

Tutorial

1. Given the following 8×8 3 bit image with pixel values as given.

0	0	0	0	0	0	0	0
2	2	2	2	2	2	2	2
2	2	2	1	1	1	3	4
2	2	2	1	1	1	3	4
2	2	2	1	1	3	3	5
2	2	2	1	1	3	3	5
2	2	1	1	1	3	4	6
2	2	1	1	1	3	4	7

Determine the processed image after the application of a transform to obtain a histogram which is as close to being constant as possible.

2. A 3 bit digital image has the following grey level distribution

level number	0	1	2	3	4	5	6	7
Number of pixels	632	370	201	461	210	651	1150	421

Apply a transformation to convert the distribution to as close to uniform as possible. Give the new number of pixels with each of the grey levels.

3. If instead of a uniform distribution, the image is desired to have a histogram of the form given below, calculate the closest resulting distribution of grey levels to this desired specification.

level number	0	1	2	3	4	5	6	7
Distribution	0	0	0	0	0.125	0.125	0.25	0.5