

# A DEVICE PERFORMING OBJECT DETECTION TO HELP BLIND PEOPLE

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**Abstract:** This paper is proposed to help the destitute of vision to live independently. In today's technology-driven world, technology takes its own place in fulfilling the needs of every individual. It also plays a very key role in the life of Physically Disabled people. But coming to the point of Blind people, no matter what advanced technology you give them, they may not operate because they don't have the ability to see and use the devices. Not only devices, but they also need to depend on others completely for every small task. In order to fulfill the above missing parts of the blind people, we proposed a device embedded with advanced technology which will make the person do their own work rather than being subordinate to others. The relevance makes use of the image sorting course of action to perceive the object and speech uniting to produce the voice volume. The objective of the system is to detect real-time gadgets that are scanned through the Black Maria and notify the partially sighted persons about the object through audio or expressed information. The perception of images on moving objects has been a significant exploration area in computer vision which has been highly worked upon, and unsegregated with residential, mercantile and industrial environments. Due to a lack of data analysis of the trained data, and dependence of the motion of the objects, incapability differentiating one object from the other led to various limitations in the existing techniques like less accuracy and performance. Consequently, a Fast R-CNN algorithm has been implemented to disclose the object with high exactness and processing speed. The image scanned is known to the person through voice which comes as output using a speech synthesizer to the visually challenged persons to teach them in their mobility.

**Keywords:** Tensor Flow, Google Speech to text (API), Open CV, Raspberry pi3b+..

## I INTRODUCTION

Millions of imperceptive undergo a number of visual challenges every day to understand the environment. By reading the label on an object to figuring out if they reached to the right bus stop or not. The project comes under the domain Object detection procedure takes place and the user can identify the object by listening to the voice from the device. This helps to create a new approach to visually challenged people to live independently.

The visually impaired face various difficulties in their day to day life. The objective is to develop

an application for imperceptive persons based on Android. It will abolish the need for resolute devices and other clobber devices to assist them to recognize objects as they move around. The Android request helps the imperceptive to navigate independently using real-time object detection and identification technology. The application makes use of

the image riddle procedures to perceive the object and speech synthesis to produce the modulated output. The imperative of the system is to discern objects which are scanned through the camcorder and notify the blind persons about the object through audio. The image recognized of moving objects has been a remarkable research area in computer vision which has been highly toiled upon, and integrated with residential, commercial and industrial environments. Due to lack of the trained data, and dependence on the motion of the objects, the incapability of differentiating one object from the other has led to various limitations in the existing techniques like less accuracy and performance. Therefore to reduce this limitation new faster RCNN algorithm has been put into action to detect the object with high precision and processing speed. The identified image information is provided with the help of speech output to the imperceptive persons to assist their mobility.

## II LITERATURE SURVEY

This paper initiates a fused collection of the framework based on image social scale, which merges the structured sparseness with tree-graph matching to successfully the problem of weakly supervised image co segmentation. They focus on the interaction between common-object properties like saliency and similarity. Most existing co segmentation methods are to pay grandness on either of them. This suggested method grasps the learning of the knowledge for structured thinness with the help of tree-graph matching, which is capable of generating object-oriented significant. Meanwhile, it also helps to reduce the space and complexity of tree-graph matching with the pattern of sparsity. We intend to thoughtfully exploit the geometrical relationships of coherent objects. The trial and error results compared to specified data sets confirm that the mutual learning framework is capable of effectively delineating co-existing object patterns in multiple images. The object co segmentation method is based on shape governable. It is unsuited from the previous object co segmentation methods which are based on the region attribute similarity of the common objects in the image set, our proposed co segmentation algorithm focuses on the shape consistency of the foreground objects in the image set. In the advance system, given an illustration where the fore particles may be assorted in appearance but share similar shape structures, the implied aspect shape pattern in the image set

can be involuntary mined and regarded as the shape prior to those undesirable split up images. The algorithm consists mainly of the initial Grab cut segmentation and the shape mapping by coherent point drift registration; testify our proposed breakthrough and establish a benchmark for future work, we built the Co Shape data set to evaluate the shape-based segmentation. The experiments on the shape data set and the comparison with some related co segmentation algorithms demonstrate the excellent performance of the algorithm.

### III PROPOSED SYSTEM

Classification of cleavage Easiness an image is easy to divide if the forefront stands out from the homogeneous background. For such images, there should be a separation between front and background with clear boundaries, and segments should contain complete front objects.

This remark is based on the region's color dissimilarity with respect to the whole image, with weighted sum contributions from the neighboring regions. Upon segmentation, the saliency ranking  $R_{sal}$  is computed.

Segmentation Propagation Simple images can be readily segmented to produce good segmentation masks due to a clear separation between the foreground and background in these images. The well-segmented object masks are then propagated to more difficult images as a segmentation prior. Even in a few images that may not be well separated, the results can be more distinct by passing them to the propagation step.

Initially, a raspberry pi3 b+ kit is placed to blind stick or it can also be placed to a cap in future scope and an SD card is put into the kit and with the help of a camera you can detect the object detected is first displayed on the screen

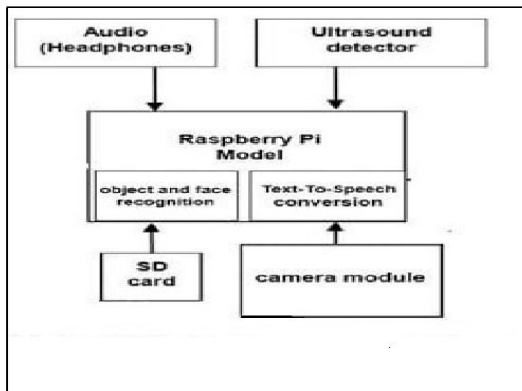


Fig shows the block diagram of the system.

The mobile of an open app and then converted into voice with the help of google speech API audio comes out and the visually challenged can here and move independently.

The proposed system consists of 2 major modules:

- (1) Object Identification Module
- (2) Voice Feedback Module

### IV METHODOLOGY

In classification-based segmentation, voxels are classified and labeled as belonging to a particular class according to a certain strategy. The simplest technique is based on thresholding. The thresholding algorithm participates to determine a threshold value that separates the desired classes. Iterative gateway distributes into brain tissues from others in axial IMAGE slices. Starting with set values, in which the head and image are iteratively adjusted based on the geometry which results in masks. Although the thresholding algorithm is simple and computationally very fast, it is very sensitive to INU artifact and noise in IMAGE images. The automatic resolution of a suitable threshold could be problematic if there is a severe overlap between the vigor of different tissue types due to noise and intensity agreements. In the case of using simple thresholding in earlier classification-based segmentation work, statistical classification based articulation has been the method of choice in present times. The Statistical grouping has the strong point of being more robust, as well as having a diligent mathematical foundation in stochastic theory. In classification methods, the probability bulk function of tissue force for different tissue classes are often modeled invariably as a mixture of Gaussians. In order to inculcate local contextual information, IMAGE regularization is employed. This bias field as a problem in casting the Bayesian structure and the EM algorithm is used to estimate the homogeneity and the tissue classes. Yet, this method needs to be sent with a tissue class depending on intensity models, which are constructed manually from the trained data. They did not consider the dependencies for the tissue segmentation. that employs a simple region growing technique for lesion segmentation. In, a mechanical statistical region growing algorithm based on a husky estimation of the local region mean and variance for every voxel on the image was proposed for IMAGE segmentation. The best region for growing the parameters are eventually found through the minimization of a cost. For more, relaxation labeling, region splitting, and constrained region merging were used to improving the quality of the IMAGE segmentation. The perseverance of an appropriate region analogy criterion is an important

## V.RESULTS



Fig shows bottle and bowl

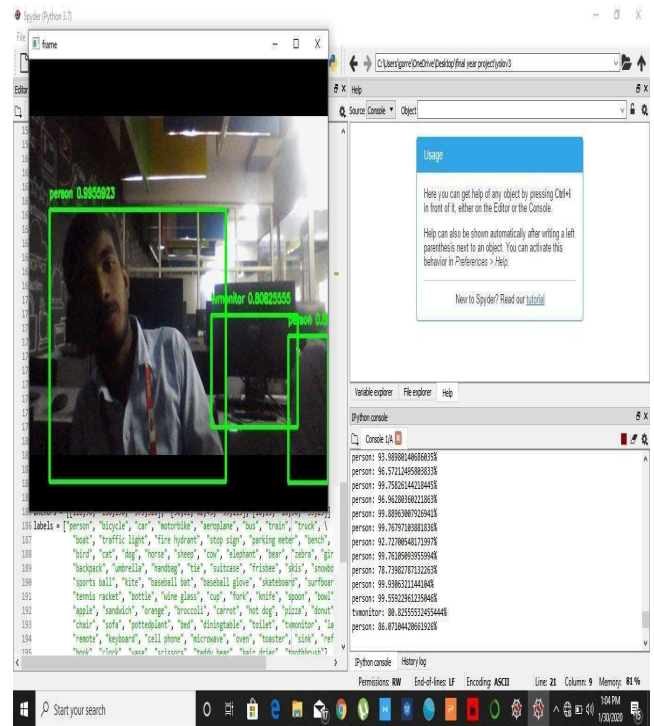


Fig shows person and computer

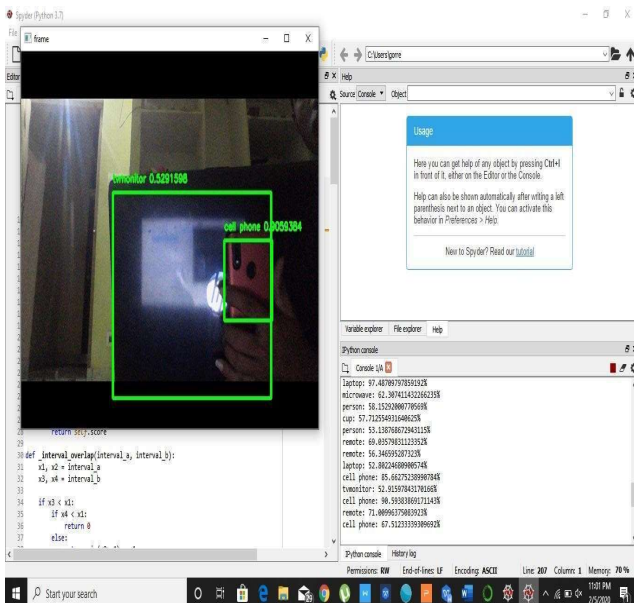


Fig shows computer and mobile

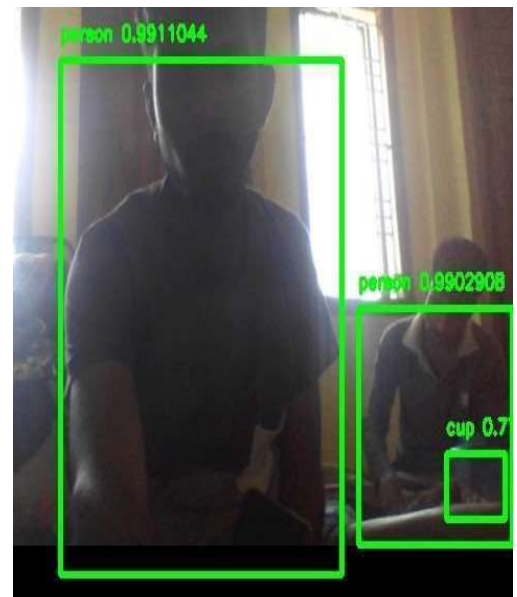


Fig shows person and cup

## VI CONCLUSION

Hence, the instruction ability and superiority in dealing with the problem, extent transformation, and background switches, object detection has been a research hotspot in recent years. These notes provide a detailed review of object detection frameworks that handle different problems, such as clutter, and low resolution, with different degrees of modifications on R-CNN. This review starts on a generic object detection pipelines that provide based constructions for other related tasks. Then, common tasks, namely salient, This review is also helpful for the developments in neural networks and related learning systems, which produce valuable tips for future progress. This project is developed with the objective of detecting real-time images. Boxes are drawn around the detected images with the name and accuracy at its top. We have used raspberry pi 3 in this project. Future enhancements can be focused by implementing the project on the system having faster GPU results for better validity. Machine learning is quite playing a vital role in present days but they are unable to help the blind people to make you of it so it is a small trial to make the visually challenged people start living independently and get more confident

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