

- BOUNDING BOX SIZE

What percentage of the total image does it cover? If more than 70%, then it would be an error and throw a warning, if size is between 30% and 70%.

- BACKGROUND COLOR

Extract dominant color (RGB or HSV) inside the bounding box using KMeans
Use Euclidean distance to find the closest label.

```
COLOR_DICT = {"white": {255, 255, 255},  
              "red" : {255, 0, 0},  
              "orange" : {255, 150, 0},  
              "yellow": {255, 235, 0},  
              "green": {0, 200, 0},  
              "blue": {67, 133, 255},  
              "grey": {128, 128, 128},  
              "black": {0, 0, 0}  
}
```

If the dominant color label doesn't match the background color, then throw an error for the following colors - RED, BLUE, GREEN, YELLOW, ORANGE

Since construction signs are usually orange, check that all construction signs have orange as background color.

Traffic lights will have black as dominant color, their background color should be 'other'

For non_visible_face_labels, the dominant color label should be grey.

- CHECK BOTTOM

Traffic control signs (if travelling in a car) will be on the top or the sides. Therefore, check that there are no bounding boxes of traffic_control_sings on the bottom centre of the images.
Throw ERROR

- TRAFFIC LIGHTS ASPECT RATIO

3 lights traffic signal usually are of the same size (Aspect Ratio - 3:1). Check if they have a background color of other

- OVERLAPPING BOUNDING BOXES

Complete overlap can be observed when there is a sign behind a traffic light. If there is overlap, check for occlusion.

- CHECK TRUNCATION

If one side of the bounding box is on the image edge and truncation is 0%, throw a warning just to check if it is correct.

- CHECK IF SIGN IS FOR COMMERCIAL PURPOSES

(Like House for Sale and store signs)

Maybe use OCR? Checking dominant color in the sign might help

How to distinguish billboards?

- CHECK IF ONE BOX IS USED FOR MULTIPLE SIGNS

What are the common sizes of signs? Check if the bounding box aspect ratio is among the predetermined sizes. If not, throw a warning.

<https://mutcd.fhwa.dot.gov/SHSe/Design.pdf>

<http://www.trafficsign.us/oldmutcd/1978/2b-regulatorysigns.pdf>