THRESHOLD SYMBOLS

$T(x,y)$ ⇝ the threshold value we have set
$src(x,y)$ ⇝ the threshold value of the image (in the x,y pos)

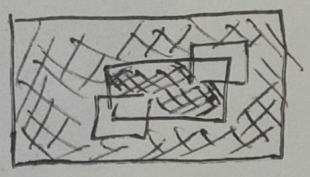
ADAPTIVE METHODS

CV2. ADAPTIVE_THRESH_MEAN_C : threshold value is the mean of neighbourhood area.

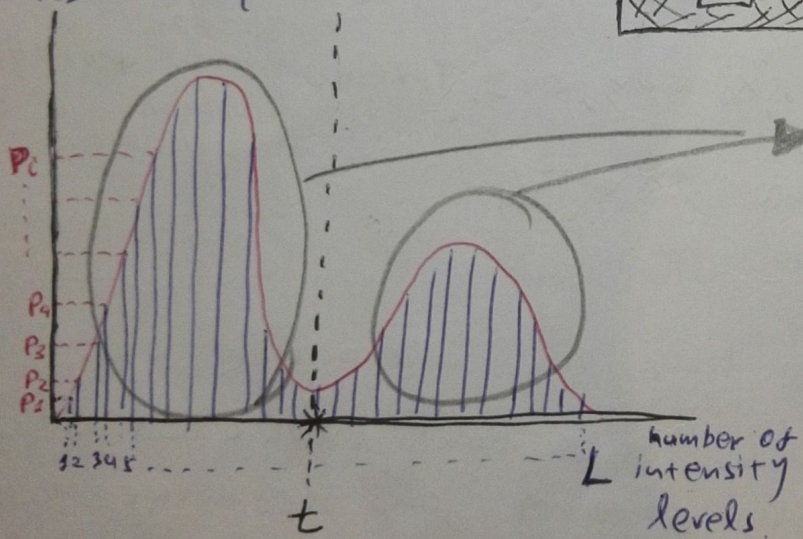
CV2. ADAPTIVE_THRESH_GAUSSIAN_C : threshold value is the weighted sum of neighbourhood values where weights are a gaussian window.

Otsu's Method

- Otsu searches automatically, for the best threshold value. It is best to use Otsu when your ~~image has two~~ image's histogram has two peaks.
- So, if we have an image:



And its histogram is like:



two classes ($w_0^{(t)}, w_1(t)$) seperated by "t"

$$w_0(t) = \sum_{i=0}^{t-1} p(i)$$

$$w_1(t) = \sum_{i=t}^{L-1} p(i)$$

$w_0 + w_1 = 1$

↳ So, Otsu finds the t that he believes is the best position to seperate the two peaks.

Then, Otsu finds the two variances (standard & dauiparan) for the two seperated classes: $\zeta^2 = \sum_{i=2}^{\vee} \frac{(x_i - \bar{x})^2 \cdot r_i}{\blacksquare}$ and then, it uses this function: $\sigma^2_{w(t)} = w_0(t) \cdot \sigma_0^2(t) + w_1(t) \cdot \sigma_1^2(t)$ to make another function (google it), to find the optimal threshold