

SMART SHOE FOR ALZHEMEIR PATIENTS

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ABSTRACT:

Hardware and software innovations are directly engineered into the shoe itself, creating an immersive intelligent footwear that continuously assesses and gives you personalised feedback. These shoes will be a modern interface for those who do not see to aid with environmental sustainability. Without the use of any stick, it can help the mentally disabled to navigate and see objects and even alert them to any barriers in the way. When it is a blind person it also become very common for the lost places in the situation.

KEYWORDS: Vibration motor, BT interface, GPS,

INTRODUCTION:

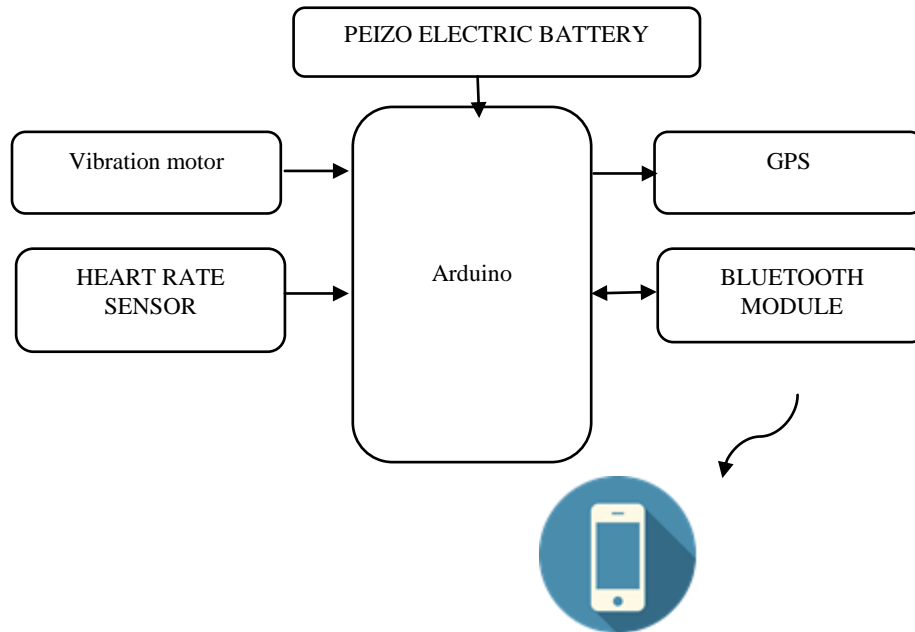
Intelligent Alzheimer's Trainers. With its many apps, this shoe will be filled with many sensors that help to make blind people reach their target. Today, App is part of everybody's life, thus to manage the things nearby, we attach the android app to decent shoes, that could give the person with the shoes a listening stimulation but provide them with a safe way to get to their goal [1].

If we learn, there are approximately 285 million blind people in this world, 39 million blind people and 246 million low vision people. During that task, we will supply the Alzheimer & blind person with smart shoes that help both Alzheimer & blind man reach their destination by using the entire shoe guidance system that tells a deaf man through an ear piece linked by a smartphone [2].

It has proposed a simple delusional stick that can alert the user of Infrared (IR) sensors to an impediment early. After the challenges have been marked, the handle near the main with partially sighted cues. Nevertheless, the intelligent stick was based only on the identification of obstacles, which would not protect the blind in an emergency. And IR sensors are also not powerful at all because the closest hurdle a can access the network via a voice alarm and a vibration signal produced in the very small range could only be detected [3].

Ultrasonic sensors are used to locate obstacles in front because ultrasound sensors can be used within a few feet to identify objects and the data is transmitted as a voice message. This voice signal is transmitted to the consumer through a microphone. It may be impossible for blind people to fly without a warning to an emergency instead of using only sensors [4]. For Alzheimer's patients a common Gps is integrated in the system, like a watch, clothing pockets and so on. This cannot be possible for every physician to dress up. Therefore, when this condition arrives, they will lose [5].

BLOCK DIAGRAM:



PROPOSED SYSTEM:

This technology is basically meant for the patient who is suffering from Alzheimer and it is very difficult for them when they were lost. Scientifically proven that if any person is nervous at any crisis situation their heart beat will rise accordingly. By capturing this phenomenon we are implementing a heartbeat sensor for the heart rate measurement. If the heart rate rises above the normal value. The vibration motor will start triggers and in the meantime GPS location will turn ON. By beacon technology if any person surrounds the Bluetooth terminal it can immediately turn ON the location. And moreover the Bluetooth module we used nowadays are version 4.0 and it will act as a node. This way electrical voltage is created for battery charging from inside the piezo part. The piezo-electric impacts is a piezo element that produces a voltage for charging a battery pack. The battery charges every time you throw and move.

HARDWARE REQUIREMENTS:**VIBRATION MOTOR:**

The vibration system is a lightweight, coreless DC engine that provides the users with no tone, vibrating signal reception. In an array of uses, vibration motors which include cell telephones, tools, payphones, etc. It consists of a positive and negative pin. Positive pin is given to the Arduino MCU which will trigger when it codes for the certain conditions.



Fig. A. Vibration motor.

HEART RATE SENSOR:

Heartbeat sensor is a simple way to examine the heart rhythm, which is calculated by the psycho-physiological signal theory used as a trigger for virtual reality. In relation to time, the volume of blood in the finger varies. A light sensor and a bright red light LED are part of the cardiovascular sensor diagram. The LED has to be incredibly bright, since the maximum light goes through and expands when the detector detects a finger put on the LED. Now the finger becomes much more opaque as the heart pumped blood into the blood vessels; as a result, less LEDs are sent to the sensor. The detector signal varies with each heart pulse produced. The changing sensor signal is transformed into an electrical voltage. This power signal is filtered and enabled via an amp with a logical level signal output of +5V. An LED display that blinks at each heartbeat rate is used to direct the output signal.

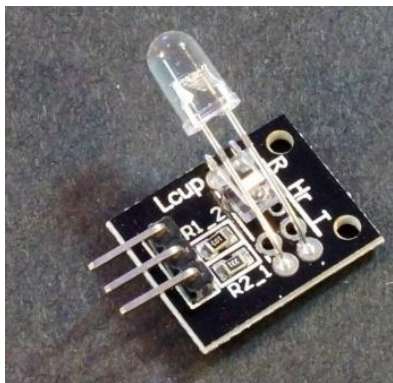


Fig. B. Heart beat sensor

GPS:

When a GPS module is installed, a particular baud rate and update rate is sent to a data (or other message format) from the serial transmission pin (TX) even if no lock is present. All

you need to do is attach the TX pin of the GPS to the RX pin on the microcontroller to have your micro-controller read the data. You will need to attach a gps RX pin to the microcontroller TX pin to configure the GPS module [6].

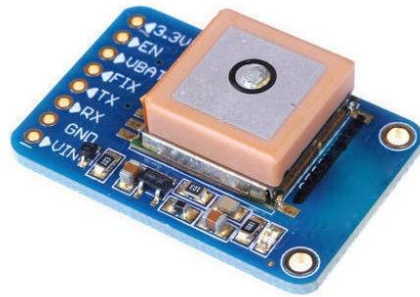


Fig. C. GPS module

BLUETOOTH MODULE:

The HC-05 is a really interesting device that can attach mobile duplex functions in two directions to your designs [7]. You can use this module to connect or interact with Bluetooth device like Phone or Laptop among two microcontrollers, such as Arduino.

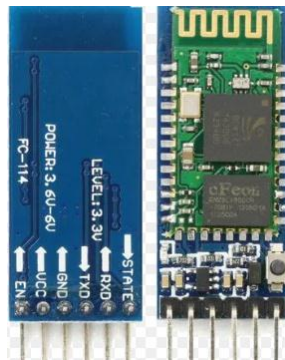


Fig.D. BT module.

RESULTS AND DISCUSSION:

From the fig. A a small prototype model of the system is implemented with BT (Bluetooth module) this will prove it will act as a node and possibly it will share the location of the persons under certain distances.



Fig. A. Prototype of shoe.

CONCLUSION:

We want to say that the program proposed has been successfully implemented. The subsequent issue, such as a less knowledge transmitted, is solved and successfully applied with the productivity of detecting persons and with clear guidance to Alzheimer's persons for their guidance, as we mentioned earlier in an error claim. It can also be inferred that this initiative will make a significant difference to the state of the art and can play a major role in promoting the advancement of Alzheimer's disease.

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