

Language Translator Using Raspberry Pi

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ABSTRACT

This paper describes the language translation from one language to another language. The language translation process is done with the help of low cost embedded device such as raspberry pi. The translation is done within 2 seconds and the recognition process is done up to 30 languages. In this process, there is some Equal Error Rate (EER) of 13%. The microphone is used to accept the origin language and speaker is used to produce the output such as destination language. The automatic language detection is not possible. The translation process uses Microsoft translator & it is used to translate another language.

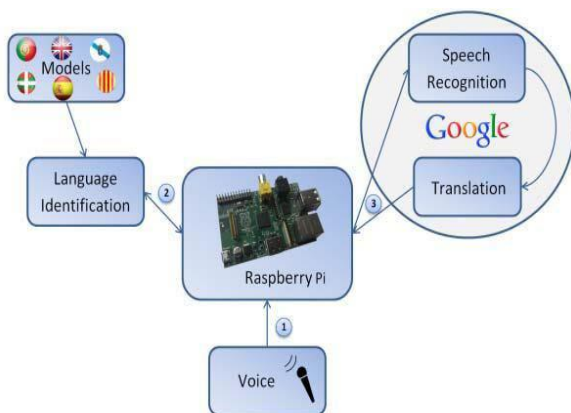
Keywords: Microsoft translator and MP3 player.

1. INTRODUCTION

During past 20 years the language translation processes is to be to increase. The speech translation process is to convert the speech phrase from one language to another language. The speech translation is used to increase the human-to-human communication. It should provide reliable and accurate translation with minimum delay duration. The language translation process is done with the help of low cost embedded device such as Raspberry pi (RPI).

2. EXISTING SYSTEM

In existing system, the language translation process is present in three main process. The first process are used to record the voice that is given for input. The second process are used to identify the system language and handle the audio file. The third process are an audio conversion to the help of online translation. The audio are uploading the online transcription and the language must be translated into the help of web server.



In this system the Raspberry Pi model B is used. It is used for speaker verification process. The system must be operated at 1GHZ in order to increase the system speed. The program must be optimized and it is used for RPI to recognize and translate the language. The audio files were recorded with the help of USB microphone and sampled in 1600 sampling rates.

It is given for raspberry pi & it is used to identify the language what the speaker is spoken. The identified language is return to raspberry pi and it is given for speech recognition. The speech recognition uses Google speech api, it used to translate the destination language. Finally, the player to produce result. There are six languages only translated into this system. This language are Catalan, Spanish, English, Portuguese and Basque.

3. PROPOSED SYSTEM

In the proposed system, the raspberry pi 3 model B is used for language translation process. It has 1GB RAM. The 5V power supply is used for Raspberry Pi. The microphone is used to record the speaker spoken the language. It is given for audio interface, then the audio file is converted into wave form. The wave file is given for Raspberry pi.

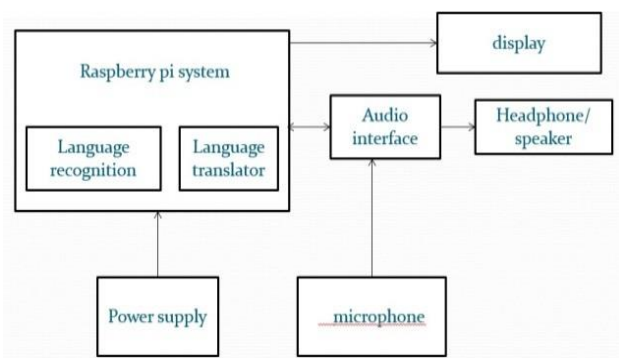


Figure 1. Block diagram

The Raspberry pi uses the coding to give wave file in the specified URL. Then the wave file is converted into text with the help of Google speech api. Then, the Microsoft translator is used to convert origin language text to destination language text. The converted text is stored in mp3 player. The output will be played in mp3 player. There are 15 languages are used in the language translation. These are English, Hindi, Bulgarian, Catalan, Czech, Danish, French, German, Italian, Japanese, Malay, Thai, Turkish, Polish, Korean.

4. RESULT AND CONCLUSION

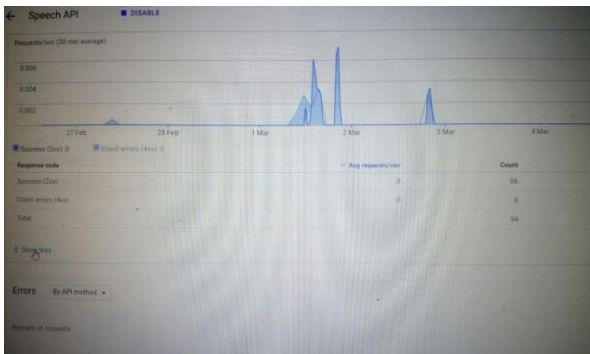


Figure 2. Response code access on recording of voice

Fig 2 shows the response code access to client. The total of 96 files is tested and the success file is 86, the error file is 8. These results was obtained using a recorded voice file. In this system there are 15 languages are used and future work is to develop more languages.

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