Introduction to Image Processing

HW2

Due: 11/03

HW2.1 Histogram equalization

The following table give the number of pixels at each of the gray levels 0-15 in an image with these gray values only.

(a) Draw the histogram corresponding to these gray levels

(b) Perform a histogram equalization and draw the resulting histogram

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
25	35	65	75	75	70	0	0	0	0	0	45	40	35	25	35

HW2.2 Image Enhancement

Perform image enhancement by the methods learned in Chapter 4, including:

1. Piecewise linear stretching
2. Gamma correction, followed by fusion

You need to

1. Show the images (origin & enhanced) and compare
2. Compute the entropy of them

$$entropy = -\sum_{k} p(k) log_2 p(k), where\ p(k) is\ the\ density\ of\ level\ k$$

Reminder

- Test images for HW2.1 are found in Ecourse2
- Pack your report and source code into a zip file and upload to ecourse 2.
- RGB to YCbCr can be realized by function rgb2ycbcr