

Voice controller mobile android application

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Abstract. Mobile devices are becoming an indispensable part of daily lives. This system has been developed interactive android application to assist and provide the support helps people such as blind and other physically limited people who face. They will be done for outgoing calling to his family and also the area around them. Speech recognition is technology that uses desired equipment and a service which can be controlled through voice of the android smart phone. An Artificial Neural Network (ANN) is an information processing paradigm that is inspired by the way biological nervous systems, such as the brain, process information. The device proposed here is an interactive android platform, which is capable of recognizing spoken words. We propose to developed interactive android application and also added some features which are currently available in android based smartphones such as attending for a line calling feature and out-going calling feature, over the voice commands which can run on the tablet or any android based phone. Speech recognition have a data set to translate between users' descriptions and the labels in the database, which has entries on the speech recognition (sounds and patterns) that make up the sound.

1. Introduction

Technologies are closely related to the modern way of life, but exception for Childhood Blindness (CB). They aren't independently move, especially blind and motion-impaired peoples. [7-8],[11] As our society farther expands, there have been many supports for second-class citizens, disabled. One of many supports that are urgent is the guarantee of mobility for blind people [1-3],[4-6]. With the rapid growth of wireless communications, the need for voice recognition techniques has increased greatly. Voice applications based on voice interfaces, voice recognition, and voice dialogue management can help users to be focused on their current work without extra effort for hands or eyes. Speech recognition is technology that uses desired equipment and a service which can be controlled through voice by blind, but other people also often face this problem, Sighted users often find them inevitably placed under situations where non-visual interaction is required [7],[10-11]. We aim purposed an android application which supports voice commands and application is developed for the children aged from 4 to 15 years and visually impaired peoples. After unlocking the mobile phone the application will be launched without any voice command. Computational technique based clasification of speech recognition deals with determining the identity of a given voice segment using a predefined set of samples. The systems application consists of the data train, list command, testing, help. It's accept voice command and perform the operations according is it. It's accept voice command and perform the operations according and to translate the



voice-to-text and then produces output in the form of voice. It performs basic functions such as line call, out going phone call, browser, BBM and operations of contact (such as add, training, list command, testing, show, delete, help). Previously the children from 4 to 15 years old and visually impaired people and they has been operate a system. They are operating the phone keys manually by remembering the position of keys. But in case for interactive android smart phone application, just have to operate the phone by voice command. The blind children face of challenges daily in communicating with his family and people around them. They has depend on their sighted colleagues for making a phone call and accessing other mobile functionalities. This system is a voice recognizing application for mobile phones that allow access to most of the functionalities of the phone and will make it possible for visually impaired children to connect with the society. The sighted user's people with limited reading ability can also use this application if they are involved in activities that prevent reading (i.e.: driving or other eyes-occupied situations).

2. Literature Review

Speech recognition is the process of identifying the sounds by the spoken word [12]. In other words, the user speaks to devices that use speech recognition applications to recognize what is being said. The word - spoken words will be transformed into a digital signal in a way to transform sound waves into a set of numbers which are then adjusted to the code-specific code to identify the word-the word. The results of identification of the spoken word can be displayed in written form or can be read by the device as a command to do a job, for example, to opening and closing an application in phone automatically with a voice. Speech recognition requires a sample of the actual words spoken from the user. Sample words will be converted into digital form and are stored in database. Voice matching is the process of matching the sound made when the voice is inserted and compared with the stored. Voice matching audio has similarities with finger printing technique. The process should be able to recognize the audio signal based on certain characteristics. Artificial Neural Network (ANN) existed since 1943 was made by the neurophysiologist Warren McCulloch and Walter Pitts logician with a combination of some simple processing units that can provide overall enhancement on the strengths and capabilities of computing [2]. Technologies and innovation advances for visually impaired people are possible. Other developers have proposed an application convert your voice message in to text format while sending message and text message into the voice format when it receives message. Early attempts, voice input and input for surfing was adopted for the blind people. Application will be used to create artificial speech is called a speech synthesizer, and can be implemented in software or hardware products. A text-to-speech system converts normal language text into speech. However, the disadvantage of this is that the developer has to design a complex new interface for the complex graphical application to be browse. Considering google play has a voice guide that tells the user every thing that it's happening in the device (line call, incoming phone call, etc.) that are used by blind people. But it is not available for out going call and to do something via speech.

3. Purposed System

Speech recognition technology is being implemented in many ways. A system purposed design the required application through the Android Software Development Kit (SDK) to develop a variety of tools and APIs. It's works on the Linux kernel and the Android system uses C / C ++ libraries.

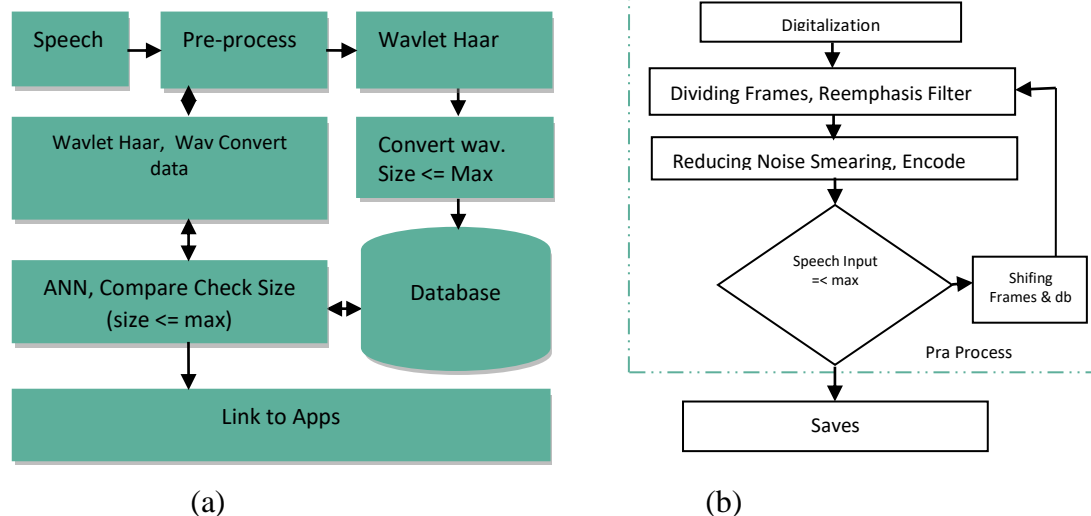


Figure 1. (a) Block diagram of voice recognition, (b) Flowchart System for add data training of samples

There are several well defined steps for the process of voice recognition. For determine the type of sound, the results obtained will be compared with four data of voice in the database that will be created by easy CB system and have produced patterns contained in the sound (see Fig. 3b). The nature of these steps, as well as how each step is implemented, but similar methodology is followed by system (see Fig. 1):

- The voice that will be incorporated into the application.
- The sound wave is divided into evenly spaced blocks.
- Each block is processed for important characteristics, for example strength across various frequency ranges and convert for data WH.
- Attempt to associate each block with a apps (i.e., line call and out going call) using this characteristic vector, this is the most basic unit of applications producing a string of line calling.
- The speech recognition process, to search the word whose model is the most likely similar command to the string of voice for line call which will produced from four data of voice in the database. A spectrum analysis of the block is typically being performed (see Fig. 1b). This can be done with a bank of frequency filters and Wavelet Haar (WH).
- Opened/closed applications to be accessed on a smartphone by user.

4. Result and Discussion

Having a system, which "understands" human speech and enunciates what is being typed Speech to Text, and Text to Speech is an ever growing area within mobile devices rises. The

basics of using the very powerful Speech Recognizer. When users speak a voice app can filter. If you want to start a service to do something in the background, show an activity as a visual cue and start the service in the activity. The blind children from 4 to 15 years old and visually impaired people and they has been start an activity.

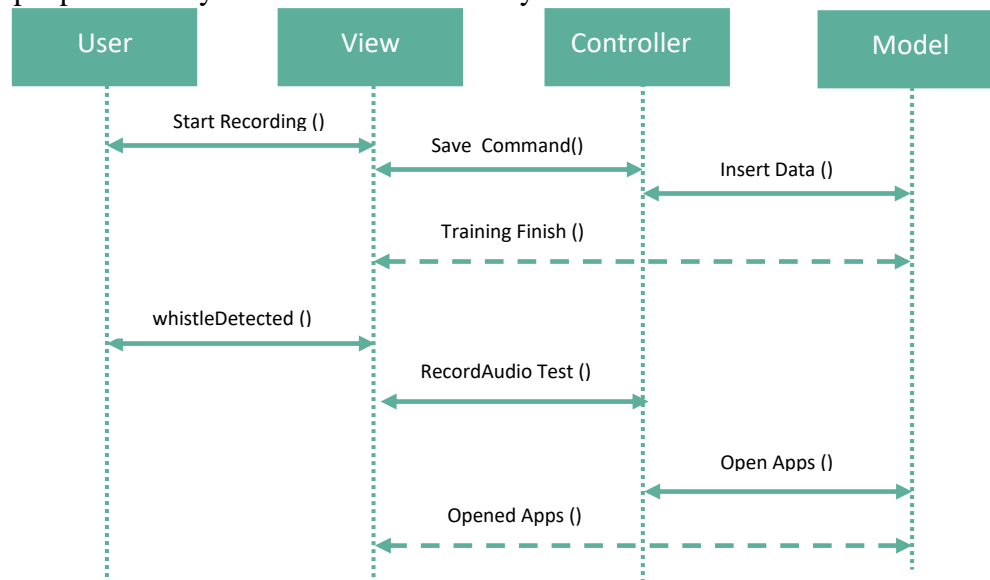


Figure 2. Sequence Diagram for Input “voice to apps”

The sequence diagram process of the application (see Fig.2). Android is a software stack and mobile operating system that includes an operating system for portable devices, middleware, user interface. The basic features such as line call, calling out going, messaging, browser, BBM and operations of contact (such as add, Training, list command, testing, show, delete, help), see Fig.3a.

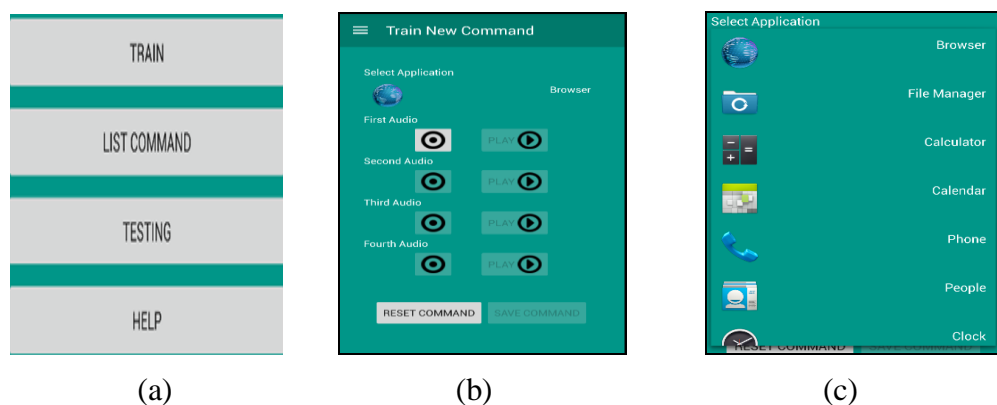


Figure 3. (a) A menu of easy CB Apps (Train, list command, testing, help), (b) Add data Training (c) Select Apps

Speech recognition technology is being implemented in many ways. Android allows you to do the reverse of this i.e use your voice as input. Android OS features an inbuilt utility for the same. Modern phones running on Android have speech recognition function built in. They can use this feature to search on Google, make phone calls, send text messages, emails. The voice has been incorporated into the application and produced patterns contained in the sound. To determine the type of sound, the results obtained will be compared with a database that has

been created. For basic features such as, (e.g., line call, outgoing call of features), having four data voice classification in this class provides access to the speech recognition service (see Fig 3). The database contains different types of speech recognition (sounds and patterns) that make up the sound. This application, easy CB to independently communicate, move, also for blind. It's give solution with easy, quickly to operate a smart phone by user. Easy CB can be use a features as line calling, out going calling, browser, BBM and operations of contact (such as add, training, list command, testing, show, delete, help). The system is interactive android smart phone of this application they just have to operate the phone by voice command.

5. Conclusion

In this paper, we has developed interactive android application and addition of the Android Voice Controlled apps on smartphone and also added some features which are currently available in android based smartphones such as attending for a line-calling feature and outgoing calling feature, over the voice commands. This apps also helps people such as blind and other physically limited people who face. They has been calling his families using line-calling feature or out-going calling feature by android based smartphones.

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