SYNOPSIS

Name of College : Government Residential Women's Polytechnic, Latur

Name of Course : Diploma in Computer Engineering

Academic Year : 2024-25

Name of Guide : S.D. Rathod

Group Members :

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Title of Project : Stick for blind people

Relevance:

The **Smart Stick for Blind People** is designed to help visually impaired individuals move around more safely and independently. Traditional walking sticks (or white canes) can only detect obstacles when they physically touch something, which means the user might not know about objects that are further away or higher up , like branches or signs. This can make moving around in new places difficult and sometimes dangerous.

This smart stick improves upon the traditional cane by using an ultrasonic sensor to detect obstacles from a distance. The sensor can see objects ahead and give the user a warning through vibrations or sounds before they get too close. This way, the user can avoid tripping over or bumping into things that they might not be able to feel with a regular cane.

In short, this smart stick makes life easier and safer for visually impaired people, helping them walk confidently and avoid obstacles. It combines simple technology with practical features to enhance their everyday lives.

Proposed Work:

1) **Problem understanding:**
   Study and understand the daily challenges faced by visually impaired individuals, focusing on the limitations of traditional walking sticks.

2) **Requirement Gathering**
   Define the hardware and software components required, such as ultrasonic sensors, microcontroller (e.g., Arduinouno board) buzzer, and IoT modules.

3) **Hardware Design:**
   Design the smart stick by integrating an ultrasonic sensor to detect obstacles, a microcontroller to process the sensor data, and an alert system (buzzer/vibration) to notify the user.

4) **Testing :**
   Test the stick in different environments (indoors and outdoors) to ensure that it detects obstacles accurately and produce sound to the user.

5) **User Testing:**

   Gather feedback from visually impaired individuals to validate the effectiveness and usability of the smart stick.

6) **Documentation :**
   Creating the user manual for the user.

Hardware Requirements :

1) Pipe or any type of stick

2) Ultrasonic Sensor

3) Arduino Uno Board

4) Jumper Wires

5) DC buzzer (3V)

6) Battery (9V)

7) Battery Connector

Software Requirements :

1) C/C++ language for Programming of Arduino Board

2) Computer system with Windows10 operating system

3) Arduino IDE

Estimated Cost :

5000/-

Date of submission:

Date of submission : /10/2024

Mr.S.D.Rathod **Mr.S.D.Rathod**

(Guide) **(H.O.D)**