

Guardian - Smart Assistant Tool for Visually Impaired People

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Abstract

At present, with the advancement of technology, various devices and solutions have been found to aid the visually impaired community (VI Community). Even with the countless technological breakthroughs, yet they face many problems performing the most basic functions in daily life. Identifying the objects, they use daily, identifying a person, whether its someone they know or not, and their emotions, and reading a text information displayed anywhere, without the assistance from another person are the basic issues we deal with and try to resolve using a tool consisting of a pair of spectacles with an inbuilt camera that is integrated with a mobile application. The inbuilt camera will capture the image of a text containing label, an object, or a person which will be then detected, analysed and recognised and will be converted to Speech using Google TTS engine and produced through the headphones giving the output to the user. Tesseract OCR, YOLO algorithm, and TensorFlow models have been used for each feature of the tool respectively. This tool will be very beneficial to a blind person as it mitigates them the frustration caused by being incapable of performing daily activities without any assistance from another person.

Keywords

Optical Character Recognition, Text To Speech Conversion, Object Detection, Face Recognition.