Group: 2

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Assignment Discussion Lesson 13

1) What is luminance?

2) Explain how to make image darkness?

3) Explain how to make image brightness?

4) What is histogram equalization?

5) Explain how to calculate the histogram equalization?

Answers

1). Luminance is a photometric measure of the luminous intensity per unit are a of light traveling in a given direction. Luminance is used in the video industry to characterize the brightness of display.

2). To make image darkness we need to do:

- First, extract all information (intensities) from original image by doing two loops.

- Second, determine a modify value.

- Third, do operation by talking each intensity in each pixel from original image minus the modify value. If the new intensity is smaller than 0, just make it 0. Be careful, for color image each intensity composes by 3 values: R, G and B.

- Fourth, generate new image (darkness image) by doing two loops. It means that take new intensities from step 3 and insert each pixel. Pixel in coordinates (0,0_ must insert the new intensity from pixel in coordinate (0,0) too.

- Last step, save a new darkness image.

3). To make image brightness we need to do:

- First, extract all information (intensities) from original image by doing two loops.

- Second, determine a modify value.

- Third, do operation by talking each intensity in each pixel from original image plus the modify value. If new intensity is bigger than 255, just make it 255. Also, be careful of color image.

- Fourth, generate new image (brightness image) by doing two loops, It means that take new intensities from step 3 and insert each pixel. Pixel in coordinates (0,0) must insert the new intensity from pixel in coordinates (0,0) too.

- Last step, save a new brightness image.

4). Histogram equalization is a method in image processing of contrast adjustment using the image's histogram. This method usually increases the global contrast of images when its usable data is represented by close contrast values. This allows for areas of lower local contrast to gain a higher contrast.

5). To calculate the histogram equalization, we need four step to do:

- Normalized histogram.

- Histogram Equalized image.

- Transforming the pixel intensities.

- Map the value back into original range.