



# LAB 04:WORKING WITH COLOR

CS353 IMAGE PROCESSING

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## INTRO

During this week, you are expected to extend image enhancement techniques to vector (color) images.

### STEP 1:

Use your script from last week, to import yet another image of Lena (this time making sure it is full color)

### STEP 2:

Find a way to add some Gaussian ( $\mu=0$ ,  $\sigma=0.1$ ) noise to the image.

### STEP 3:

Use a function to split the image into its Red, Green, and Blue components, and extract three respective histograms.

### STEP 4:

Perform independent HE and display the new (enhanced) components together with the new (equalized) histograms.

### STEP 5:

Merge, and set the new (independently enhanced) version of the image next to the noisy one to compare.

### STEP 6:

Repeat steps 3-5, this time splitting by a cylindrical color model and equalizing the intensity component only.

### STEP 7:

Set the two (enhanced) versions of your image (i.e., RGB and HSI) side by side to compare.

### STEP 8:

Now use a function to map the color values to scalars and convert your image to monochrome (greyscale).

### STEP 9:

Use a couple of standard lookup tables (e.g., jet, ocean, rainbow, etc.) to pseudo-color this new (monochrome) image.

### STEP 10:

Apply a 5-level intensity slicing to pseudo-color based on your own parameters (i.e., assign hues to the 6 intervals).

### STEP 11:

Create another document containing code snippets alongside output screenshots for each step.

### STEP 12:

Save your work, and submit the document under the corresponding slot on Moodle.



THE END