ADVANCED DISABLED PEOPLE HOSPITATLITY SYSTEM

VELAVALURI KRISHNAKANTH[1]*, K Arun Krishnan[2]*

Abstract

The main aim of this project is to construct a user friendly multi language communication system for the hospitality for people travelling by air lines. It can also be useful for the illiterate people. So in this project we are building a device that helps passengers in expressing their needs with the airhostess i. e, request them if they need anything in the flight like coffee, drinks etc. Communication is one of the important aspects of life. With the advancement in age and its growing demands, there has been rapid growth in the field of communications. Signals, which were initially sent in the analog domain, are being sent more and more in the digital domain these days. Presence of guard band in this system deals with the problem of inter symbol interference (ISI) and noise is minimized by larger number of sub carriers. But the large Peak to Average Power Ratio of these signal have some undesirable effects on the system. Since the very genesis of man, communication has been one of the main aspects in human life .Previously various methods like sign languages were implemented for this purpose.

Keywords

passenger status alert, Requirement, Touch screen technology

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Contents

1. Introduction

As various civilizations started coming into existence, many innovative ideas came to the minds of the people special birds and human messengers were employed to meet these challenges. As ages rolled by, post system developed and transportation vehicles like trains and ships were used to maintain link between people miles apart. But by the turn of the nineteenth century, a great leap in communication system was observed when wireless communication was introduced. After the advent of wireless communication huge change has been observed in the lifestyle of people. Wireless communication which was initially implemented analog domain for transfer has is now a day's mostly done in digital domain.This project was designed to provide a user friendly communication system for deaf, dumb and blind people travelling by airplanes using Bluetooth technology. In our project we are using HC-05 Bluetooth module. The android apps are installed in mobile phones. Here we are using mobile phone touch screen to display the items which are required for passengers in the airplane. The touch screen in mobile phones was designed for deaf and dumb people. The voice recognition system was designed for blind people. Deaf and dump can get their needs by clicking the icon in touch screen and blind people get their needs by voice recognition. The information from the transmitter reaches the receiver using Bluetooth technology.The information which is received from Bluetooth will be converted in to hex code by Arduino. If the hex code matches with the decoded database then respective output will be displayed on touch screen.The system acquires speech at run time through a microphone and processes the sampled speech to recognize the uttered text. The recognized text can be stored in a file. We are developing this on android platform using eclipse workbench.

Our speech-to-text system directly acquires and converts speech to text. It can supplement other larger systems, giving users a different choice for data entry. A speech-to-text system can also improve system accessibility by providing data entry options for blind, deaf, or physically handicapped users. Voice SMS is an application developed in this work that allows a user to record and convert spoken messages into SMS text message. User can send messages to the entered phone number. Speech recognition is done via the Internet, connecting to Google's server. The application is adapted to input messages in English. Speech recognition for Voice uses a technique based on

hidden Markov models (HMM - Hidden Markov Model). It is currently the most successful and most flexible approach to speech recognition. Mobile phones have become an integral part of our Everyday life, causing higher demands for content that can be used on them. Smart phones offer customer enhanced methods to interact with their phones but the most natural way of interaction remains speech.Android is a software environment for mobile devices that includes an operating system, middleware and key applications .

In 2005 Google took over company Android Inc., and two years later, in collaboration with the group the Open Handset Alliance, presented Android operating system (OS). Main features of Android operating system are Enables free download of development environment for application development. Free use and adaptation of operating system to manufacturers of mobile devices. Equality of basic core applications and additional applications in access to resources. Optimized use of memory and automatic control of applications which are being executed. Quick and easy development of applications using development tools and rich database of software libraries. High quality of audiovisual content, it is possible to use vector graphics, and most audio and video formats. Speech recognition for application Voice SMS is done on Google server, using the HMM algorithm. HMM algorithm is briefly described in this part. Process involves the conversion of acoustic speech into a set of words and is performed by software component. Accuracy of speech recognition systems differ in vocabulary size and confusability, speaker dependence vs. independence, modality of speech (isolated, discontinuous, or continuous speech, read or spontaneous speech), task and language constraints . Speech recognition system can be divided into several blocks: feature extraction, acoustic models database which is built based on the training data, dictionary, language model and the speech recognition algorithm. Analog speech signal must first be sampled on time and amplitude axes, or digitized. Samples of speech signal are analyzed in even intervals. This period is usually 20ms because signal in this interval is considered stationary.

2. SPEECH TO TEXT CONVERSION USING ANDROID PLATFORM

For the past several decades, designers have processed speech for a wide variety of applications ranging from mobile communications to automatic reading machines. Speech recognition reduces the overhead caused by alternate communication methods. Speech has not been used much in the field of electronics and computers due to the complexity and variety of speech signals and sounds. However, with modern processes, algorithms, and methods we can process speech signals easily and recognize the text. In this project, we are going to develop an on-line
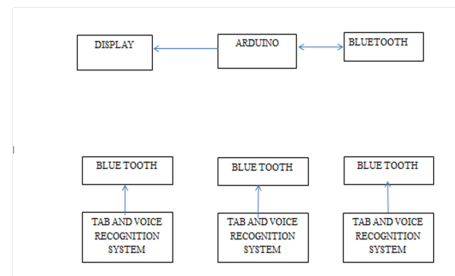

Figure 1. block diagram

speech-to-text engine.

The system acquires speech at run time through a microphone and processes the sampled speech to recognize the uttered text. The recognized text can be stored in a file. We are developing this on android platform using eclipse workbench. Our speech-to-text system directly acquires and converts speech to text. It can supplement other larger systems, giving users a different choice for data entry. A speech-to-text system can also improve system accessibility by providing data entry options for blind, deaf, or physically handicapped users. Voice SMS is an application developed in this work that allows a user to record and convert spoken messages into SMS text message. User can send messages to the entered phone number. Speech recognition is done via the Internet, connecting to Google's server. The application is adapted to input messages in English. Speech recognition for Voice uses a technique based on hidden Markov models (HMM - Hidden Markov Model). It is currently the most successful and most flexible approach to speech recognition.

Mobile phones have become an integral part of our Everyday life, causing higher demands for content that can be used on them. Smart phones offer customer enhanced methods to interact with their phones but the most natural way of interaction remains speech. Market for smart mobile phones provides a number of applications with speech recognition implementation. Google's Voice Actions and recently iphone'sSiri are applications that enable control of a mobile phone using voice, such as calling businesses and contacts, sending texts and email, listening to music, browsing the web, and completing common tasks. Both Siri and Voice Actions require an active connection to a network in order to process requests and most of Android phones can run on a 4G network which is faster than the 3G network that the iPhone runs on.

3. Proposed and simulation results

As shown the fig1 android apps are installed in mobile phones. Here we are using mobilephone touch screen to display the items which are required for passengers in the airplane.The touchscreen in mobile phones was designed for deaf and dumb people.The voice recognition system was designed for blind people. Deaf and dump can get their needs by clicking the icon in touchscreen
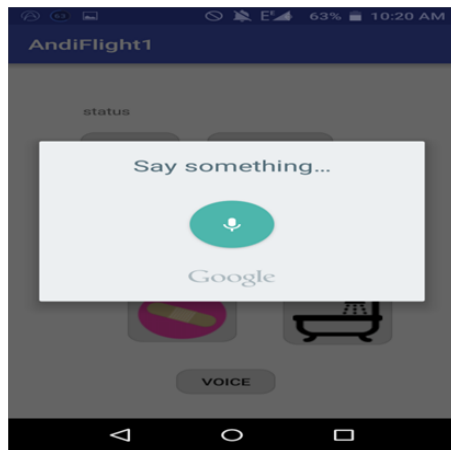
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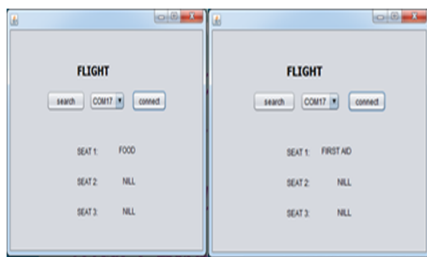**Figure 2.** Transmitter Section

Figure 3. Receiver Section

and blind people get their needs by voice recognition. The information from the transmitter reaches the receiver using Bluetooth technology.

4. Conclusion

The main aim of this project is to construct a user friendly multi language communication system for the hospitality for people travelling by air lines. It can also be useful for the illiterate people. So in this project we are building a device that helps passengers in expressing their needs with the airhostess i. e, request them if they need anything in the flight like coffee, drinks etc. Communication is one of the important aspects of life. With the advancement in age and its growing demands, there has been rapid growth in the field of communications. Signals, which were initially sent in the analog domain, are being sent more and more in the digital domain these days. Presence of guard band in this system deals with the problem of inter symbol interference (ISI) and noise is minimized by larger number of sub carriers. But the large Peak to Average Power Ratio of these signal have some undesirable effects on the system. It can also be useful for the illiterate people. So in this project we are building

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