

Voice Command System Using C# .Net Application with Artificial Intelligence

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Abstract -Voice recognition is one in all the short emerging technologies inside the engineering international. The programs of Voice popularity are many in recent times and it gives high capability advantages. Among the overall international population 20% of the humans are tormented by different disabilities, inclusive of blind or not able to apply their arms. For such sort of bodily challenged people this voice reputation device extensively help them to do their mission with none physical touch with the hardware, they could command the computer through voice to proportion the facts. The major objective of this paper is to assist the bodily challenged people; a small effort is made to obtain this goal. This paper has the functionality to well known the speech and convert the input speech that is within the type of audio into text, it now not solely has the flexibility to transform the speech to text however moreover it'll carry out fundamental functions like " save. Open, exist" a document with help of voice input. It moreover helps the person to open absolutely extraordinary device applications like MS-word, paint and additionally calculator. A preliminary degree of attempt for supporting the people with problems to also function with few operations as stated above. It can be enchanted in the destiny with many different others and the paper might be updated with the same

1. INTRODUCTION:

Speech is that the primary mode of language among individuals. Speech is that the maximum common technique of changing mind amongst human beings. The clearness of speech and accessory are the important thing to carry the message properly within the communicate procedure. Speech is regularly processed in paperwork Speech Synthesis and Speech popularity. It can also be by way of synthetic method created. The bogus introduction of speech is introduced up as Speech Synthesis.

The word "Synthesis" is delineated with the aid of exploitation the vocabulary, via combining the constituent factors of separate fabric or outline entities into one or unified entity. The recognition of speech indicators by means of manner of the tool is delivered up as speech popularity. The approach of mapping an acoustic speech sign to textual content is known as Speech reputation. On this the computer the pc receives the patron speech and interprets what is foretold, this enables the user to govern by the pc by means of way of voice, alternatively of having to apply the mouse or keyboard, or instead simply dictating the contents of a document. There are potentialities of one of the matters that may be potential in Speech recognition. Initial method is Command and manage during this the applying

will acknowledge running textual content have to be pressured to match with the list of references on the stop of the paper and additionally perform relevant operation within the device with the help of these instructions.

The second method is Dictation. In this the speech recognition engine has to perceive the spoken phrases and its some distance complicated and moreover need to decide which spelling of further sounding phrases is needed. The content material is only based on the preceding in addition to the following phrases to attempt to help decide. CnC is on the whole referred to as as context-unfastened recognition; due to the reality this context evaluation isn't required with Command and manage reputation.

On the other hand, control speech reputation and commands are commonly no longer speaker unbiased. Dictation speech reputation is constantly speaker-dependent. It manner from individual to character the manner of accent, diction, pitch and lots of such elements varies. For powerful results, recognizer requires a speaker profile to be installation.

This paper defines the speech popularity system which is specifically Command and Control software. The .Internet framework is used to increase this utility, which we can develop best using Microsoft Visual Studio. The utility programming interface is furnished with the aid of the Microsoft organization which allows the consumer to obtain the speech popularity in windows utility, through along with the speech recognition and speech synthesis namespace files. The speech reputation engine affords the capability to convert the speech to text while the speech synthesis presents the potential to convert from textual content to speech. Meanwhile the speech API act as an interface between the software and the speech reputation and speech synthesis engines.

The Microsoft employer advanced a Speech utility programming interface so that you can put in force the speech reputation and speech synthesis. The speech utility programming interface acts as a bridge among the application and the speech engines. The interaction among the application and the speech utility programming interface is treated through the .Internet framework namespace called "System. Speech". This "System. Speech" namespace is available best in .Internet framework version 3.0 and above. It offers the interaction of certain variety of classes.

2. LITERATURE SURVEY:

The concept of speech popularity commenced somewhere in 1940s, almost the 1st speech popularity program became

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seem around 1952 on the bell labs, that become about popularity of a digit in a noise unfastened surroundings. Forties and fifties remember as the introductory length of the speech reputation era, in this time paintings changed into completed on the introductory paradigms of the speech recognition this is computerization and statistics theoretic models. In the sixties we have been capable of recognize small vocabularies (order of 10-one hundred phrases) of isolated phrases, primarily based on easy acoustic-phonetic property of speech sounds. The key technology that had been advanced during this decade were, time normalization strategies and filter banks. In seventies the medium vocabularies (order of 100-1000 phrases) using easy template-based totally, sample reputation methods have been recognized. In eighties massive phrases (a thousand-unlimited) had been used and speech popularity troubles based on statistical, with a large variety of networks for managing language infrastructures had been addressed.

The maximum crucial invention of this era become Hidden Markov Model (HMM) and the stochastic language model, which collectively enabled effective new methods for coping with unbroken speech recognition hassle successfully and with excessive accuracy. In nineties the key technology evolved for the duration of this era had been the techniques for stochastic language know-how, statistical mastering of auditory and language models, and the methods for implementation of large vocabulary speech knowledge systems. After the 5 many years of research, the era of speech reputation has ultimately entered bazaar, reaping benefits the cease customers in various approaches. The challenge of making a gadget that capabilities like an clever human is still a first-rate one going ahead.

3. PROPOSED WORK

There are various packages for Speech recognition system. All those programs are made using various frameworks inclusive of mat lab, sphinx, java, .Net and many extra.

Hence, it is a emerging technology, developers find it difficult to work in this technology. But it is very easy to understand both speech synthesis as well as speech recognition, once they step into this field of technology. Where as compared to normal human speech and a computerized speech it is very powerful and understated that developer needs to understand and utilize accordingly.

Even after 40 years of research over this field of speech technology, still they have some noteworthy limitations. It will not be efficient as human-to-human communication. Having that limitations and strengths of the speech technology in mind we should handle the input and the output accordingly.

In order to understand advanced features of the speech technology the Microsoft speech API will help you. It is mandatory for the developer to know the pros and cons of the speech technology to make wise decision according to the objective.

4. WORKING

A Speech recognition application will plays the subsequent primary operations:

1. Initialize speech recognizer
2. Create a grammar for speech reputation
3. Load that precise grammar into speech recognizer
- 4 .Register for the speech recognition occasion notification
5. Create a handler for speech reputation event

There are two things to take care of when it comes to speech technology as mentioned above they are

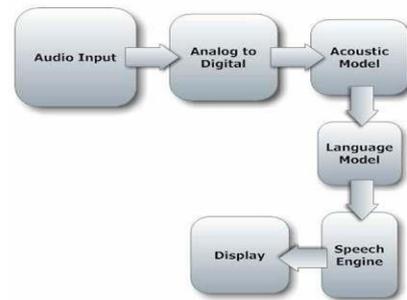


Fig.2: Speech To Text Conversion

As shown in the above fig.4.1 the audio input is converted into text through various process, which is the main objective of the Speech recognition engine.

4.1 Speech Synthesis

Speech synthesis is nothing but the conversion of text into speech, it is mostly called as text-to-speech conversion.

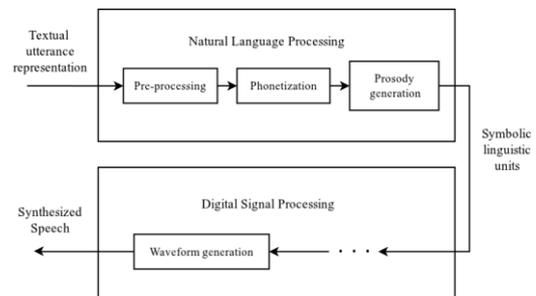


Fig. 1: Speech Synthesis

4.2 Speech Recognition

Speech Recognition is the straight opposite of speech synthesis, whereas this converts the speech into text, and it is mostly called as speech-to-text conversion.

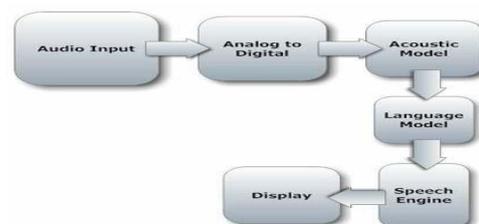


Fig.3 : Speech Recognition Process

4.3 Opening Application

It can be opened using command prompt or just double click on the application as normally to application. The



below diagram is the application of speech recognition system developed using C#.NET.

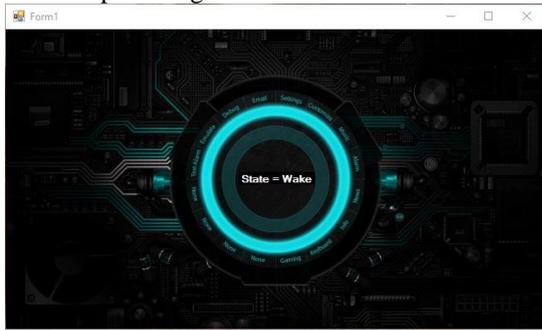


Fig.4 : MARS

The above fig.4.3 is the application developed, which comprises of both the Speech Recognition and Speech Synthesis. According to the commands given by the user it performs the operations inside the computer.

5. TECHNOLOGY USED

In this we are using C# .net framework, C# is a simple, modern, elegant, general purpose and type safe object oriented programming language. It helps the developer to develop various kinds of .NET framework applications. C# can be used to make different applications such as windows application, database applications, client-server applications, XML web services, etc.

6. SOFTWARE USED

6.1 Microsoft Visual Studio

Microsoft Visual Studio is an included development surroundings (IDE) developed by way of Microsoft. It is mainly designed for developing windows applications, but it can also be used to develop web services, web applications, web sites, even mobile apps can be developed using visual studio. It uses various platforms to develop such applications such as windows forms, Microsoft Silverlight, Windows Store, Windows Presentation Foundation and Windows API.

7. ADVANTAGES

7.1 Advantages

- It can perform all the basic voice commands available in the list of commands
- It has ability to open and read a file
- Shutdown, lock and restart the computer through the voice commands
- Opens different windows applications using speech input
- It is especially user friendly to people with disabilities

8. RESULT

The below is a Graphical Representation of Voice Command Recognition Success Rate

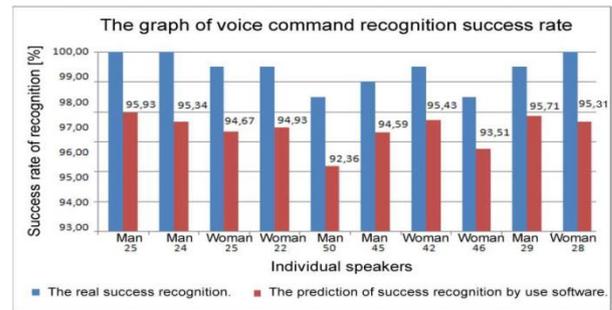


Fig 5 : Graphical Representation

9. CONCLUSION

Hereby we discussed about the speech technology at first and we then surfed to how the speech recognition and speech synthesis work. This paper has been developed with the basic operations which we use daily within our daily life and it can be developed further with the user feedbacks and requirements.

10. REFERENCES

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