Training Workshop on Machine Vision (Image Processing Fundamentals)

Activity 3 – Determine output pixel intensity distribution after histogram equalization

Learning outcome: Learn the principle behind the histogram equalization operation

Task: The figure below shows the histogram of a 3-bit image of dimensions 15×15 pixels. Using the histogram equalization function given, determine the gray value distribution in the output image and, hence, draw its histogram.

$$N(g) = \max\left\{0, \text{Round}\left(\frac{2^k \times c(g)}{m \times n} - 1\right)\right\}$$