International Journal of Advances in Engineering and Management (IJAEM)
Volume 4, Issue 6 June 2022, pp: 862-866 www.ijaem.net ISSN: 2395-5252

stimation of Object Size from Real-Time Image

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Submitted: 01-06-2022 Revised: 10-06-2022 Accepted: 15-06-2022

ABSTRACT:-
In our Research paper, the original size of an object present in an image is calculated. The chose algorithms are used computer vision are carried out, it includes introductory tools that are effective enough to find the size of an object. In this design, we proposed the measuring of confines of an objects present in the picture and the distances between the objects is reckoned. Computing the measures of the objects in a picture is analogous to chancing the distance to an object from the camera. First, we've to find the value of pixels per a given standard. To find this value, we've to elect one reference object from the image by considering two major parcels. First property is that confines (range & height) of the reference object should be known and in terms of (elevation or mm) and the other property is that identification of the reference object should be easy. Keywords — camera; image; computer vision; object size; size estimation.

I. INTRODUCTION:-

There are many styles to determine this, The most familiar that you likely noticed would be in crime scene prints when an object of known size similar to a pencil or indeed a sovereign is placed next to the object of interests. From this it's authentically easy to estimate the size of the object of interest. If the object distance & the focal length are known also we can equal to calculate the original dimensions of an object present in a picture. The lens view field with degrees as unit will be given by focal length. Assume a sample, that a 10 cm lens with a perpendicular view field of 15 degrees on a camera by full frame. Thus that occupies the half of the frame and uses field view of8 degrees. In this plan, the measuring of range of an object in the picture and the distances between the object is figured. Computing the measures of the objects in a picture is corresponding to chancing the distance to an object from the camera. First, we've to find the value of pixels per a given metric. To find this value, we've to elect one reference object from the image by considering two major parcels Property-1-The range(range & height) of the reference object should be known and in terms of(elevation or mm). Property- 2- The identification of the reference object in a picture should be easy. The identification should be grounded on the object placement in a picture like placing the objects at corners of the picture or based on its appearances like its shape, color or any other factors. From the below cases, it's clear that our reference object in a picture should be identifiable uniquely compared to the other objects. These two parcels are veritably important to find the measures of an object present in a picture.

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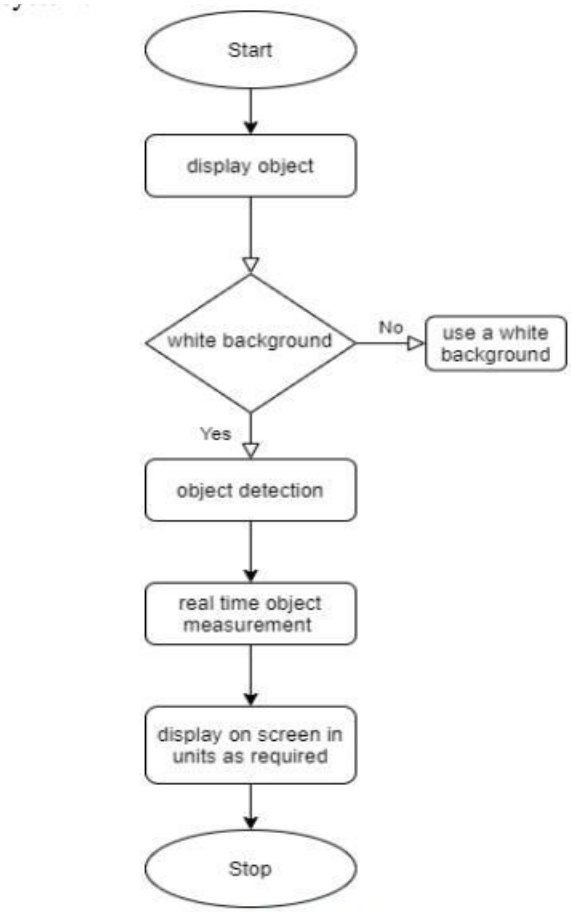

Fig 1: Flowchart

As shown in the above fig.1. We have to store the input image in the memory. First give the path for reading the image present in the storage. Again perform the grayscale which identifies the objects present in the picture and also do Gaussian clarifier to remove the unnecessary noise in the picture. After filtering, the edge discovery system is done to descry the edges of the object present in the picture. The figure is formed for the edge detected objects in the picture i.e., using outlines. Further sort the objects present in the picture in successive order. If figure area is too small neglect the object differently calculate the range of the object. To find the range of the object we should know the pixels per metric rate, Height & Width (pixels). For chancing pixels per metric ratio we need two parameters, and they're Height & Width (inches) of the reference object.

II. WORKING CONCEPT:-

The main goal is to find a result for measuring the range of an object present in a picture using algorithms related to computer vision. To make this possible, we've to consider two types of film land – first type is with the presence of object and the alternative type without the presence of object in the picture. One more important factor is that to know the details about height of the camera.

We claim previous idea on colored libraries and structures, specifically CCV, Book, CMG, Simple CV, According. Net. In Linux OS, chose tool is available, and it's an open-source software. In Open CV, the algorithms for identification of real time objects, image conversion with colorful models to grayscale & Harris corner finding etc. to be launch. In this plan work, the 3- Dimensional object is to be calculated is indicated by a 2-Dimensional area where the image background is invisible. The 2D object representation being concave shouldn't affect the work range.

2.1 Steps of designing the proposed model:-

* Download the dependencies OpenCV and Numpy in IDE PyCharm. Import Open Cv as cv2 and
numpy as np.

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* Write a Flag or a piece of code such that it lets the webcam on or off. ("webcam = False").
capture the video. Set parameters Width, Height, and Parameters.
*Code of all the settings required.

```
webcam=True
path='1.jpeg'
cap=cv2.VideoCapture(0)
cap.set(10,160)
cap.set(3,1920)
cap.set(4,1080)
scale=3
wP=210*scale
hP=297*scale
```

* Hence settings are done. Writing the code to measure the image.
* Writing a python file (utlis.py) to find the contours and apply processes, as code, to the image input to find the real-time object measurement.
* Create a canny image of the input image. Apply dilation and erosion features so that the process of creating a canny image is smooth.
* Writing code to find the constraint of the white paper which is a rectangle.
*Applying filter as a rectangle as the background white paper is rectangle. Finalizing the countors and appending the length and area. Hence specifying the detection of the white paper.
* Applying mathematical concepts and with the help of a canny image measure the object placed on the white paper.
* Applying an arrowed line and put text to display the estimated measurement of the object.

III. RESULTS AND DISCUSSION:-

The software application is assigned to shoot the image using camera with 44.4 ˚vertical angle of view. The results were examined with Logitech C920 HD pro Webcam camera, which satisfies the angle of view condition.
The results ofthe application was acquired and note d by testing several number of images containing o bjects with colored dimensions,
at colored lengths from the camera.

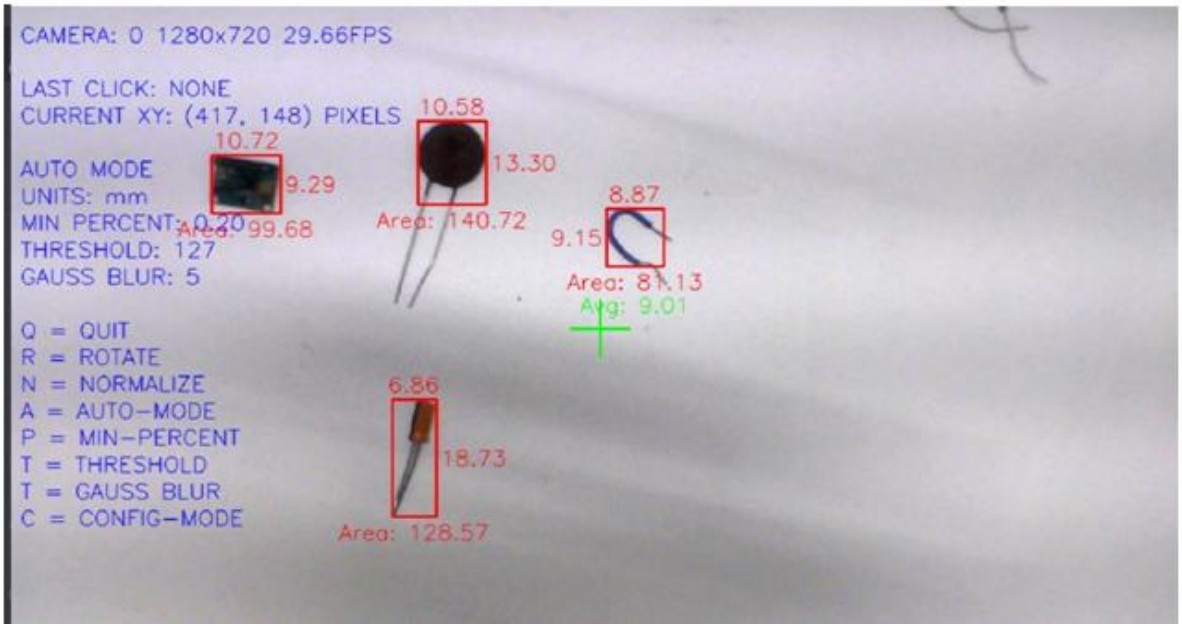

Fig 02: Experimental Screenshot 1

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Fig: 03 Experimental Screenshot 2

In Fig. 02 and Fig. 03 the screenshot is taken while performing it live and the screen appears to be as such. The dimensions of the objects are recognized and are shown in unit cm. the right side is the live video frame of the object.

IV. CONCLUSION AND FUTURE SCOPE:

***Conclusion:-**

The screenshot is taken while performing it live and the screen appears to be as such. The dimensions of the objects are recognized and are shown in unit cm. the right side is the live video frame of the object.
As a result of this system, many improvements can be made to the industrial sector. The system successfully measures the dimensions of the object in real-time. Hence, the computer vision (webcam device and code) is used to measure the dimensions in real-time. It captures the image from the real-time videotape frame and also displays its confines. A Canny edge detector is successfully used to detect the dimensions. This technique works fast and has many advantages and salient features that can be implemented in the real world.

***Future Scope:-**

Machines are used in every part of human life. Machines work according to us but in today's world, we work according to machines. The rush to soar high is immense. Hence, machines are important and so are the corridor of them. If the corridor don't fit well a machine cannot work appropriately. The dimensions of the objects sure make a great impact. This AI IOT grounded design will help in measuring the dimensions in real-time. It's accessible and easy to use. It also gives accurateness and assurance of the manufactured product. As it's a one-time investment it surely has a great future scope.

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