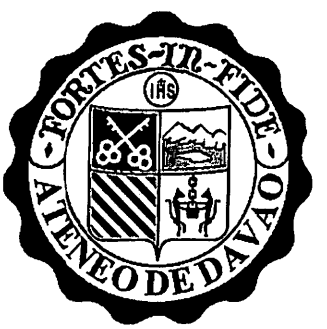
Voice Activated Currency Converter in Windows Platform



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Voice Activated Currency Converter in Windows Platform using CMU Sphinx

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ABSTRACT

This study is about developing a Voice Activated Currency Converter in Windows Platform. It uses a voice recognition toolkit which is called CMU Sphinx. This in turn benefits the disabled individuals to fully utilize this application. A person who lacks the ability to utilize the keyboard and mouse devices and who are visually impaired can use microphones as the alternative for input. It would also improve the usage of speech recognition and text to speech engine in terms of its precision and output. Using voice commands it allows the converter to convert different currencies.

Keywords:

Voice Recognition, Converter, Text to Speech

CHAPTER 1

INTRODUCTION

Currency converter applications are designed to convert one currency to another with the given monetary amount using the current values of any corresponding currency. These are widely used in any situations where people need to convert or check the monetary value of a currency to another. However, some users lack the ability to utilize the keyboard and mouse devices and are visually impaired. So the group decided to develop a voice activated currency converter that performs currency conversion. It will be used to detect speech and turn it into a command. This voice activated currency converter application will use speech recognition to detect voice inputs like monetary values, currencies and executions. It will also apply speech synthesis concept and can answer the user's queries verbally. The application can recognize speech and can convert answers into speech.

CHAPTER 2

REVIEW OF RELATED LITERATURE AND WORKS

1) Microsoft adding speech recognition tech to Windows 8, next generation products by Todd Haselton

- Microsoft's team is working on implementing a speech recognition software feature into its new Windows 8 operating system which runs on personal computers and windows phone, it's also implementing the feature to Bing search engine, Kinect and Xbox, Azure and other products.

2) Speech Recognition Interface Design for In-Vehicle System by Zhang Hua and Wei Lieh Ng

- Speech Recognition applied in vehicles. Uses basic voice commands such as playing a specific song according to the voice signal transmitted.

3) Speech Recognition: Theory and C++ implementation, Volume1 by Claudio Becchetti, Lucio Prina Ricotti

- This is about developing ASR or Automatic Speech Recognition using C++ programming techniques. It also provides practical solutions for ASR problems such as multi-speaker continuous speech recognition. This contains detailed theoretical, mathematical and technical explanations of

ASR and vital sources of information for researchers, developers, and project managers that is related to ASR.

4) Building Intelligent Systems by David Forsyth

- This is just a PowerPoint presentation created by David Forsyth and Paris Smaragdis. It's mentioned here the case study of intelligent audio which means making machines understand sounds. To do that people or experts can "Train" or "Teach" a machine or a computer to detect familiar sounds. It could be the verbal content or the tone and pitch of the audio signal being transmitted to the device. It was mentioned that the concept of voice recognition devices in elevators are also used for surveillance. Such as when suspicious sounds where detected it would execute alarm sounds and it was 96 percent accurate during the test recordings with actors.

5) Voiced Based Smart Elevator System by Ananya Mukherjee.

- An Elevator powered by Electric Motors, uses drive traction cables, counterweight systems or uses pump hydraulic fluid to raise a cylindrical piston. It is basically a vehicle that is used to transport people or goods vertically between floors of a building. This elevator uses speech recognition which matches voice commands like "one", "two", "three" to operate the elevator system. A seven segment display is also found inside the elevator to indicate the destination floor number. Speech to text

conversion is performed by the voice signal of the elevator to produce input to the seven segment display. It uses Infrared sensors to detect and count the number of people entering the elevator enclosure. This device is used to avoid overloading problems. It has a voice alert system which converts text to speech conversion which specifies the destination floor number on reaching the designated floor.

6) Voice Driven Calculator in VB

This calculator program is written in Visual Basic that uses Microsoft Speech API. It is basically similar to other standard calculators but the only difference is that uses voice command to work. It works at approximately 99% accurate for a particular user only, but yields different results to other users.

7) Calculator Recorder (Voice Activated)

It is calculator that's used for surveillance. It has a recording function that is up to 12 hours. The device is hidden within the calculator. It also has a 32Gb SD Card inside which contains the recording tool that activates through voice command. It uses less power when not recording to increase operating times higher than 12 hours.

8) Speak n Talk Calculator Lite by Norman Lee for Android

- Speak n Talk Calculator can be able to recognize spoken compounded mathematical equations. For example you can say what is negative 2 plus 2 times 5 divided 3 minus 4 point 5 (-2+2*5/3-4.5) ? The Speak n Talk Calculator will respond with the correct result. You can also use the number keys to type in equations like a normal calculator. Other features include the Speak n Talk Calculator to tell you jokes, just say "Tell me a Joke"

9) Voice Calculator - Dictation & Speech Recognition

By Gladtiding, Inc.

Voice Calculator is powered by an advanced voice recognition engine. Simply ask your phone and it will calculate and speak the answer in real human voice. However, it can only perform standard mathematical operations. With Voice Calculator, ask your phone "one million" "divided by" "five" "equal"? It speaks the answer back to you.

Voice Calculator is designed to let you easily switch between the traditional finger input mode and the voice input mode. Voice Calculator does NOT require Internet connection to function. No cellular connection, no Wi-Fi needed Voice Calculator is the next generation smart calculator. It is your personal math assistant!