Bogazici University, Electric Electronic Eng.,
H. Işıl Bozma
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EE 576 - Hw 2

The goal of this project is to make you work with image operations. Please use any of the available OpenCV functions unless otherwise asked. If you like, you may modify their source code or write your own functions as well. Consider a web camera and two different type of images. The first one should be an image that contains a single dominant object. The second one should be an image of a scene.

(**a**) Now consider different 25 different colors including black (1), white (2), dark gray (3), mid-gray (4), light gray(5) and 20 different colors including red, green, blue and others of your choice including their light and dark shades. Now write code that will do the following:

1. Get an input RGB image from the user. (in the main method)
2. Display the three channels separately as gray images. (A method) Interpret the results in your report.
3. Get a color of choice from the user (main method)
4. Show the original image and the image which shows only the specified color side by side so that you can verify the result.
5. Apply this continually until stopped

Give 2 samples of your results in your report by presenting the original image and color thresholded image side by side and evaluating the results.
(**b**) Now construct a HSI table that shows your map for each H, S and I values. Present your table and explain your reasoning in your report. Adapt the code you have written write code that will do the following:

1. Get an input RGB image from the user.
2. Transform it to HSV.
3. Display the three channels separately as gray images. Interpret the results in your report.
4. Get a color of choice from the user
5. Show the original image and the image which shows only the specified color side by side so that you can verify the result.
6. Apply this continually until stopped

Give 2 samples of your results in your report by presenting the original image and color thresholded image side by side and evaluating the results.

(**c**) Now consider the intensity channel and apply one of the following two operations:

1. Averaging
2. Gaussian
3. Sobel operator

Show the original image and the resulting image side by side. Give 2 samples of your results and comment on their differences.