Smart glasses with social distancing assistance for the visually impaired

SAiswarya Revi¹, Anzi V¹, Aswanth S Pillai¹, Brincy K Biju¹ Reshma Mohan A S²

¹UG Scholar, Department of Electronics and Communication Engineering, Dr.APJ Abdul Kalam Technological University Kerala, India
²Assistant Professor, Head of Department, Department of Electronics and Communication Engineering, Dr.APJ Abdul Kalam Technological University Kerala, India

Abstract: Covid 19 is a contagious disease and an infectious disease that can become extremely hard to control once it begins to spread. The pandemic has dramatically changed many people’s life. The economic and social disruption caused by the pandemic is destructive. The only way to reduce the spread of Covid 19 is by maintaining social distancing. The government has taken many measures to ensure social distance. If we do not take appropriate measures, the spread will continue, and affect many lives. But the task of maintaining social distancing is a bit difficult for visually impaired people. In our world, 2.2 billion people are suffering from vision impairment. So identifying this as a problem here we are making a device that will alert visually impaired people when they go near areas that have been infected by the virus.

INTRODUCTION

We are living in a world that is driven by technology. As a result of the advancement of technology, the quality of our life has improved. One such technology is Geofencing technology. Geofencing is a location-based service. We can define geofence as a virtual perimeter for a geographical area. Here, an app or other software uses GPS, RFID, WIFI, or cellular data to trigger a programmed action when a mobile device enters or exits a particular boundary. We can make use of this geofencing technology to alert the visually impaired by notifying them not to go to a particular place and thereby we can reduce the spread of the disease. This is not only useful for the visually impaired anyone can make use of it to isolate from the Covid 19 infected place.

Depending on how a geofence is configured it can prompt mobile push notifications, trigger messages, or can give alerts. First, we have to provide a virtual boundary to the visually impaired, for this, we need to find the infected place. For doing this task, we need to scrap the data from the website using python. This is called web scraping. By making use of this technique, we can copy the data from the website provided by the central and state government that mentioned those infected places. After that, by providing speakers to them, we can provide an alert to keep distance from that particular place.

METHODOLOGY AND PROPOSED METHOD

We all know that our world is struggling with the covid pandemic. Covid affected the lives of many people. The only method to control the covid is maintaining social distance. Keeping this as a problem statement we are proposing a unique model which helps the blind to ensure that they are in a well-protected place. Here we are planning to use several technologies like web scraping and geo-fencing. The proposed system applies not only to the visually impaired but is also beneficial to everyone.
Here we are using the GPS module to find the location of the person and the infected place. Before that, we need to identify and assign the coordinates of the location of the infected place. The GPS helps us to read the location of the person in real-time. It compares the real-time location of the person and the coordinates of the infected place. If the coordinates of the infected place and the location of the person match an audio output will be given to the visually impaired person. As a result, the person can step back from that specific infected place, and thereby we can reduce the spread of covid-19. Our proposed system can not only be useful for the visually impaired but also helpful for every individual to make sure that they are in a safe place.

CONCLUSION

In this paper, we have proposed a novel method to make the life of visually impaired people easier. We have implemented a model that helps them to maintain social distance and thereby reduce the spread of the Covid 19 pandemic. The proposed technology called geofencing helps them to keep distance, depending on how a geofence is configured and thereby giving alert the people, they can step back from that place. In the future, we can implement another technology called face recognition which helps the visually impaired in recognizing the person in front of them.

REFERENCES


