Voice Subordinate for visually impaired people

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Abstract:

Now days, there is a rapid intensive development of artificial intelligence and the mobile computation brings more convenient life to the blind and visually disable people. The common way by which people communicate in daily life is through the speech. This paper presents a function of a voice subordinate specially designed for them for ease of their daily life Mobile phone users are increased day by day hence it make life easy of them. This technology uses the Speech to text and text to speech interaction between user and the android smart phone. Natural language understanding, voice recognition is enable to the users operate mobile phone functionality.

Keywords:

Voice subordinate, Navigation, Visually disable, Natural Language Understanding, Mobile Computing, Image Processing, Android, Voice Recognitions.

I. Introduction:

Visually disable is the inability to see. Indian is the largest Population in world, there is 15million of blind people from India. Medicine never restore the sight of all people which are lost it, but assistive technologies can assist them in their everyday tasks and it useful to improve their quality of life. The smart phone market is one of the most competitive markets in the world today with various competitors such as Samsung, Google, Sony, HTC etc. As the users of mobiles are increase day by day, facilities are also increasing. This is an new Structure for visually disable peoples and goes about as a voice subordinate for them. This structure is utilized to assist the visually disable to approach the most essential highlights of the cell phone improvement the nature of the structure making utilization of various custom designs and utilizing speech to text. All activities performed by the client the structure speaks out and causes the client to know his present position. The Structure assists the client to likewise read the substance of the message along with the recipient and the date and time, in entire everything. In this prototype user can access the services of mobile phone with their voice command. In this structure the services includes Object detection and pronounce about objects, Voice call, Message, note, Navigation(Map), calculator, alarm, battery level etc. The structure likewise enables the client to note few of things with its custom notepad. The Structure stands up the dialer number pressed and called notification moreover. The Structure in all is a voice

subordinate for whatever activity the client has performed however a custom function while taking the information from the default function. The custom function doesn't save any information it is subject to the cell phones information.

We have integrated those discrete function into a unified structure with a voice interface provided to the blind. With our structure, we hope to greatly improve their life.

II. Literature Survey:

1. A natural language service released by Microsoft is LUIS, which is able to extract the intent and the entities from the sentence. Rasa NLU is an open-source project provide support to the LUIS. The structure is designed for Chinese language Rasa NLU need to be modified to understand the Chinese text. A structure for falling detection has provided a solution for detecting the movement of people's movement. There is a risk warning service, the structure can be used for blind and visually disable persons and inform their family when abnormal event happens.

2. The structure is implemented on the microcontroller based smart assistive for visually blind person. The structure also include the haptic and audio feedback option for user selection. The smart phone can be operated using the voice commands and Bluetooth connectivity. The object detection and distance measurements, between the user performed using ultrasonic echolocation

3. The information of location for indoor is limited. The Radio Frequency Identification tags can be effective for the indoor location information. The structure is RFID based for the navigation of visually disable people. The structure work on the voice command the source can be obtained by the current location and destination by the voice command. The structure uses the text to speech and speech to text for operate the function like entering destination it will use speech to text. For object detection structure used the ultra sonic for avoiding the collision. The structure uses the Raspberry Pi.

4. As high frequency sound wave is produced and the reflected sound wave is received by the ultrasonic sensor. Piezoelectric beeper gives alarm when object comes In front of user. The structure also informs the user how far and from which direction object is coming.

III. Proposed Structure:

The stability of natural language understanding and voice recognition have developed so well, that blind person can also has the chance to use the smart phone so conveniently. Understanding the intention of user and exact key information in the sentences spoken, natural language understanding technology should classify the intent and its content so as to extract the entities from the raw sentence. The object detection technology can assist the visually disable people to know about the things appears in front of their while walking direction.

IV. Structure Architecture:

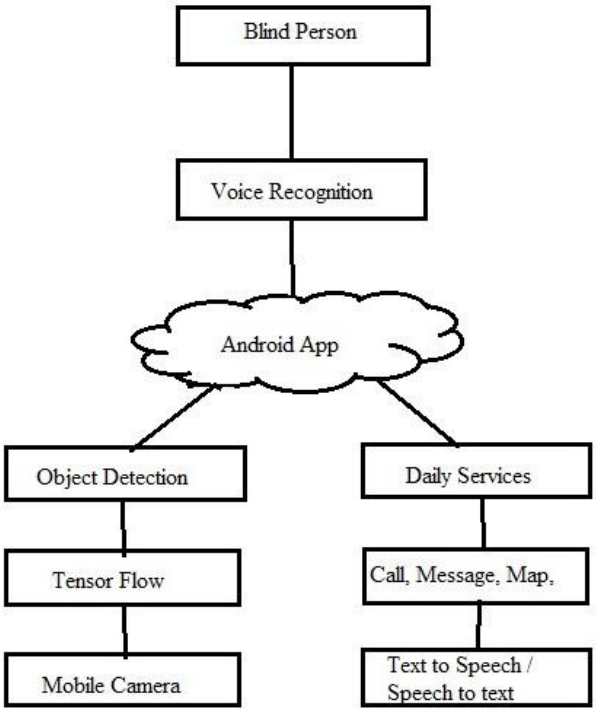

Fig. 1 Architecture Diagram

We have unified different approach into a unique one with a voice interface so that users just need to speak to the platform to get service. The service provided by the structure contains 6modules.The structure get the input through the voice command. The android function is operated on the voice command the input and output through that function is voice command. The proposed navigation structure employs a smart-phone to continually capture images of the environment in front of a user and perform image processing and object identification to inform the user of the image results. According to these results, the user can gain a more understanding of the surroundings. This structure enables visually disable people to not only know the rough direction and distance to an obstacle, but also know what the obstacle is. The object detection will performed by the tensor-flow using the mobile camera. The output of structure will get to know through the voice command. It will access the services like call, message, map, internet access and note using the text to speech and speech to text.

Main Structure Modules:

. **GUI:** It is used to interact with the user. GUI reflects the basic appearance of the function.

. **Speech Acknowledgment:** It is the voice recognition process. It involves the conversion of natural language into the text and it is done by software**.** The accuracy of the speech recognition is different and it is depend on the delivery of the speech, vocabulary size and confusability.

. **Map reader and Safety:** The project provides the solution while walking for the blind people. When the user gives the input to navigate the certain place, the platform will gives us best service. It is useful to the user to know that when to change direction. It keeps safe to the Blind or visually disable people.

d. Availability and Information Facilities: The availability module provides a integrated method to access the different function of mobile phone the function includes incoming and outgoing call, sending and receiving messages, notes.

These modules also provide the information services like calculator, weather, date and time, navigation.

e. Vision Description: Vision description can assist user to know more Information about the surrounding. The vision description service start when user gives input ask what are in fronts of them self. The structure can automatically collect the image of their foreground and send it to the back-end server provided by us to

compute for the result. And it is done by the tensor flow algorithm.

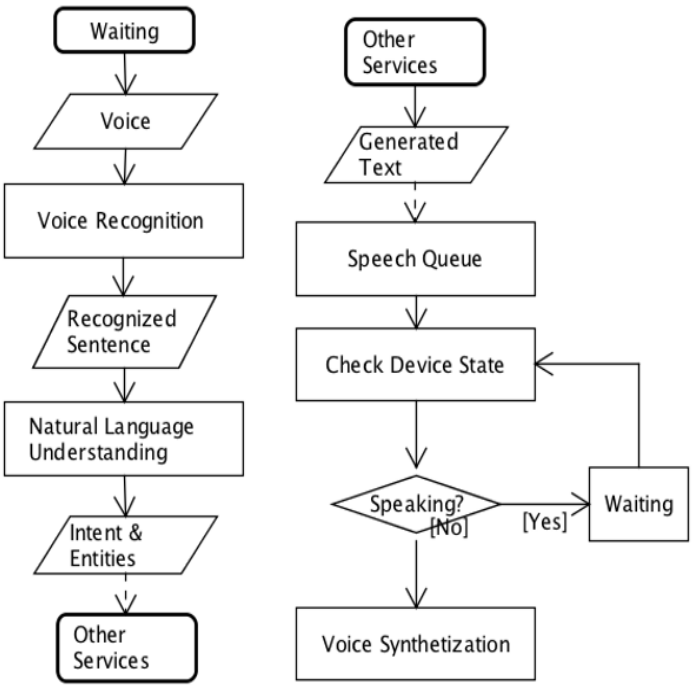

Fig.2 Flowchart Diagram

VI. Conclusion:

This paper will design a function of a voice subordinate to provide convenience daily life service to blind and visually disable people. The structure can assist blind person using mobile information functionality easily and try to keep the security and safety of users. The dream to assist blind people's walk and use the technology without anyone's assist can achieved by this structure. More algorithm can be tested to have better performance and the accuracy to provide the best function of structure.

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