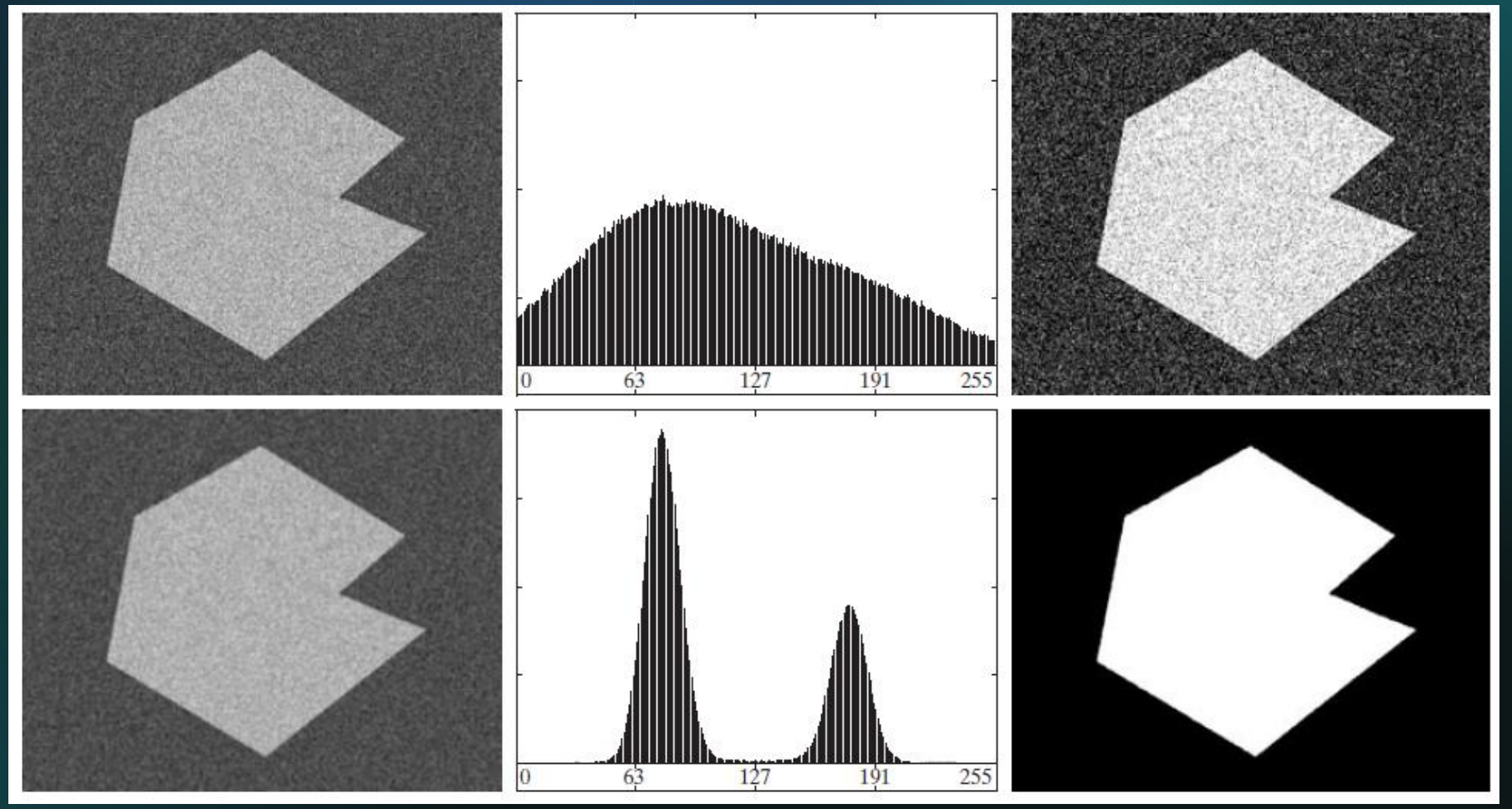
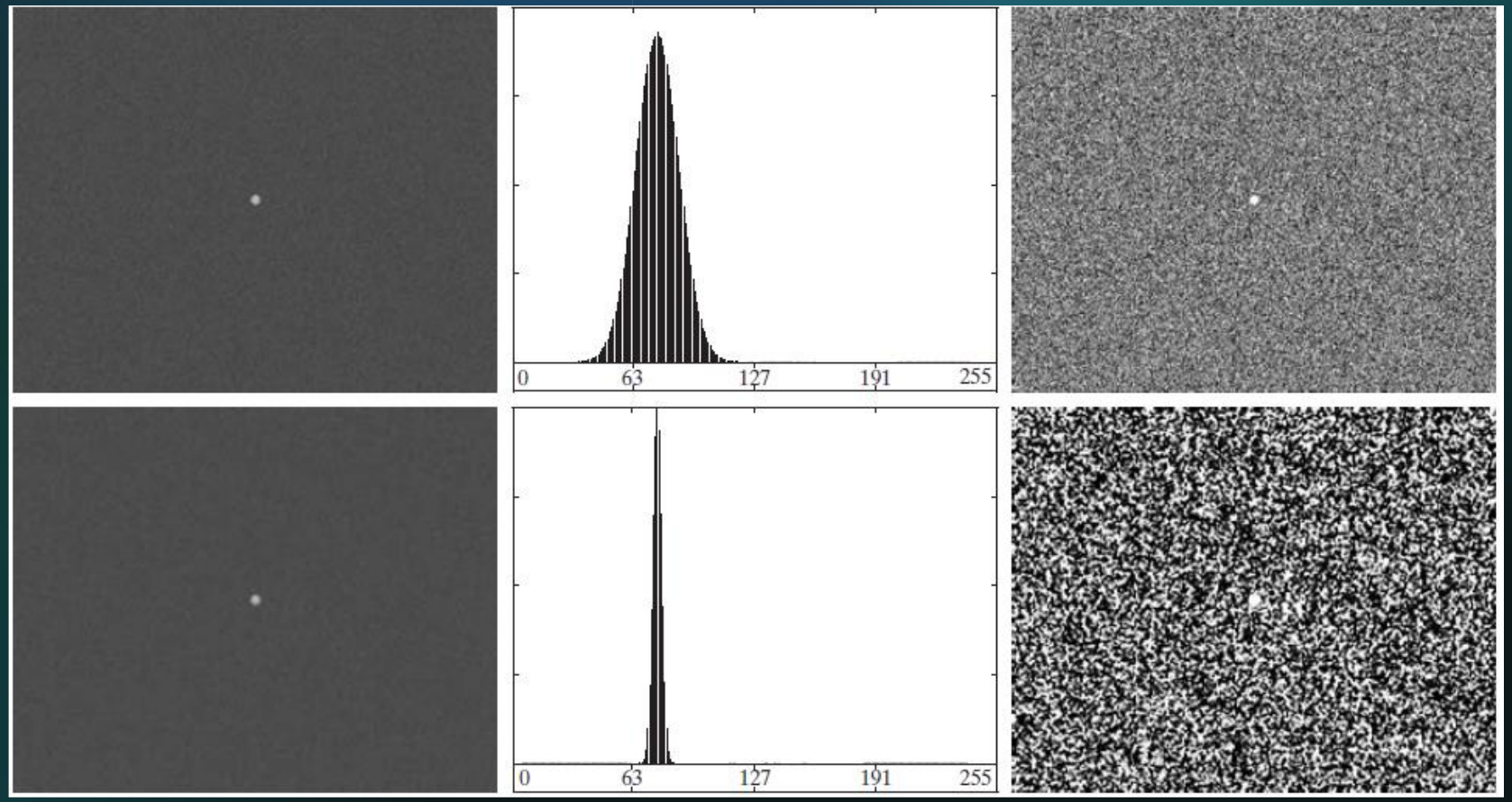
Segmentation

IMAGE SMOOTHING & EDGES

Noise & Filtering



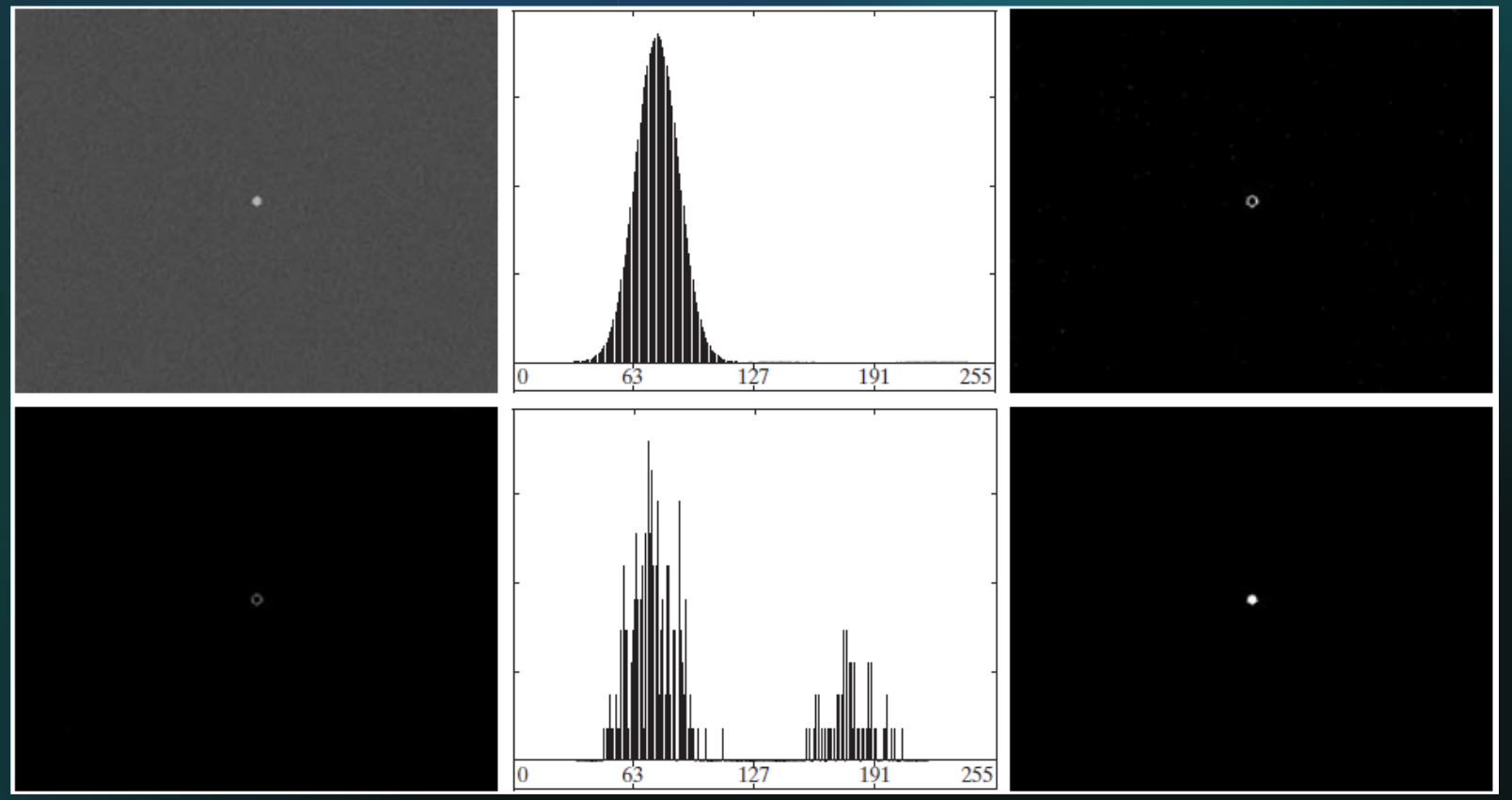
Effect of object/background size

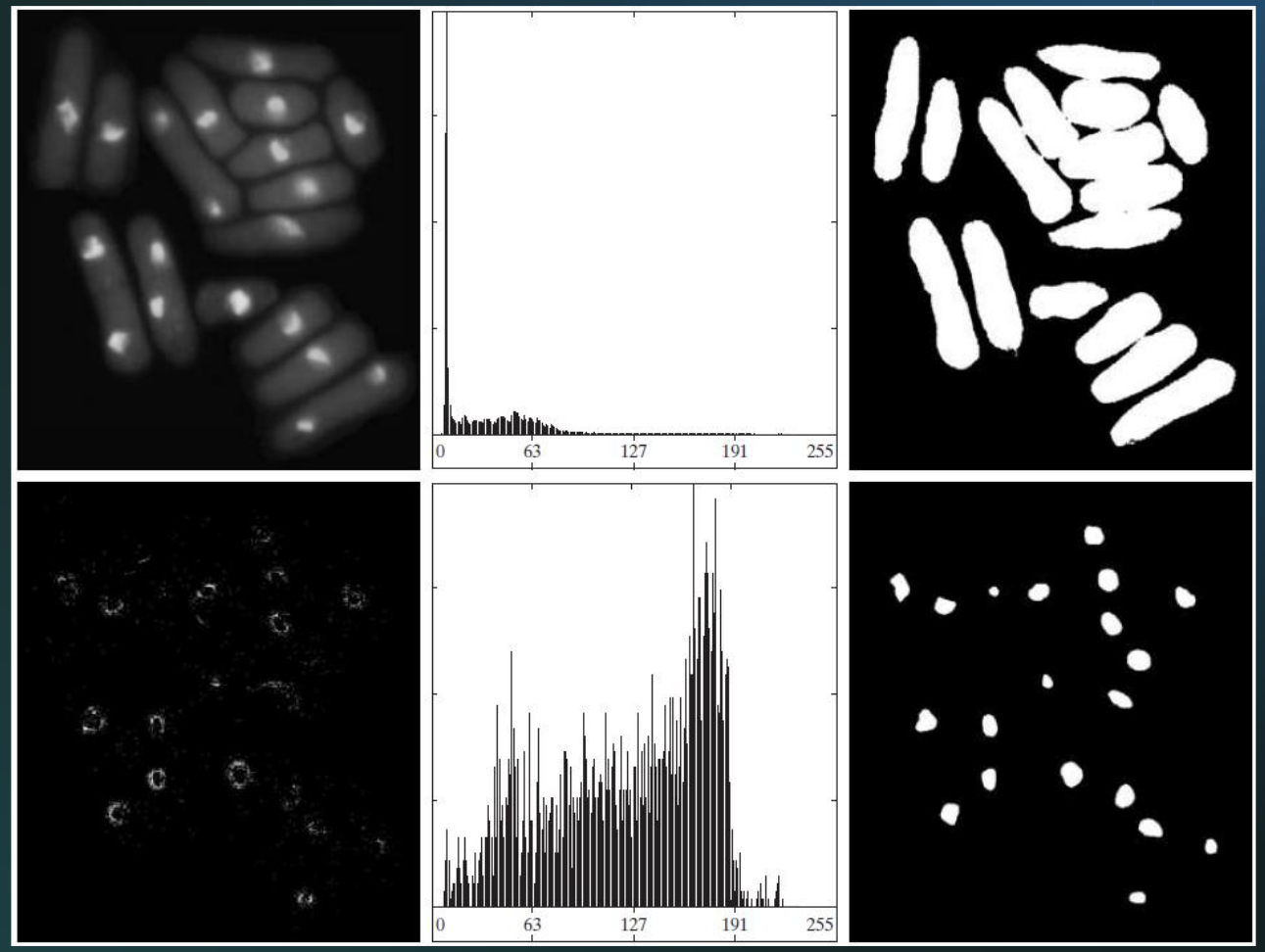


Using Edges for Thresholding

- Gradient Magnitude
- Laplacian

Using Edges for Thresholding (Gradient)





Using Edges for Thresholding (Laplacian)

Algorithm (Edges for thresholding)

- Compute an edge image as either the magnitude of the Gradient, or absolute value of Laplacian, of f(x,y).
- Specify a threshold value T.
- Threshold the image from step 1 using the threshold from step 2 to produce a binary image, $g_T(x,y)$. This image is used as a mask image in the following step to select pixels from f(x,y) corresponding to “strong” edge points.
- Compute a histogram using only the pixels in f(x,y) that correspond to the locations of the 1-valued pixels in $g_T(x,y)$.
- Use the histogram from step 4 to segment f(x,y) globally.