time you can share your password to your friends they can also use your password at anytime and anywhere. Text passwords are very difficult to remember. When compare to speech password the text password would take more time to login.

Hence, this paper proposed a method to overcome those difficulties, this speech recognition system will helps to keep the password safe and secure using MD5 algorithm.

The hackers will not hack easily because the password is encrypted and stored into database. Speech to text based username and password are very easy to use and easy to remember. It takes less time to login. It is user-friendly and increases the level of security and authentication.

The remaining paper is organized as follows: In the next section, we give an existing system of the speech recognition system. Section 3 describes the proposed system. Section 4 gives details of the experimental results. Section 5 concludes the paper.

II. RELATED WORK

In this section, we summarize some recent studies on speech recognition and MD5 algorithm in that how the speech is converted into text that use some algorithm, how the speech extracted and matching of password and stored the user details security and authentication

A. Human voice converted into text

R. Kavitha^[1] proposed approach to give a human

voice and the voice is converted into digital data. The speech or audio sample is extract using the Mel frequency cepstral coefficient and the extract sample is checked for password matching using of dynamic time warping. The extract password will check with the already stored in database it only done for limited Tamil words. This system also deploys for the safe and security.

B. Speech is converted into text using hmm

Prasanthi ^[2] proposed an approach of speech is converted into text using of hmm. Here, using the mel frequency cepstral coefficient it used to for the wave form of the voice and the pre processing of the audio sound. It reduces the background voice and then it converts into text. This system mainly used for the deaf people.

C. Authentication for user details

Linxia Zhong ^[3] it also mainly focused on the security and authentication of user details. Here, for the security and authentication process they data is encrypted (original data is converted into unknown code) and stored into mssql database using message digest5 algorithm. Like the data encrypt and stored in the database the hackers hack the password and they did not identify the original data. So, the data is safe and secure.

III. PROPOSED SYSTEM

The proposed system consists of method which converts speech to text for authentication. Created database used to store the username, email, phone number and password. The person who already registered that information is stored in the database. Those who not registered they will register the account and then go to login. In the login page the username and password will display. In the username and password give as in text-based type or speech to text type and in the speech to text the input give through the microphone and it recognize as a speech or sound wave and then the speech is converted into text using the webkit speech recognition API, and the speech is converted into text .While register the account and the details stored in the database the password will be encrypt and stored in mysql database using message digest5 algorithm. Then last process is login check in this process the encrypt password will be decrypt and the compare with the given password it matches it results as login success, otherwise it result as username and password are not matched.

A. Input speech signal

In this module, the first we create a database and named it as recognition and create a table to store some useful information like a username, email, phone number and password. To create an account, it will ask information like username, email, phone number and password, and the information is stored in the database. While register the information the password will be encrypt (plain text is converted into unknown code) using MD5 algorithm. Those who have registered the account go to login page, in the login page the information of username and password. The username and password are both of speech to text type or only text type. In the login page, text input can be given directly or the speech input can be converted into text type.

In this the input is given as a speech and the speech is recognized continuously when the user stops the speech and it stops the recognition.



Fig.1. Register the account for login

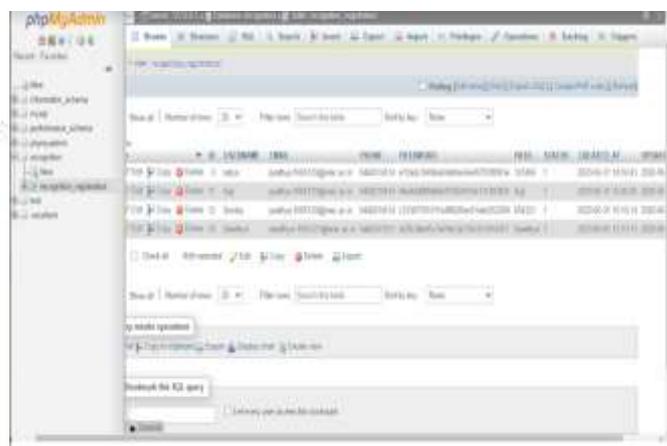


Fig.2. Database for account login

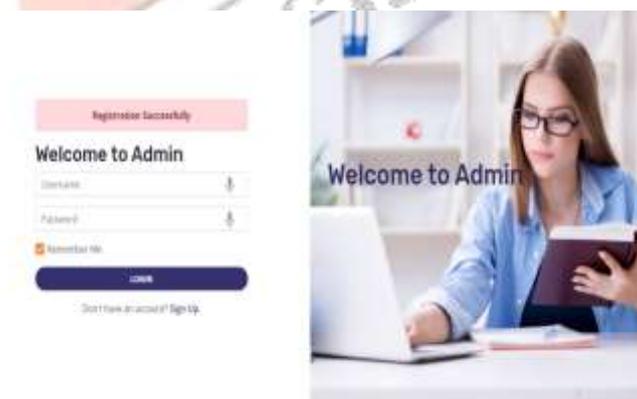


Fig3. Login page

B. Converting speech to text

In this module the username and password is given as a speech through the microphone. Using of webkit speech recognition it recognize the voice or the speech of the user. The webkit speech recognition handles a event of speech recognize in this event the it recognize a voice and stored the results in the intermresults and the result are get converted into text using of transcript. The value stored in the transcript it displays in the login page

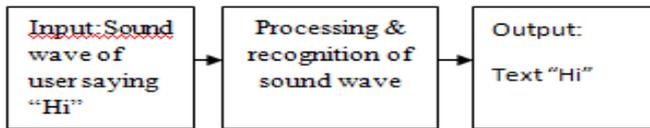


Fig.4. Converting speech to text process

IV. RESULT AND DISCUSSION

This section shows the results and discussion of the proposed method.

A. Experimental setup

The proposed system is done in the system with php and mysql. In this php is used for creating a login page and the MySQL database is used to store the information of the user details. Webkit speech recognition is used to convert the speech into text, Windows 7, RAM 8GB, Intel processor (i5).

B. Experimental results

This section shows the sample results of the proposed method. Fig.7. shows the database of the user details. Using of message digest algorithm the encrypt (plain text is converted unknown code)



Fig.4 speech is converted into text

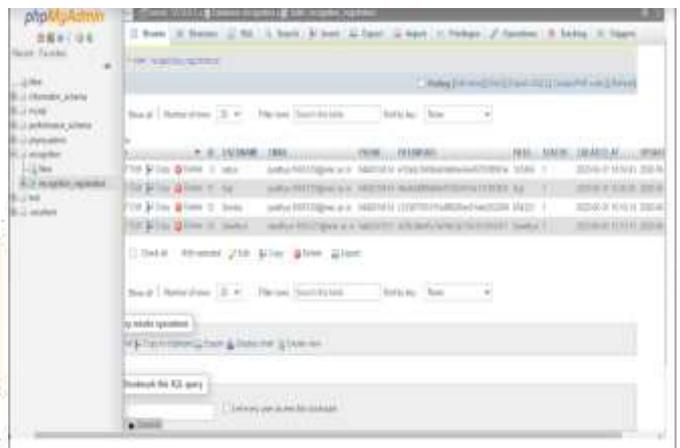


Fig.7 Database of user details



Fig.8 Encrypt data

C. User details validation

In this module, the encrypt password will be stored in the database and then it decrypt using message digest5 algorithm. Then the decrypted password value and the given password will matches it gives as a result as login successful, otherwise it results as a username and password will mismatch



Fig.5 Login success



Fig.6 Login failed

V. PERFORMANCE EVALUATION

Voice samples	No of input given	No of correct count	No of wrong count	Accuracy
Sample 1	10	8	2	80
Sample 2	10	9	4	90
Sample 3	10	7	3	70
Sample 4	10	8	2	80

VI. CONCLUSION AND FUTURE SCOPE

The main goal is to give the password safe, security and authentication. While encrypting the password in the database the hackers cannot easily hack this because the data is encrypted using MD5 algorithm. It is mostly used for disabled person. It is easy to use and eco-friendly. The accuracy of speech to text conversion is 80%. This system is mainly use of high level of security and authentication.

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