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Wearable Smart Device for Visually Impaired People

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This report is submitted as required for the Project in accordance with the rules laid down by the Bahria University as part of the requirements for the award of the degree of Bachelor of Engineering. I/We declare that the work presented in this report is my/our own except where due reference or acknowledgement is given to the work of others.

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Abstract

The aim behind our project is to facilitate the visually impaired people through our Wearable Smart Device that would assist the visually impaired people by avoiding any type of obstacles in their path so they can move more freely. It will permit the blind people to explore new environment, more securely and independently. There are various technologies that increase the independency of visually impaired people life, but these technologies and other assistive devices are still lacking in certain areas. This wearable smart device will sense any obstacles in their path, detect the objects, table, chairs, and door, detect stairs and will send feedback through proper voice command. Normally blind people traditionally used white cane, stick for traveling but some time they feel awkward they need light weighted portable device so they easily carry anywhere so we want to enhance the functionality as well as increased the accuracy. Our device will ensure the blind person safety and security.

Here an effort has been made to develop a smart wearable device using raspberry pi for obstacle detection using IR sensor alert through voice indication via handsfree, GPS and ESP for real-time location tracking, in order to tracked the location Blind assistant App has been developed, used Pi camera for object recognition like table,chairs,stairs,door. The objective is to create a device which helps the visually impaired people to easily move in the environment.

Keywords: Obstacle Detection, Object Recognition, Location Tracking, Mobile Application

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