

V-Eye : A Vision-based Navigation system for the Visually Impaired

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Abstract: *Vision is one of the most vital senses in the human body, and it is essential for perceiving the world. However, millions of individuals around the world suffer from vision loss. They are having difficulty navigating their daily lives because they are unable to detect impediments in their environment, and one of their major challenges is recognising people. Other than automation, object detection is used in a variety of applications that have yet to be fully explored. This project includes one such application that employs detection to assist visually impaired individuals in identifying items ahead of them for safe navigation, as well as a face recognition system with aural output that can assist visually impaired persons in recognising faces. Speakers would provide them with voice-based assistance. We used a deep learning-based Faster Region-Convolutional Neural Network (Faster R-CNN) to detect and recognise humans and objects in the environment in this study. The Faster Region Convolution Neural Network technique processes and classifies the image captured by the camera. The audio jockey receives the detected image as an audio input. As a result, this model aids visually impaired persons in a more comfortable manner than white canes.*

Keywords: R-CNN :Region based Neural Network.

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