Robust Voice Recognition on Query Based Artificial Commands

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ABSTRACT

Speech technology is one of the fastest growing modern engineering technology. It Implements the desktop application development for the software that can mainly be used for speech recognition, speech generation, text editing, tool for operating machine through voice. In This proposed project is capable to recognize the speech and convert the input audio into text. It enables user to perform operation such as open and close application and window, select text, read text and system termination. It is also us ed to open the application and also web commands.

Keywords: Speech recognition, speech selection, speech separation

I. INTRODUCTION

Speech recognition has a wide scope for application in various areas and disciplines of life. It has many potential benefits and is useful to people I many walks of life. Nearly 20% of people in the world or suffering from various disabilities, many of them are blind or unable to use their hands effectively. The speech recognition systems in those particular cases provide a significance help to them, so that they can share information with people by operating computer through voice input. This project is designed and developed keeping the factors into mind and a little effort is need to achieve this aim. Some speech recognition system require "training" through which the corresponding function is performed. But here it checks for the voice and matches with waveform.
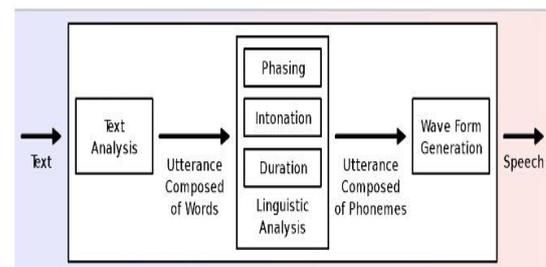

Figure 1. Algorithm for Speech Recognition

II. ALGORITHM USED

A. SPEECH SYNTHESIZER:

A speech synthesizer is used to convert the written text into spoken language. Speech synthesis is also called as Speech to text conversion. The text that is produced from speech is as follows:

2.1 STRUCTURE ANALYSIS

Process the input text to determine where paragraphs, sentences and other structures start and end. For most languages, punctuation and formatting data are used in this stage.

2.2 TEXT PRE-PROCESSING

In the language, it is used to analyze the input text for special constructs. In English, special care is needed for acronyms, dates, currency amount and many other forms. Other language needs processing for these forms and most other language has a specialized processing requirement. The spoken text is converted into speech in the remaining steps.

2.3 TEXT-TO-PHONEME CONVERSION

Convert each word to phonemes. A phoneme is a basic unit of sound in a language. US English has around 45 phonemes including the consonant and vowel sounds. For example, different people speak in different pronunciation. Different languages have different sets of sounds (different phonemes). For example, Japanese has fewer phonemes that is not found in English, such as "ts" in "tsunami".

2.4 PROSODY ANALYSIS

Determine appropriate prosody for the sentence using the sentence structure, Words and phonemes.Many of the features of speech other than the sounds of the words being spoken included in Prosody. Prosody includes the pitch (or melody), the timing (or rhythm), the pausing, the speaking rate, the emphasis on words and many other features.

2.5 WAVEFORM PRODUCTION

Finally, the waveform is produced for each sentence using phonemes and prosody information. From the phoneme and prosody information speech can be produced in many ways.

III. EXISTING SYSTEM

In existing system speech recognizer is found in mobile as a secondary option, but it is not used in its full capacity and capability. The application of this is inbuilt speech recognizer is limited. This operates with 3 steps.

1.The user has to setup the recognizer. 2.Noise and not reach to the perfect command or speech not recognize. 3.These processes can be implemented by speech separation and speech selection concept. This obviously increases the time of execution, this is the drawback of this system.

3.1 DISADVANTAGE

The user has to perform the above operation each and every time. This increases the execution time and only supports limited languages. It cannot work in the noisy environment and require expensive equipments.

IV. PROPOSED SYSTEM

In proposed system, it is used to execute high level voice commands given by the user. This finds great advantage in now fast moving world where the user has to give only voice commands to finish his job. Consequently this application is expected to reduce the time delay in executing commands with GUI.It is also efficient in saving energy.

4.1 ADVANTAGE

Handicapped individuals operate a computer using the voice. Hands-free computing is any computer configuration where a user can interface without the use of their hands, an otherwise common requirement of human interface devices such as the mouse and keyboard. Specific commands are recognized by speech recognition and upon the corrected instructions can be given to systems without the use of hands. This project is useful for driver while driving or to an inspector or engineer in a factory environment.Just like visually impaired also have found computer useful in their life.

V. SYSTEM ARCHITECTURE

This software is designed to recognize the speech, it converts speech to text and text to speech. The user is asked to input the voice command via the microphone.
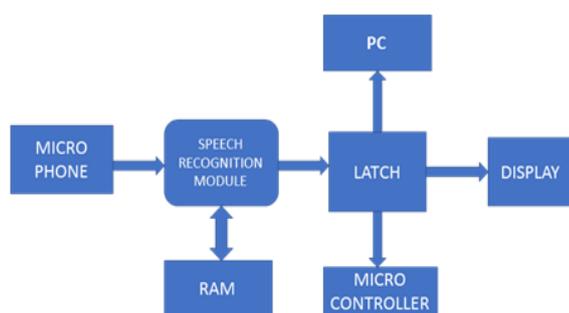
Figure 2. System Architecture

The microphone intakes the command and the analog signals are converted to digital ones in the internal circuit. These digitized signals are processed as acoustic model. The windows grammar verifies the command as a valid one in its default language. Then the speech recognition model comes into act. The speech recognizer application in windows 8 is connected through .NET in visual basics where the operational code is written in C# and Visual Basic invokes the application in frontend. Once the command is identified the application contemplates the command with the inbuilt code to execute the corresponding function. The program is essentially executed at run-time.

VI. CONCLUSION

Brief introduction of the technology and its applications in different sectors starts with the proposed system. The Project Report is based on software development for speech recognition. Later stage, we can discuss different tools for bringing that idea into practical work. After the development of the software finally it was tested and results were discussed, few deficiencies factors were brought in front. The advantages of the software were described and suggestions for further enhancement and improvement were discussed, after the testing is over.

VII. REFERENCES

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