

COLOR DETECTION USING PANDAS AND OPENCV

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ABSTRACT:-

Color detection is the process of detecting name of the color. Here this is easy task for human to detect the color and choose one. But computer cannot detect the color easily. This is tough task for computer to detect the color easily. So that's why we choose this project. Many of the project and research papers are written on this problem. But we use different techniques for this project. Pandas and openCV libraries used in python languages. Open Source Computer Vision Library. Open CV was designed for computational efficiency and with a robust specialise in real-time platform that gives video and audio encoding infrastructure.

Keywords: Color Detection, Open CV, Pandas

I. INTRODUCTION

Before going into the speculations of the project it is important to know the definition of color detection. It is simply the process of identifying the name of any color. It is obvious that humans performs this action naturally and do not put any effort in doing so. While it is not the case for computers. Human eyes and brain work in coordination in order to translate light into color. Light receptors that are present in eyes transmit the signal to the brain which in turn recognizes the color. There is no exaggeration in saying that humans have mapped certain lights with their color

names since childhood. The same strategy is useful in detecting color names in this project. Three different colors Red,Green and Blue are being tracked by utilising the fundamentals of computer vision. After successful compilation when we execute the code a window redirects the image displayed on it whose path is given as an argument.

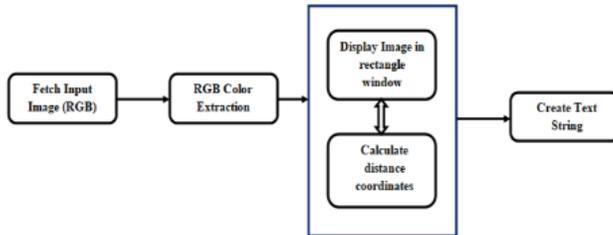
II. EXISTING SYSTEM

In the existing system they have gone through with the opencv but while extraction of the colors they got the wrong outputs. There is no exact color representation of colors with accuracy.

III. PROPOSED SYSTEM

In the proposed system, we are introducing the CV database and according to it the number of shades that can be identified using 865 color names along with their RGB and hex values. Whenever the cursor clicks the image, it automatically shows the RGB shades color values.

IV. SYSTEM ARCHITECTURE



In the above architecture shows the capability for the project. It consists of a well defined sequence diagram that is abstracted from the source code. It leverages the rich capabilities of the technology such as OpenCV library in the python. The above architecture makes the process more efficient based on principles and properties related to each other. As we know the red, green and blue are the primary colors that can be mixed to produce different colors. The present color detection project takes the path of an image as an input and looks for the composition of three different color red, green and blue in an image.

V. IMPLEMENTATION TECHNIQUES

Image Capture:

The first step is to fetch a high quality image with resolution. To load an image from a file we use `Cv2.imread()`. Image should be in working directory or full path of the image should be given. `Img=cv2.imread(img path)`.

Extraction of RGB colors:

In this phase, the 3layered colors are extracted from the input image. All the color images on the screens such as televisions, computer, monitors, laptops and mobile screens are produced by the combination of Red, Green and Blue light. Each primary color takes an intensive value 0 (lowest) to 255 (highest). When mixing three primary colors at different intensity levels a variety of colors are produced. For example: If the intensity value of the primary color is 0, this linear combination corresponds to black. If the intensity value of the primary colors is 1, this linear combination corresponds to white. $Index = (color, color-name, hex, R, G, B)$ Calculate minimum distance from coordinates: The rectangle window is used to display the image with the shades of color. After the double click is triggered, the RCB values and color name is updated. To display an image `Cv2.imshow()` method is used. By using `cv2.rectangle` and `cv2.putText()` functions, the color name and its intensity level can be obtained. `.text=getColorName(r,g,b)+'R=' +str(r)+G='+str(g)+B='+Str(r)`.

VI. RESULT





VII. CONCLUSION

In this paper we defined to get the required color field from an RGB image. In this various steps are implemented using openCV platform. The main positive point of this method is its color differentiation of a mono color. In the future scope, the detection of the edge detection techniques has different other applications like facial detection color conversion for grey scale image etc. That can also be implemented.

VIII. REFERENCES

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