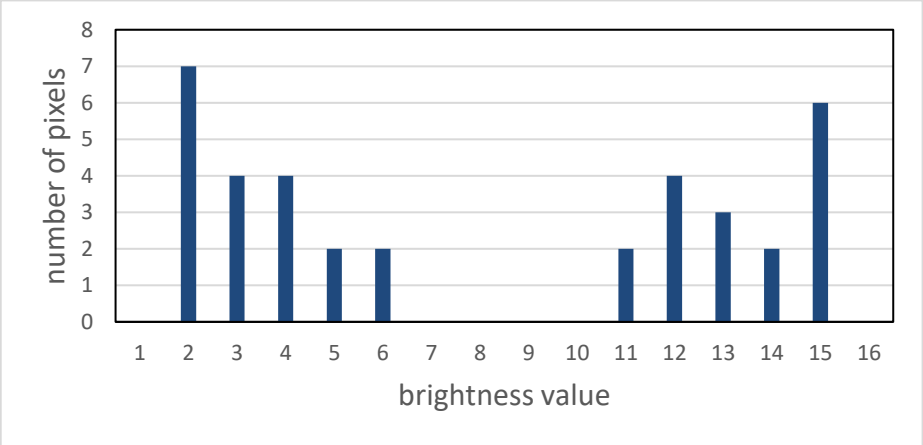
Department of Civil Engineering, National Taiwan University

Remote Sensing

(521 M7100) 2017
Due Date: 2016-5-10

Assignment #3

1. One popular histogram modification is to match the histogram of an image to a Gaussian or normal function. Suppose a raw image has the histogram indicated in the following figure. Produce the look-up table that describes how the brightness values of the image should be changed if the histogram is to be mapped, as nearly as possible, to a Gaussian histogram with a mean of 8 and a standard deviation of 2 brightness values. Note that the sum of counts in the Gaussian reference histogram must be the same as that in the raw data histogram, or both should be normalised to unity.



2. The following image is acquired by the UAV over the campus of NTU. The image can be downloaded from the following link.
(https://www.dropbox.com/s/0p8kor4b6cfsssd/5941.tif?dl=0)
   (a) Please enhance the image using the Gaussan contrast enhancement method
   (b) Compare and discuss the results of edge extraction using Canny operator for the original and enhanced images separately