



253_Efficient Portable camera-based Text to Speech converter for blind person

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Efficient Portable Camera Based Text to Speech Converter for Blind Person

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Abstract



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Abstract:

Text Reader for Blind Person using camera module ensuring portability is the prototype made using the Raspberry Pi 3b and Python to read the text from the handheld objects of the blind person. This paper proposes a better approach for text localization and extraction for detection of text areas in the images. The text size is an important factor whose dimension should be properly elected to make the method more general and insensitive to various font shapes and sizes. The proposed method involves four steps detection of an object, localization of the text, extraction of the text and text to speech conversion. The Region of Interest is extracted from the cluttered background and then the text localization algorithm is applied to locate and extract the text. After extracting the text from the ROI, it is converted it into speech. It works more efficiently with Optical Character Recognition. Convolutional recurrent neural network is proposed for training the words separately. The experiment and training are performed on Synth 90k word dataset. Finally using OCR and CRNN a proposed model has been developed.

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I. Introduction

There is a total of 285 million visually impaired people in the world. Of these population, almost 30% are blind. This number is increasing rapidly due to abnormalities because of genetic hereditary issues [1]. The approach is basically to sense real time objects with utmost accuracy and gives output in the speech format. Recent advances in Computer Vision and image processing fields has made this scenario a reality. So this paper deals with helping blind users with the latest technologies. It is a great deal to consider the size of a contour while processing an image in real time [2].

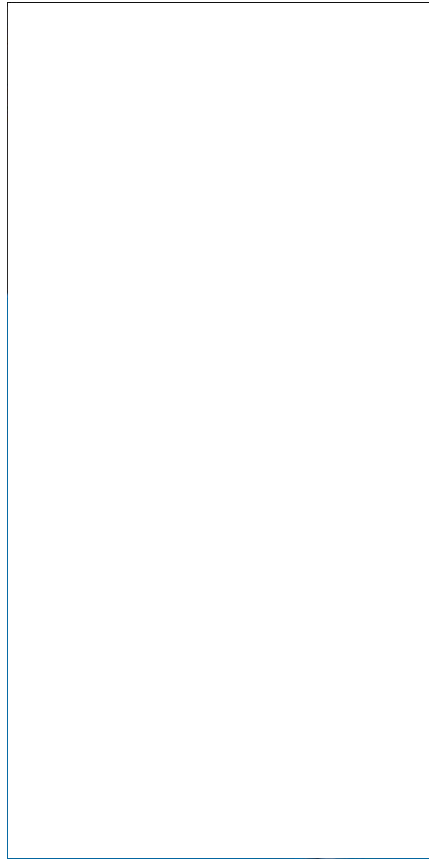
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