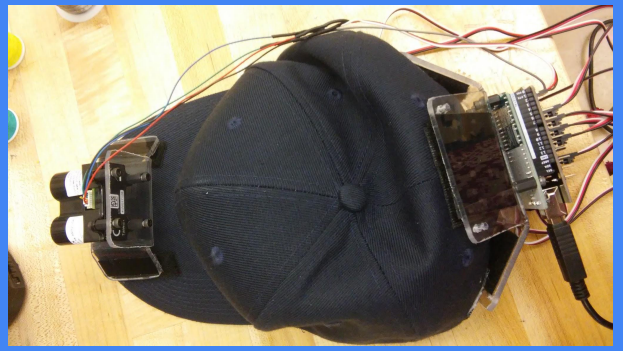


Haptic Awareness Device

BY Ali AJ and Tristan

What is it?

The Haptic awareness device works by having the Lidar Light sensor which sends out a laser that bounces off objects and back to measure the distance from the sensor to an obstacle. This sensor is connected to vibrating motors, that alert the wearer that there is an object in their way. These motors are connected to an Arduino, which is the processor that controls and organizes all of the information. The vibrating motors vibrate faster the closer an object is. The Arduino is connected to a battery and a switch to power the device.

Sensors

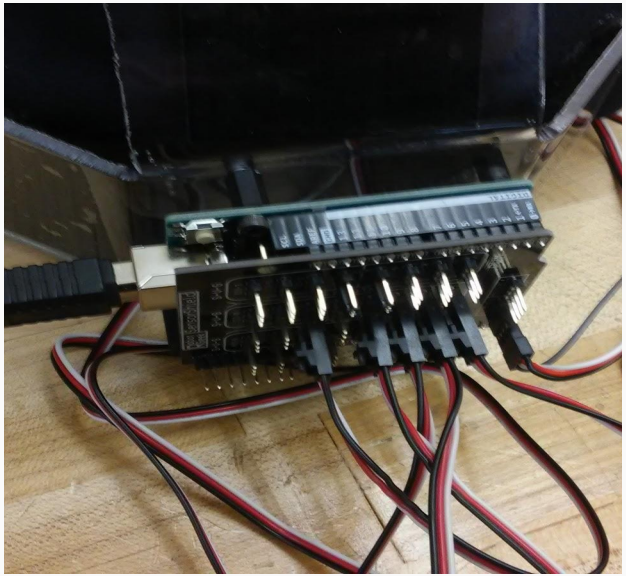
The main sensor is the Lidar Light this detects distance and objects using a laser.

Actuators

The hat includes five vibrating motors that alert the wearer that there is an object or obstacle in their way.

Program

The program tells the Lidar Light to detect if there is anything in front of it as well as how far away it is from the sensor. The program then tells the vibrating motors to vibrate depending on the distance. The motors will vibrate faster the closer an object is. This is done through Arduino.



It can be used for military purposes

This device can be used for many situations including military purposes. There is a possibility of using this for situations where it is too dark to see anything. This is also good for soldiers who lost their sight in combat. This could be helpful for programs like wounded warriors.

Civilan purposes

The main purpose of this project is to help the visually impaired navigate easier. This type of device could be used by a number of people. This can also be given to aid the visually impaired in developing countries. This can be used to benefit anyone.

Problems

There have been a few problems that have arisen in the creation of this device. This project is very complicated and can take quite a lot of time to finish. The programming is complicated and there were many mistakes made before the final product. All parts must work in order for the Haptic Awareness Device to work. There has to be enough time and money put into this project for all of the parts and for the device to be made correctly.