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Vision Shoes for Blind People

Mrs.Madhavi Mali, Purva Sonawane, Akanksha Gaikwad , Pradhnya Waghmare, Shreya Shrivastav

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ABSTRACT
There are about 2.2 billion people with vision blindness and around more than 7 billion people with deafness .Visually impaired and deaf people face a lot of challenges in their dayto-day life. Physical movement is, in fact, one of the greatest challenges for blind people and as a deaf or hard of hearingperson, moving house can be stressful – particularly if thereare communication difficulties. Blind people and also deaf people find it very difficult to merely walk around high traffic areas or any unfamiliar places and therefore have to take help from other sighted individuals. To move around in familiar places, visually impaired people usually memorize the area and where the things are kept. However, those things if moved to some other place might cause issues for blind people. The most widely used way blind people use to travel from one place to other is the white cane. With all the technological developments, certain devices have been developed to help visually impaired people and deaf people to move freely around in the environment.

Keywords: Imparedpeople , Sensors , Smart Shoes , User Friendly , Obstacle Detection

I. INTRODUCTION

So we will be designing a shoes which can help both deaf and blind people to easily move in the surrounding .Its difficult to carry the long hoover cane for blind people. The shoes will consider a sensor which give a sound signal to deaf people and a obstacle device which will vibrate when any obstacle comes in front of them and it will get vibrated so that deaf people could fell the vibration and change their direction while walking . Somehow it will be easier for the blind and deaf people to wear a shoe and move in the surrounding

Feature of smart shoes

- Obstacle detection for both blind and deaf people
- Tracking through GPS
- Auto Detection
- Ability to detect the right path
- Their will be decrease in accident of both blind and deaf people •Vibration for deaf people as they cant hear

Technology

First blind people use smart sticks so that they can move in surrounding but through shoes it can be easy for them to wear and move in surrounding.

✞ Smart command shoes

A smart command shoes for impaired people which make them feel independent in the surrounding. Vision shoes gives alert which will help them to move with less accident.

✞ Integrated smart shoes

The integrated smart shoes aims at the development of an Electronic Travelling Aid(ETA) for impaired people that will help them to navigate safely.

Hardware Description

1) Arduino NANO Board

The Arduino Nano is a very small, breadboard friendly board based on the ATmega328P (Arduino Nano 3.x). It has more less the similar functionality of the Arduino, but in a

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various package. It lacks only a DC power jack, and works with a mini-B USB cable instead of a standard one.

2) Ultrasonic Sensor

Ultrasonic level sensors the distance is measured by using ultrasonic waves. The sensor receives an ultrasonic wave and emits the wave reflected back from the target. Ultrasonic level sensors measure the distance target by calculating the time between the reaction and emission.

3) Buzzer

A Buzzer is an audio signalling device. There are many types of buzzer and here 5V passive Buzzer is used, which is used to create the sound.

4) Vibrator motor

This tiny motor produces vibrations by spinning an eccentric shaft at over 900 RPM when power at 1.5V. It is intended for operation around 1.5V, and polarity is not important that is, the motor can run CW or CCW. The main purpose of this vibrator motor is to alerts the user from receiver the call by without sound and vibrating. These motor are applicable for different categories like pager, handsets, cell phones, bluetooth etc.

5) Water Sensor

The water sensor is an easy to use tool for detecting water. It can act as a simple switch, where the switch is normally open and when there is water, the switch closes.

6) IR Sensor

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A passive infrared sensor is an electronic sensor. It measures infrared radiating light from objects in its field of view. IR Sensor can measure the heat of an object as well as detect the motion. It is also used for detection of water in the path.

7) Bluetooth

The Bluetooth module can receive and transmit the data by using two device. The Bluetooth is the similar technology, which is used to connect one electronic device to another, without the usage of any wires and cables. It is a wireless technology to send and receive data between two devices.

Literature Survey

The collective use of various types of sensors, especially the active - passive combination, can be of great value to a complete and reliable obstacle detection sensing system and for vibrating sensation system. In order to identify an obstacle in different lighting or weather conditions, any precise form of technology might have hitches to satisfy all the required needs. The muddled context and complex moving patterns of all objects in urban streets that might appear on a road scene require erudite processing of sensor inputs. A sensor - fusion and segmentation approach can be used to solve this issue. From the point of view of science, various sensing systems, such as ultrasonic sensors, microwave radars, laser scanners and computer vision can be used for obstacle detection task

Advantages

1. Easy to use
2. Auto Detection
3. Decrease in accident for bind and deaf people
4. Useable at home and outside the home
5. We can keep track of the person because of GPS tacker
6. Travelling will be navigated
7. User friendly

Disadvantages

1.Curcuit can be damaged in water.

II. IX.CONCLUSION

The main purpose of this paper is to make a shoes which can be user friendly because of various techniques used in it. The shoes uses a light weight techniques to communicate with impaired people. In future their will be more focus to implement the better performance of system used in shoes by making less load on the people.

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