**README**

Give 40 Flared image as Flare Training Data and 40 Good image as Good Training data.

Task is to make a model that indicates any image as Flare or Good using the images provided as training data.I have started with importing relevant libraries.Studied various articles and web sites about how to detect flare in image.With my limited scope and search I could understand he Mean Lightness, Number of White pix, Detecting curved line in morphology scan are the main features .Keeping in mind about the above guide lines ,I have started Exploratory Data Analysis. Set the lightness threshold to filter the lens flare (small blob). Used canny to detect the lens flare edge. Find the lens flare contour( Hue, Lightness, Saturation).Call the list of image in the directory of flare image .Using KK formula to use them in the function. Declare function flr[]:Declared logic with Mean Lightness ( as> 100).

Print image number./Mean Lightness/Imsize/Number of White\_Pix/Number of Black\_Pix/Which gives me the Gray area.And print (Flare ,K) to know the Response from the ligic and function for each image as O and 1.Repeated the same for good image data too.

As per the condition I have Mean Lightness > 1 makes Flare=1, I have the response.

BUT

From the supplied images I know the Response already which is flare or good.

Therefore I have two set of response .As it is a classification problem. I decided to go for logiostic regression.I made a .csv file in XL manually with 41 data only. I find it my limitation for not being able to do it with a python code. Trying to learn and need some senior and experts guide to think differently.

Anyway, From sklear imported logistic regression function. Spplit the data, fit the data, have the confusion metrics,plot AUC curve.

The AUC curve shows 1 when using the feature data obtained from the condition between Mean Lightness value only. Which is also proportionate with Number of White pixels in the image.

But, when used the supplied responses , I found AUC value 0.77777

**Limitations**:

I have only used 41 data n the csv file . Which can be increased. I am not looking for expert advice to do it better .

Need to discuss more with the problem origin to get other feature.

Note: The image and the conda running folder should be same.( had trouble to fix it).

(In the pdf code file some lines are broken and showing in the next line which may cause error.)

Acknowledgement: Kaggle,Stack Overflow,Google ( Didn’t recorded name)