

BOS : the cloud base aid for the blind and old

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ABSTRACT

Today its is that the sensible world. most are having the smartphones on their pockets. each one will use it.literate person or the one who isn't having the attention incapacity , whose eyes square measure operating will use the sensible phone.But the one who square measure visually impaired, blind, or recent he or she cannot use it. For the visually-impaired population, the inability of their reading makes a negative impact on their life. they're unable to browse the written tex and decipherable material like books, magazines, menus, labels, etc. Hence, by developing such strategies which might retrieve text and browse out for blind could be a terribly important task. during this paper, we have a tendency to square measure getting to discuss the planning and implementation of golem system or application(app), within which we have a tendency to let to the blinds access and use smartphones and every one its options. To achieve a novel application for blind we thought of integrating all the applications that we could together using various apis. We thought of integrating Gmail, RSS, calling features, SMS features, Recording and many more to achieve a standard application for the blind. The command for data will be given by using Speech and than converted to text using Google server. The data fetched by the command will again converted to speech so that the blind can hear it. Then to achieve a application for old we are going to integrate a fall detection alarm system using cloud and secure the location information using AES algorithm.

Keywords: STT; TTS; Social network; Call; Fall detection; Cloud; AES.

1. Introduction

Over the years speech recognition has taken the market. The speech input are often utilized in varied domains like automatic reader and for inputting information to the system. Speech recognition will minimize the employment of text and different styles of input, at an equivalent time minimizing the calculation required for the method. A decade back speech recognition was troublesome to use in any system, however with elevation in technology resulting in new algorithms, techniques and advanced tools. currently it's attainable to get the specified speech recognition output. Voice or signaled input is inserted through any speech device like mike, then speech are often processed and convert it to text thence ready to send SMS, conjointly number are often getting into either by voice otherwise you might choose it from contact list. Voice has spread out information input for a range of user's like illiterate, disabled, as if the person cannot write then the speech input may be a boon and other's too which may result in higher usage of the applying .

Approximately 285 million individuals round the globe suffer from some style of visual incapacity, with thirty-nine million being utterly blind. in keeping with the planet Health Organisation (WHO) [1], 1.4 million blind people ar minors below the age of fifteen, and ninetieth of individuals with impairments board low and middle financial gain countries. Therefore, disability and finding possible solutions to scale back the burden of it's a timely issue that needs the eye of researchers in business additionally as in world. moreover, Today's technological advances give a perfect and necessary base for locating best and value effective solutions to the current frustrating downside. However, despite of the entrenched analysis efforts during this space, the planet of print data like newspapers, books, sign boards, and menus stay principally out of reach to visually impaired people. Hence, in an attempt to hunt a solution to the current persistent downside, Associate in Nursing helpful technology- primarily based answer, cited during this paper as, is developed and tested within the work bestowed here .

According to knowledge from the planet Health Organisation (WHO)1, from August 2014, there area unit regarding 285 million visually impaired folks within the world, of that 246 million have low vision and thirty-nine million area unit blind. In Brazil, the country wherever this analysis is being conducted, in step with IBGE (Brazilian Institute of geographics and Statistics), from the 2010 Census survey, 35,791,488 persons according to possess some form of handicap. of those folks, 528,624 explicit that they are doing not see, 6,056,684 declared nice issue to check and twenty nine,206,180 according having some issue. in an exceedingly WebAIM survey2 regarding the usage of screen readers, seventy two of the 1465 users answered that they used a screen reader with their mobile devices. A comparison drawn between this and former surveys showed that mobile device adoption has been increasing within the last years, that demonstrates the importance of developing

apps for this audience. In this state of affairs, we have a tendency to square measure challenged to assist folks with disabilities use smartphones, not solely by rising the access mode to cut back difficulties in interacting with a touchscreen [1], however additionally by motivating this use. Besides causative towards their digital inclusion, the utilization of a smartphone and its various apps may enable their inclusion within the business atmosphere. Email, calendar, cloud storage and document editors square measure some straightforward samples of smartphone apps employed in the work.

In this context, it should be taken into consideration that almost all smartphones have many ways that of interaction, together with multitouch screens, voice command capabilities and therefore the ancient keyboard. Thus, our analysis question emerges: what varieties of interaction create it easier for visually impaired folks to use mobile apps? Bearing this question in mind, we have a tendency to conducted beta descriptive investigations [11], together with interviews and user observations. we have a tendency to additionally targeted on electronic calendar apps, that square measure terribly helpful tools particularly within the business atmosphere, since it may be accustomed manage folks, resources and events, having a positive impact on productivity. Considering this context, we have a tendency to adopted the subsequent method steps: literature review, (2) formative interviews, (3) example style and development, and (4) user study concerning the enforced techniques.

2. Literature Survey

Azenkot and Lee [3] conducted a study to explore the choices gift in golem and iPhone keyboards for text entry exploitation speech. The study comprised 2 phases: one to work out the frequency and context of use and therefore the impressions regarding the technology, together with users with and while not visual impairments; and a second part to look at blind users creating use of speech input and keyboard text entry. the explanation for additionally together with hawk-eyed users was to check their experiences. Eight users were determined composing paragraphs exploitation speech input And an accessible on-screen keyboard. The results showed that the entry rate with speech input was significantly more than with typewriting. However, writing and reviewing text took longer once speech input technology was used. Users additionally noticed some issues with the screen reader response, like lack of punctuation, additional areas And misspelled words (that were simply known by hawk-eyed users with an underline).

A literature review showed that accessibility in touchscreen devices and therefore the use of speech input technology for visually impaired users have already been subjects of analysis [2][3][4][5]. many studies propose AN accessible program (UI) or judge the present choices or interaction modes obtainable for blind transportable users, and a few of them square measure bestowed here. In a trial to boost the potency and reduce the time needed to edit and review the sentences provided by the speech recognizer, Kumar et al. [6] projected a replacement model to act with this technology. Voice writing could be a model that enables users to review and edit words in real time, instead of doing thus for entire sentences. once a user speaks a word or a brief phrase, a menu is shown with some options: a listing of attainable words (including the word capitalized), AN choice to speak once more and a listing with punctuation selections. This model was submitted to a take a look at with twenty four users. during this take a look at, they must use the Voice writing and Dictation ways to compose 3 e-mails. The results incontestible that the quantity of mistakes and also the time to review attenuated with Voice writing, compared to Dictation mode. The users noticed that they felt softer with Voice writing which it needed less effort to edit and review

Oliveira et al. [7] tested four strategies for text entry victimisation keyboard in touchscreen mobile devices, that are: QWERTY, MultiTap, NavTouch [8] and BrailleType. 13 participants tested these strategies. The results showed that QWERTY was the quickest methodology (average of two.1 words per minute), followed by MultiTap (average of two.0 words per minute). The slowest one was BrailleType (average of one.49 words per minute), and NavTouch was slightly quicker (average of one.72 words per minute). though NavTouch and BrailleType were deemed easier to grasp and to use, they're the slowest strategies considering the Word per Minute (WPM) metric. As for the error rate among these strategies, BrailleType had the most effective result, followed by NavTouch, QWERTY and MultiTap. this is often most likely as a result of QWERTY and MultiTap have an outsized variety of parts on screen, that demands a lot of attention and spatial skills. Even though there area unit works that arrange to improve the standard of mobile device use for visually impaired individuals, there area unit still many challenges to be overcome. With constant updates and therefore the creation of recent types of interaction for mobile devices, generally accessibility is forgotten. during this context, {we can|we will|we area unit able to} notice some works that ask for to verify whether or not or not some technologies are accessible for users [3][7]. Others area unit targeted on rising the present types of interaction [6][8], or perhaps on making new ones [10]. Tests were created all told works bestowed during this section. a number of them, listed as future work, performed tests with a lot of users [4][10]. Azenkot and Lee [3] tested the speech technology with an outsized numbers of users. They were able to notice some connected issues and with this data they listed some obstacles for researchers United Nations agency have an interest in non-visual text input. These obstacles can be incorporated into each text input ways (speech or keyboard). They incorporates rising the text choice methodology, pointer positioning, error detection (such as orthography mistakes or case errors) and a study concerning the utilization of autocorrect by unsighted users.

3. System Architecture

Thus to help achieve the goal of our project we are taking a few things into consideration and gathering information about the hardware, software and modules that will be needed to complete our project

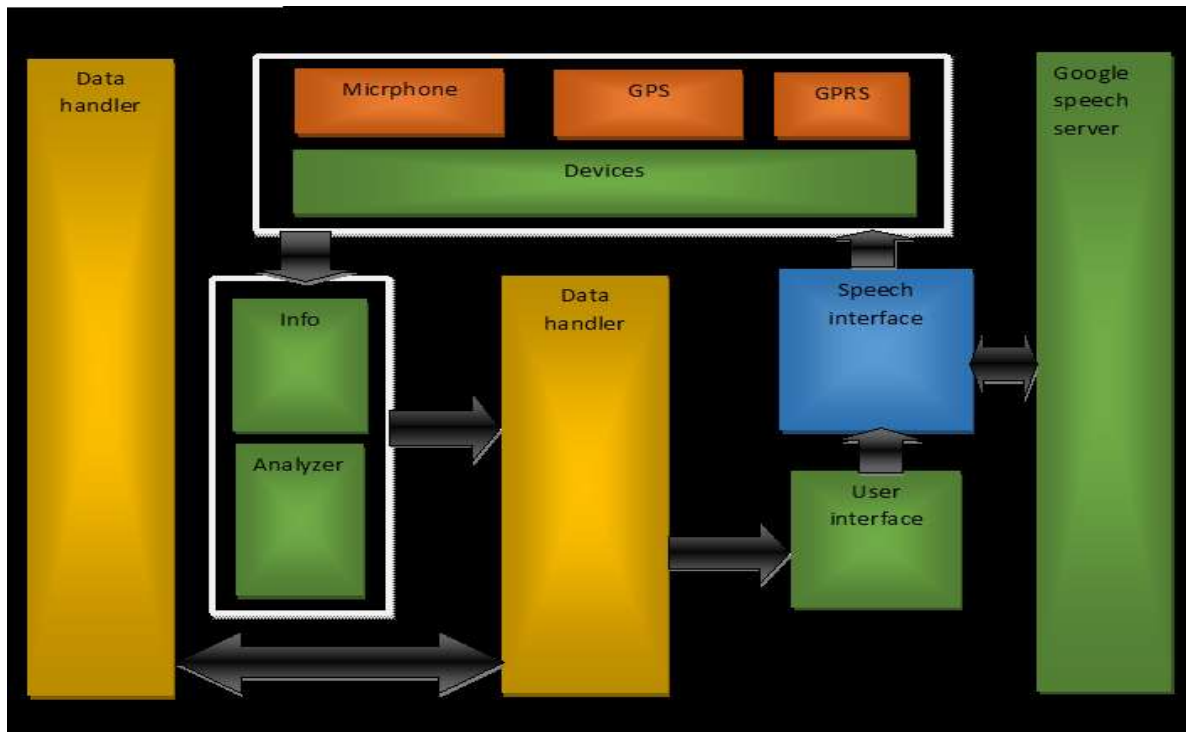


Fig. 1. System Architecture

4. Proposed System

Figure illustrates Associate in Nursing overall read of the system style flow for the BO's mobile application. The Read2Me application has been deployed for text recognition in language English. The application contains an {easy|a straightforward} computer programme that's easy to use by the visually impaired. The smartphone screen is split into 2 main menu buttons. Recognized word and knowledge. they're designed to be giant enough to hide the whole lot of the mechanical man phone's screen and play a sound that informs the user of the button's purpose once the button is ironed. Thus by referring to above system architecture we are proposing a Novel approach that can help improve the life of Blind and old Persons. Our paper is divided in to following modules to achieve the goal of our system

A. Speech to Text

The first module will convert the speech into text by using Google Speech Synthesis. The speech will be transferred to Google server which will create a text for it and return it back to the system. The text will than be interpreted to the blind or old using TTS (Text to Speech).

B. Command handler

The returned word than will be matched with the dictionary that we have created for each process. The handler will than access various devices to handle the data. The data that is being retrieved is than interpreted to the user using TTS. The command will handle processes for e.g Gmail, RSS, Twitter, Call, SMS and many more that is being needed for a user to handle information

C. Recorder

As a blind person cannot handle a device i.e it cannot type the mail body so we are providing it with a recorder. The user can record a body or message that he has to send via mail. The recorded meesage will than be sent to the receipient.

D. Fall detection

we are also going to provide a fall detection system which will help old person a safe journey. We are going to use Accelerometer of the phone to detect a fall. When a fall is detected the system will take the latitude and longitude of the persons address where the fall has occurred and send it to the cloud from where the caring person of the old will be alerted and notified of the fall. The caring person can view the location of the fall on the map.

E. AES

the data on the cloud we are going to secure it using AES (Advanced Encryption System).

5. CONCLUSION

we have a tendency to conferred during this work aimed to analyze the subsequent question: what varieties of interaction build it easier for visually impaired individuals to use smartphones. we expect that the methodology used offerd indications that interfaces that provide totally different kinds of interaction, like voice, bit and vibration, do facilitate the utilization of application for the visually impaired. We unified the maximum amount as applications in one application that it will access all of those applications like calender, email, music player, space of interest, location service and knowledge and lots of a lot of , that may facilitate to form visually impaired individualsto measure their own life , to search out their own path in smarter means . we have a tendency totried to form a visually handicapped person a wiser one.

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