CSE 4228: Assignment-3
Spring 2024
(Group_B1)
Set-A [for Even ID]

Image Enhancement (Bit Plane Slicing and Histogram):

Task#1

Perform Histogram Equalization Algorithm:

Step a: Read image, I and convert it to gray when the image is a RGB image
Step b: Manually compute the histogram of the input image, h
Step c: Manually compute PDF
Step d: Manually compute CDF
Step e: Multiply each CDF value by L-1 (highest possible intensity)
Step f: Round the values to get new gray level, s
Step g: Create the equalized image using s
Step h: Manually compute the histogram of the output image, H
Step i: Display the images and histograms using the subplot() and title

Task#2

Perform the Bit Plane Slicing:

- Read and display the input Gray image.
- Perform the Bit Plane Slicing
- Create and write the combined output image using the 3rd, 4th, 5th, and 6th bit planes.
- Display the original image, combined output image, and all the bit plane sliced images.
- Use title and subplot() to get all the images into a single figure.

Please Note:

- Do not use any built-in function other than RGB to grayscale conversion, which you learned in your sessional class.

NB: Do not Zip. Submit your Input image file, Output Image File, *.m Matlab code by uploading them individually. Rename the files matlab ***.m file like the following:**

your_group_student_ID.m

Example: ***input.jpg***
output.jpg
B1_20200204003.m

CSE 4228: Assignment-3
Spring 2024
(Group_B1)
Set-B [for Odd ID]

Image Enhancement (Bit Plane Slicing and Histogram):

Task#1

Perform Histogram Equalization Algorithm:

Step a: Read image, I and convert it to gray when the image is a RGB image
Step b: Manually compute the histogram of the input image, h
Step c: Manually compute PDF
Step d: Manually compute CDF
Step e: Multiply each CDF value by L-1 (highest possible intensity)
Step f: Round the values to get new gray level, s
Step g: Create the equalized image using s
Step h: Manually compute the histogram of the output image, H
Step i: Display the images and histograms using the subplot() and title

Task#2

Perform the Bit Plane Slicing:

- Read and display the input Gray image.
- Perform the Bit Plane Slicing
- Create and write the combined output image using the 1st (LSB), 2nd, 7th, and 8th (MSB) bit planes.
- Display the original image, combined output image, and all the bit plane sliced images.
- Use title and subplot() to get all the images into a single figure.

Please Note:

- Do not use any built-in function other than RGB to grayscale conversion, which you learned in your sessional class.

NB: Do not Zip. Submit your Input image file, Output Image File, *.m Matlab code by uploading them individually. Rename the files matlab ***.m file like the following:**

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