Pengolahan Citra
Image Segmentation

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1. Histogram Thresholding (Lib)

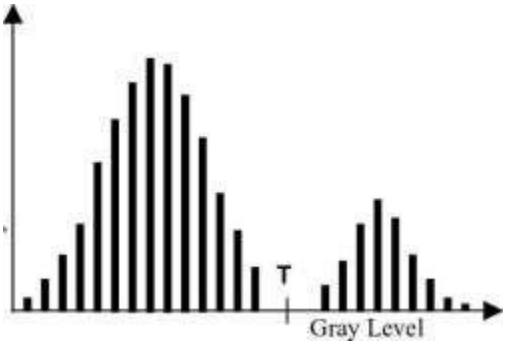
Scikit-image memiliki beberapa fungsi untuk threshold pada library `filters`. Berikut ini contoh thresholding menggunakan metode Otsu.

```
from skimage import io, color, filters, util
import matplotlib.pyplot as plt

i1 = io.imread('1101.jpg')
G = util.img_as_ubyte(color.rgb2gray(i1))
T = filters.threshold_otsu(G)
S = util.img_as_float(G > T)

plt.subplot(1,2,1); plt.imshow(i1)
plt.title('Original'); plt.axis("off")
plt.subplot(1,2,2); plt.imshow(1-S, cmap='gray')
plt.title("Thresholded"); plt.axis("off")
plt.show()
```

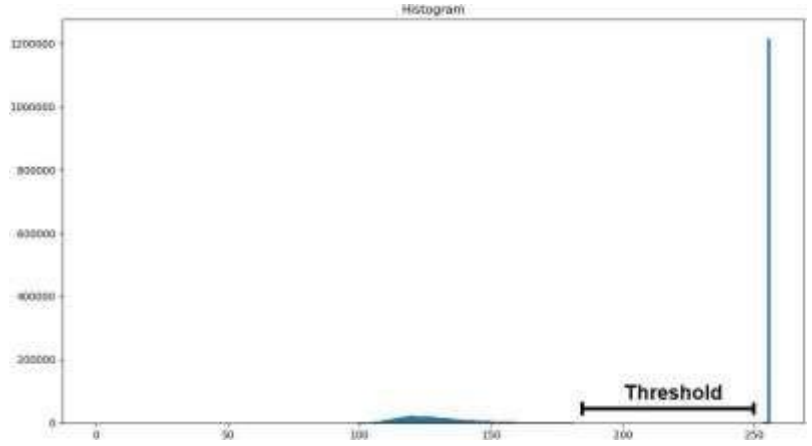
2. Histogram Thresholding (Manual)



Kita dapat memisahkan citra kedalam area ‘terang’ dan 'gelap' dengan menggunakan Thresholding (T).

$$g(x,y) = \begin{cases} 1, & \text{if } f(x,y) > T \\ 0, & \text{if } f(x,y) \le T \end{cases}$$

```
plt.hist(G.flatten(), 256, range=(0,256))
plt.title('Histogram'); plt.show()
```




```
m, n = G.shape
t = 220
for i in range(m):
      for j in range(n):
            if (G[i,j] <= t):
                  G[i,j] = 0
            else:
                  G[i,j] = 1

plt.subplot(1,2,1); plt.imshow(i1)
plt.title('Original'); plt.axis("off")
plt.subplot(1,2,2); plt.imshow(1-G, cmap='gray')
plt.title("Thresholded"); plt.axis("off")
plt.show()
```