

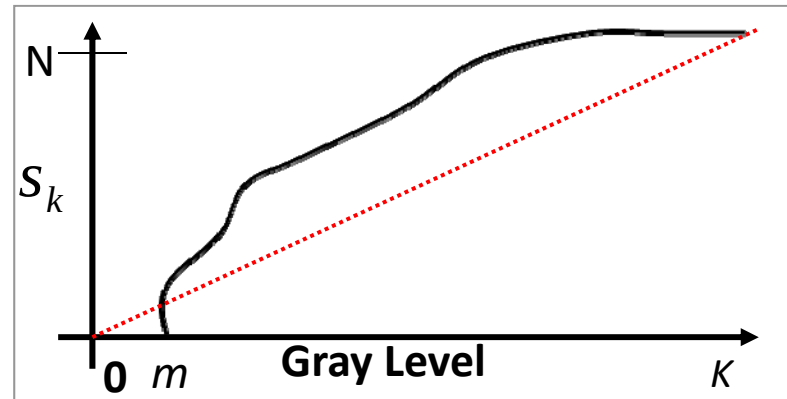
# Histogram Equalization

- Compute Cumulative Histogram

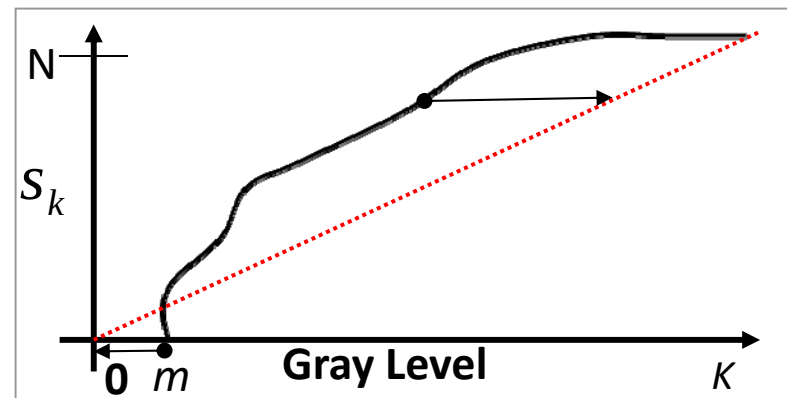
$N$  Pixels, greylevels  $0 \dots K$

$n_i = \#$  pixels at greylevel  $i$

$$S_k = \sum_{i=0}^k n_i$$



- For every original grey level  $\underline{k}$ :  
Change its gray level to  $S_{\underline{k}}$
- Stretch (linear) new gray levels back to  $[0 \dots K]$ 
  - $S_m \rightarrow 0$ ;  $S_K \rightarrow K$
- $\underline{k} \rightarrow K (S_{\underline{k}} - S_m) / (S_K - S_m)$



$m$  is the first non-zero gray level