

Statement of Intent:

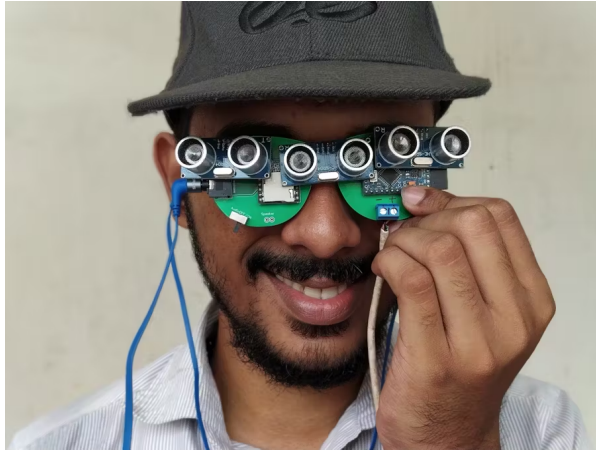
I intend to construct a good design to support Kaia with her vision, that will make everything easier and simpler for her to visualize her surroundings without her cane. To achieve this, I will ensure that the design is easy to utilize, with clear and concise ways on how you can use the product. Additionally, I will incorporate the design so it will be accessible for all the different age groups and simple to understand to use.

I am committed to designing innovative glasses that will significantly improve the lives of individuals who have poor vision/blindness issues. My goal is to create a highly accessible and inclusive solution that not only enhances the daily experiences of those with visual impairments but also benefits as many people for their accessibility. Through thoughtful design, advanced technology, I aim to bring about positive change and inclusivity in the field of visual assistance.

I wanted to build something that is different that will maybe help out; normally to support people with blindness, a cane is normally used. Using a cane could be very tiring and takes time to harness and understand how to use it efficiently. So maybe glasses are more accessible for people with Blindness and Blepharospasm instead of holding a cane everytime.

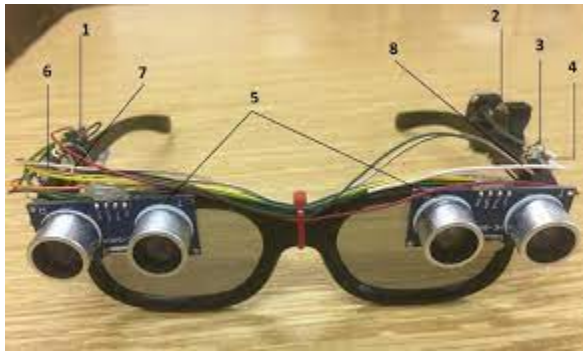
From using my new design I am hoping it will hopefully help out the community. Through my design for individuals with poor vision, I intend to build a solution that not only enhances their daily lives but also inspires confidence and independence. By prioritizing accessibility, user-friendliness, and inclusivity, I aim to create a design that becomes an indispensable tool for those with visual impairments, empowering them to navigate the world with ease towards the wearers.

Existing designs



I like the idea of this design because it uses the materials I need, and it's a simple design that can be easily done. The software used is "Arduino IDE" software, which we are learning about. The design uses inexpensive smart glass to assist visually impaired individuals. This project requires a few ultrasonic distance sensors, an Arduino Pro Mini, an MP3 player module, and some vibration motors. I also appreciate how it can be used by people of all ages.

<https://www.hackster.io/B45i/talking-smart-glasses-for-the-blind-87d31e#things>



The design's main strength lies in its use of the ultrasonic sensor, which measures distances with sound waves, making it effective and double. It's also cheap, easy to use, and fast, which is great for people. However, it works best when combined with other devices like smart walking sticks or wheelchairs. But overall, it's an innovative solution that can help blind and visually impaired individuals with their daily challenges. The software used is "Arduino IDE" software, which we are learning about.

<https://www.mecs-press.org/ijem/ijem-v9-n4/IJEM-V9-N4-5.pdf>



This glasses design would be a perfect example of something that could be done by us. It is very simple and does not take much time to build with just a few materials needed; such as vibrator motor, ultrasonic sensor, cable/ wires, battery, an arduino nano. My glasses design will be heavily inspired by this idea.

https://www.youtube.com/watch?app=desktop&v=zuXmo_eJgEE

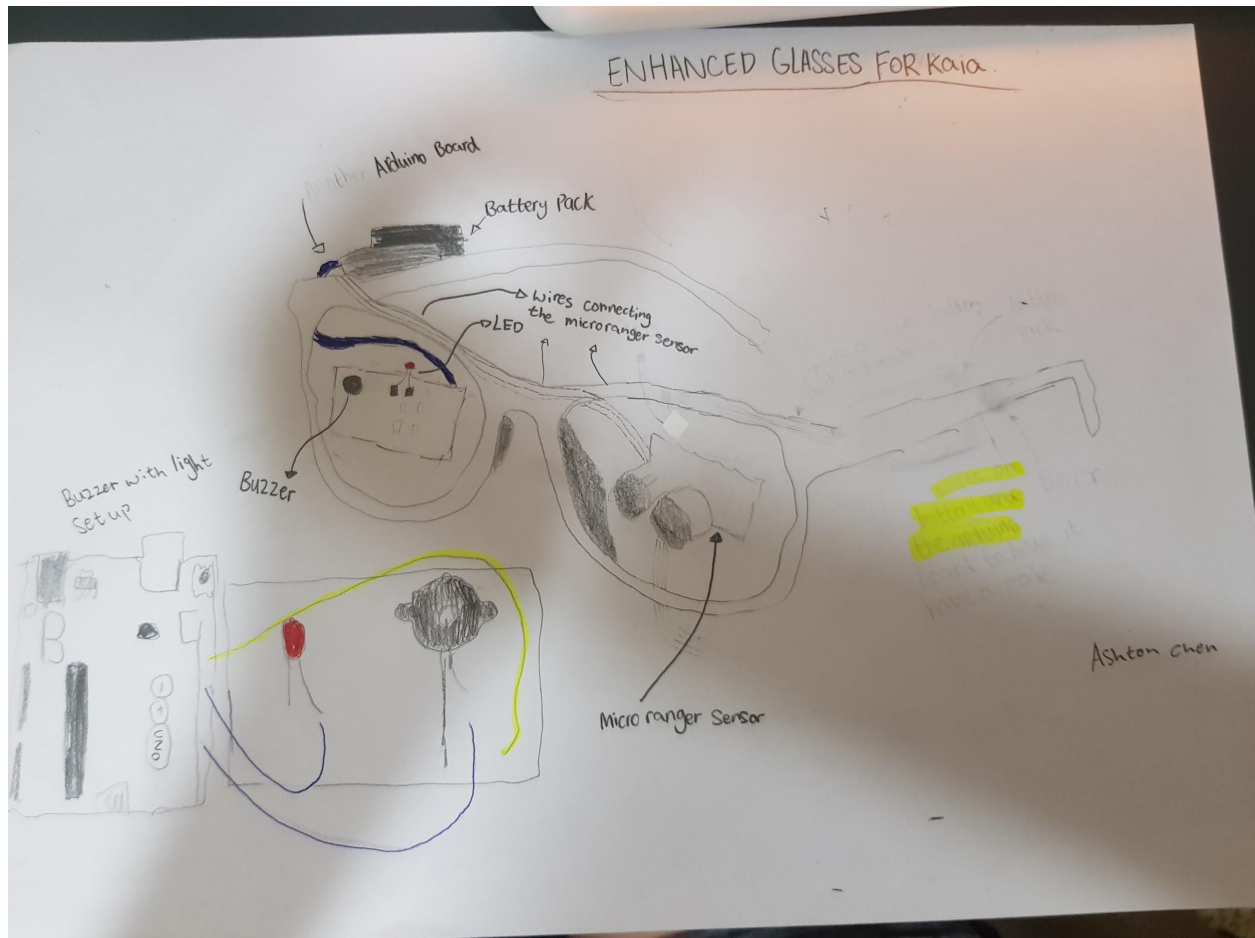
Communication log

Date	Person contacted	Type of communication	Nature of communication
10/10/23	Kaia	In person	Kaia was delighted that there was something that could help with her senses other than her walking cane.
10/10/23	Kaia's dad	In person	Kaia's dad was with Kaia and he was delighted that Kaia seemed happy about the new project.
11/10/23	Kaia's mother	Through the phone	Kaia's mother wanted to check up on the project as she wanted the project done as soon as possible to make Kaia happy.
11/10/23	Kaia's vision teacher	Through the phone	Kaia's teacher is glad that there is another way she can enhance her awareness but is not very delighted as all her training with Kaia will be gone to waste.

Pseudo Code:

```
START
SETUP sensors
WHILE power on
  READ ultrasonic sensor
  IF distance <100
    ENABLE light sensor
    INCREASE light sensor 25%
  END IF
  IF distance <75
    INCREASE light sensor 25%
  END IF
  IF distance <50
    INCREASE light sensor 25%
  END IF
  IF distance <25
    INCREASE light sensor 25%
  END IF
  ENABLE buzzer
  IF distance >100
    DISABLE buzzer
  END IF
```

High-level concept pictorial (digital or hand drawn):



Empathy Map

