

4th April '23

OPEN CV



Let's Start @ 9:10

Self-Driving Mercedes Will Be Programmed To Sacrifice Pedestrians To Save The Driver



Mercedes gets around the moral issues of self-driving cars by deciding that—of course—drivers are more important than anyone else.





Image Segmentation

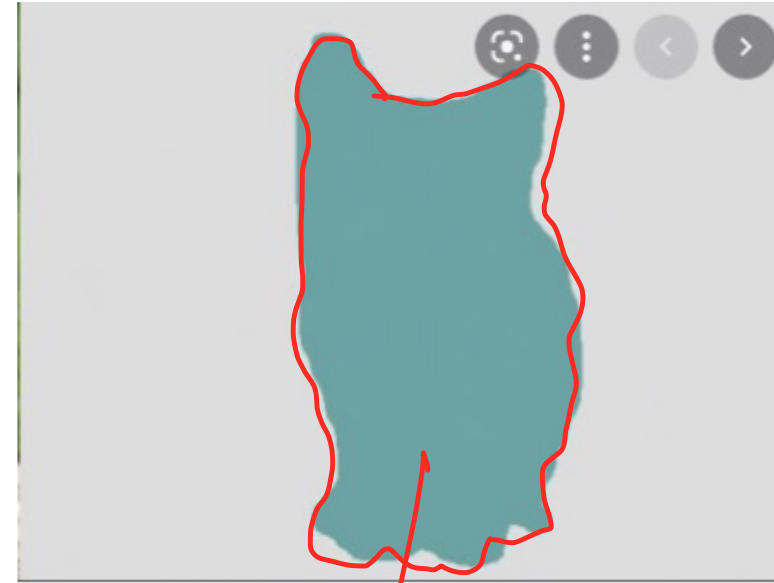
60 FPS / 60Hz



grass

Road

Cat



mark

OPEN CV library

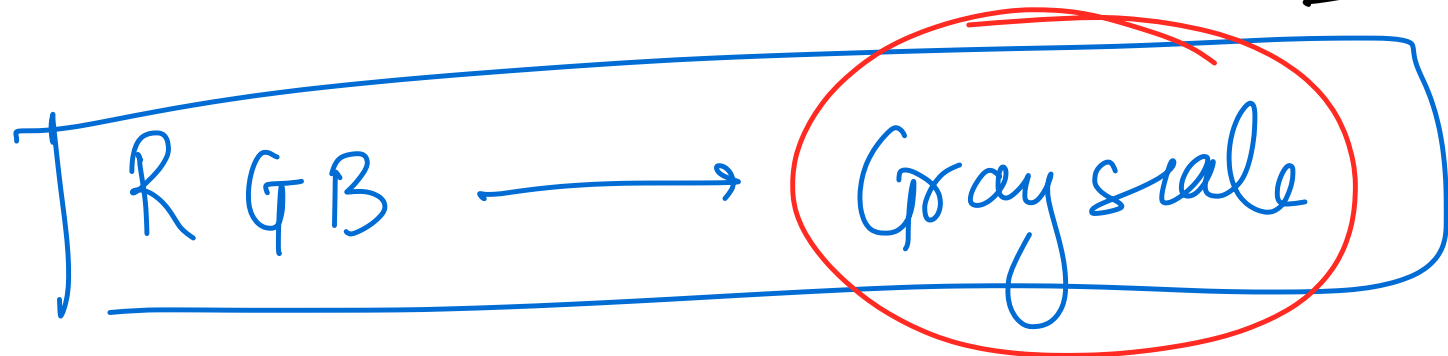
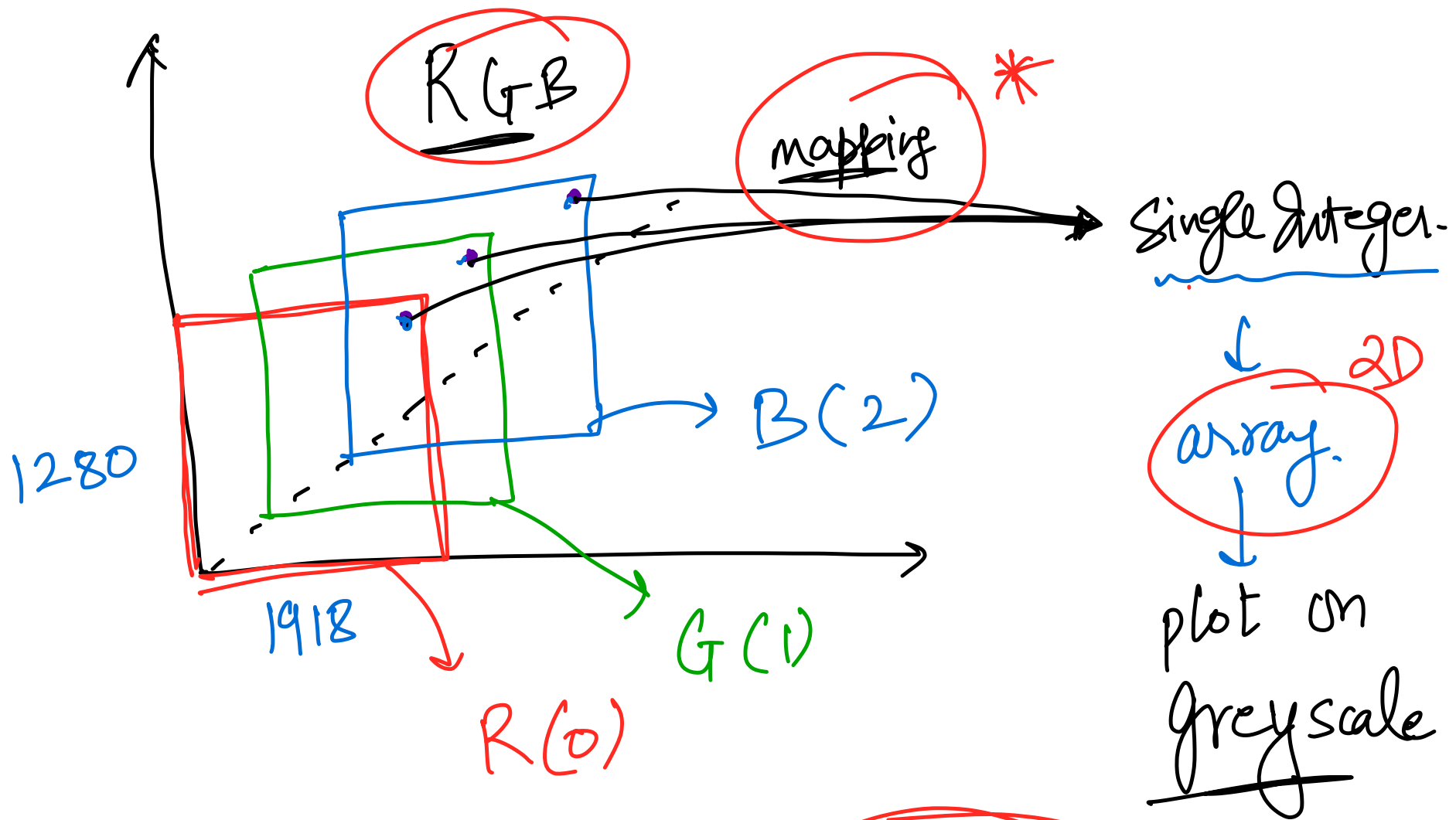


Image Processing

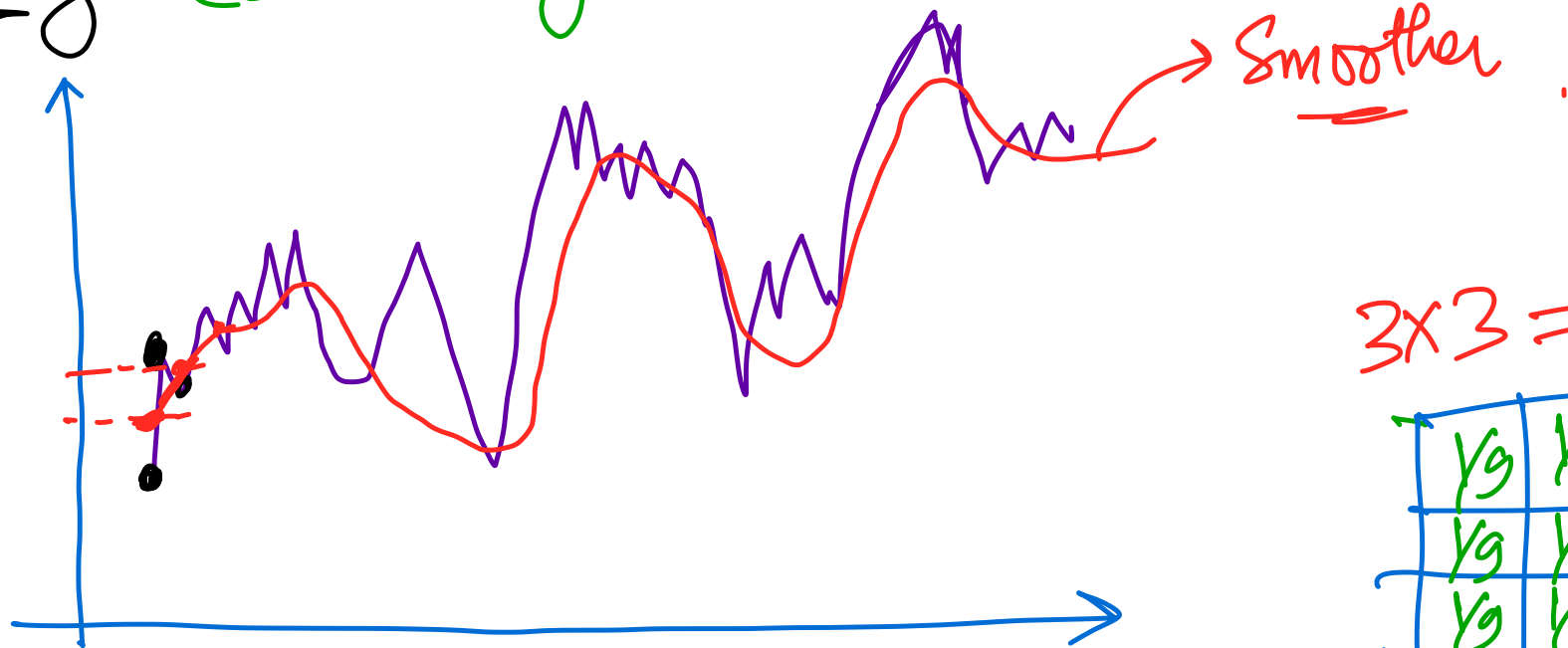


Segmentation





Blurring : (Smoothing).



$$3 \times 3 = 9$$

y_g	y_g	y_g
y_g	y_g	y_g
y_g	y_g	y_g

Original



30	40	205
198	105	65
155	78	95

→ 9 pixels.

$$(30 + 40 + 205 + \dots + 95)$$

↓
3x3

$$= x \xrightarrow{9} \text{Avg. value}$$

Original



Blurring /



De noising



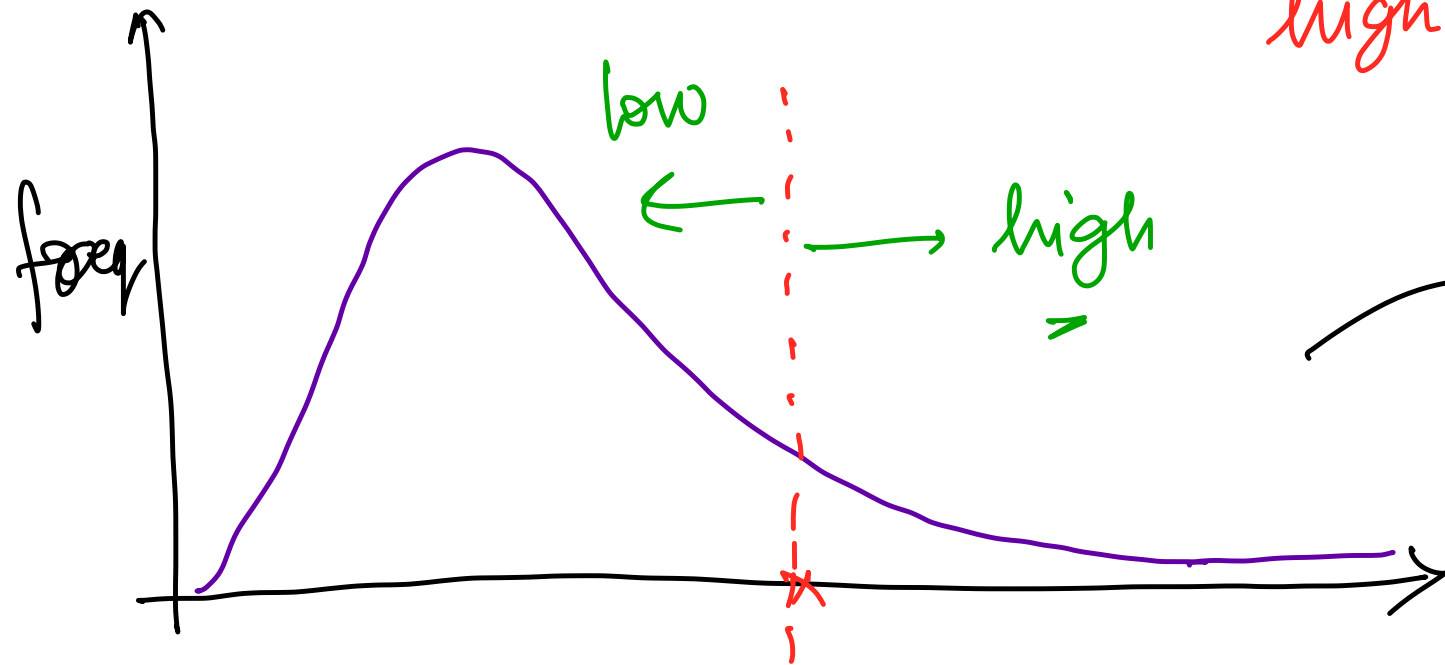
$1/9$	$1/9$	$1/9$
$1/9$	$1/9$	$1/9$
$1/9$	$1/9$	$1/9$

3x3 (Kernel)

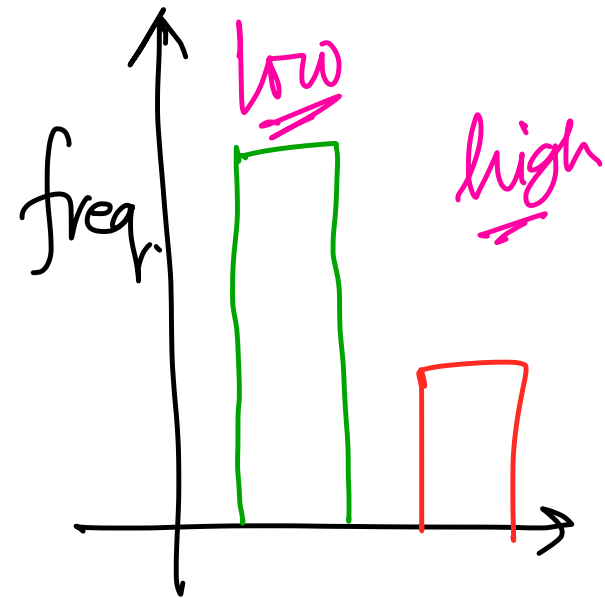
↓
Size

↓
filter

Income distribution :



low
high }
→



Thresholding

RGB image



→ grayscale (0-255)
2D

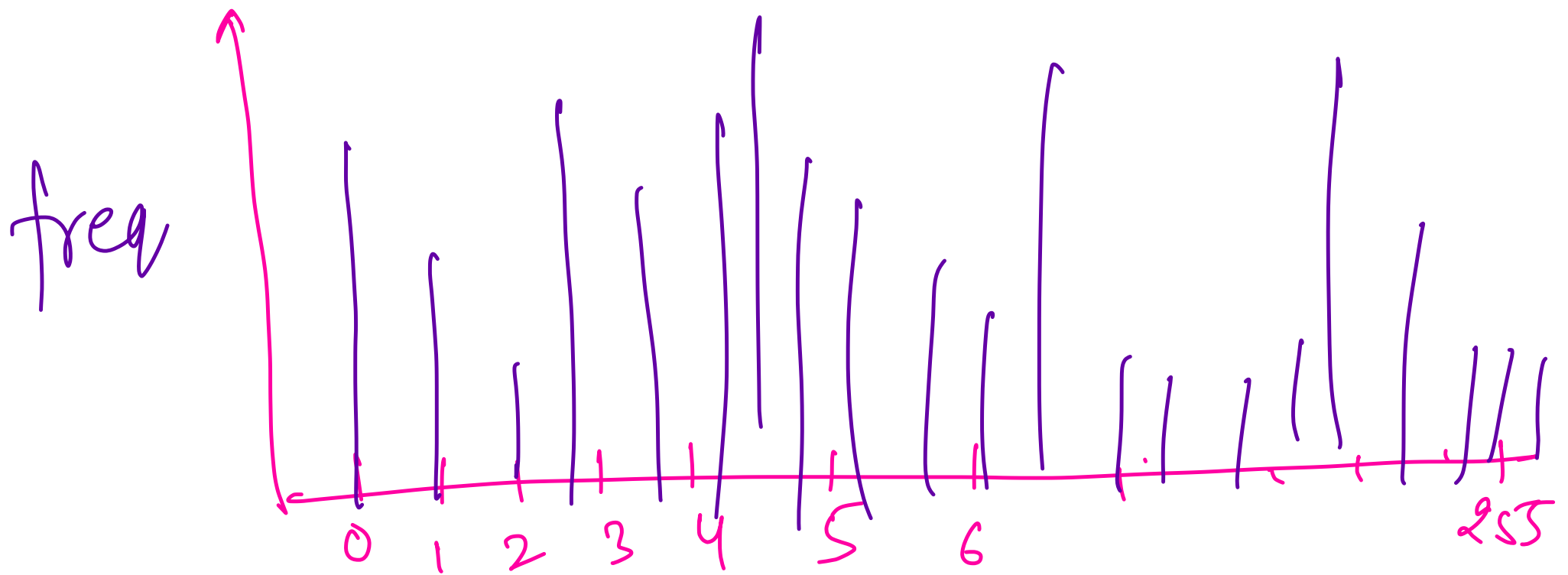
20	219		
	64	55	

freq. distribution

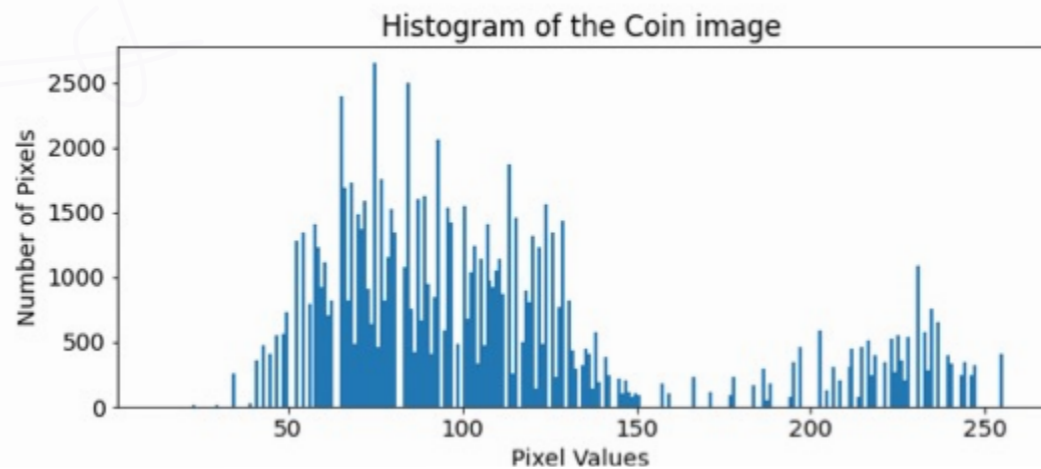
0 , 1 , 2 , - - - , 255
↓ ↓ ↓ ↓
50 119 60 509

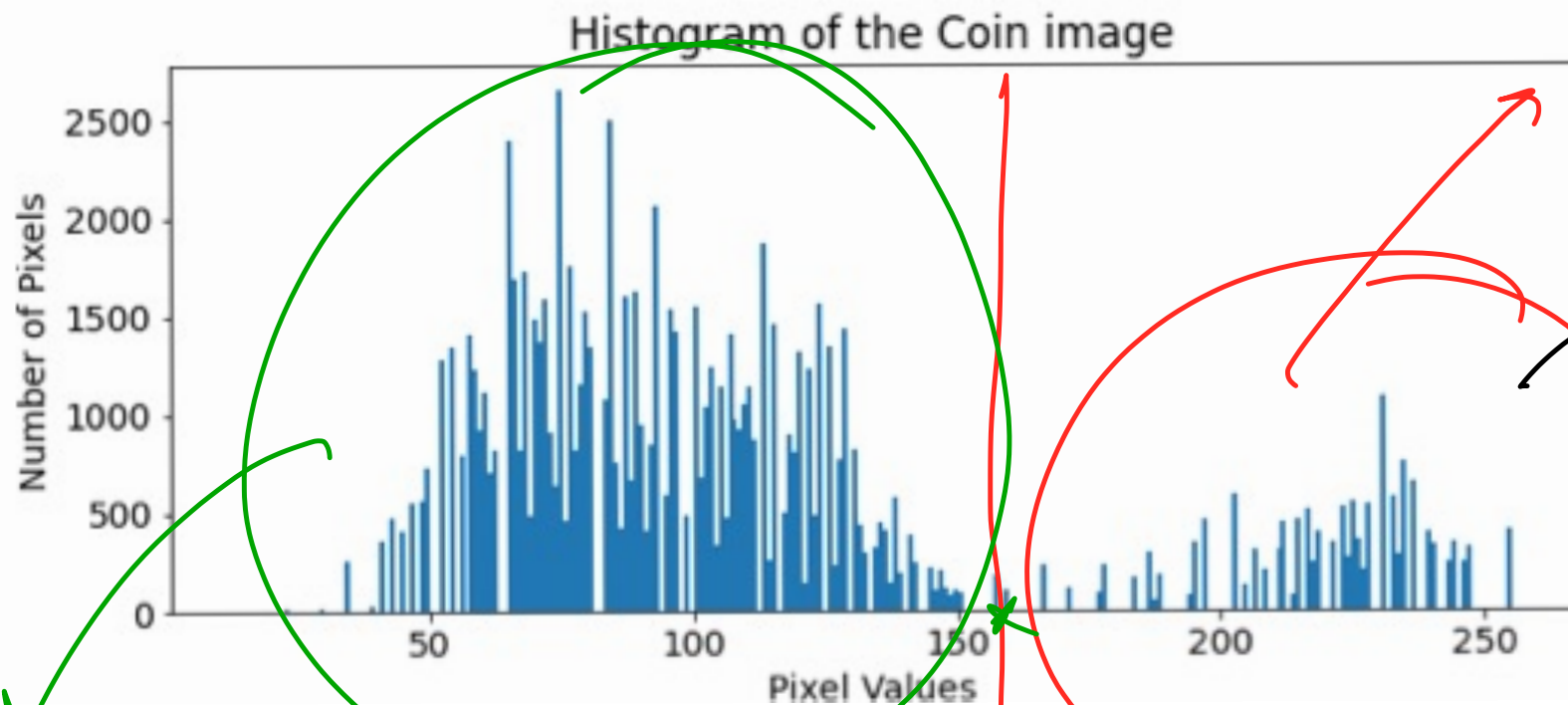
0 → dark.

255 → Brightest



RGB \rightarrow gray scale





high.

255

Brightest
Pixels

low
Intensity.

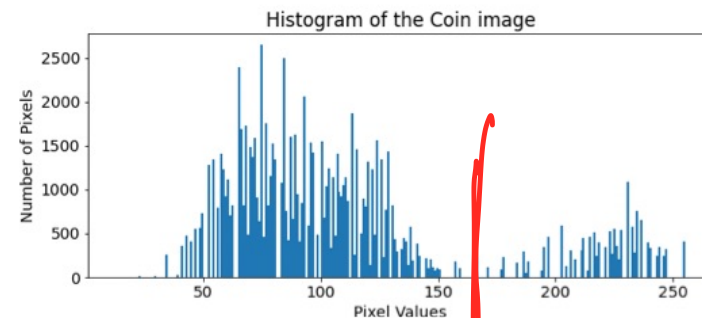
0 → darkest pixels

threshold

RGB image

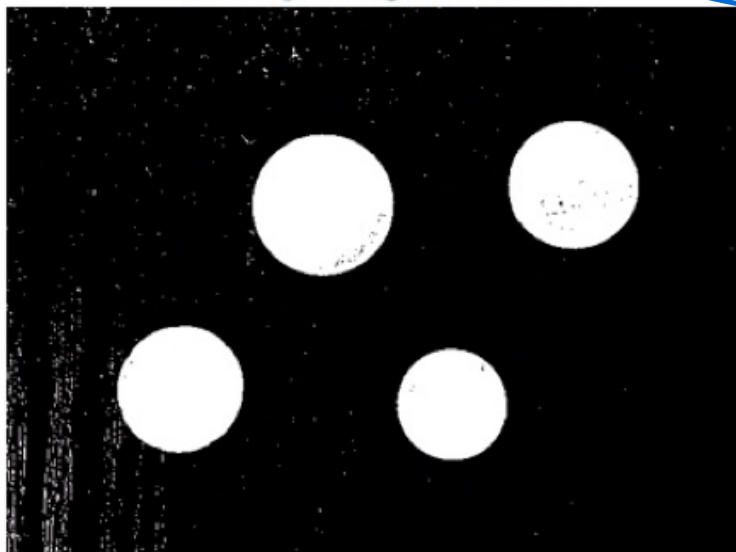


→ grayscale
(0 - 255)



Thresholding.

Binary image, T=155



thresholding

0

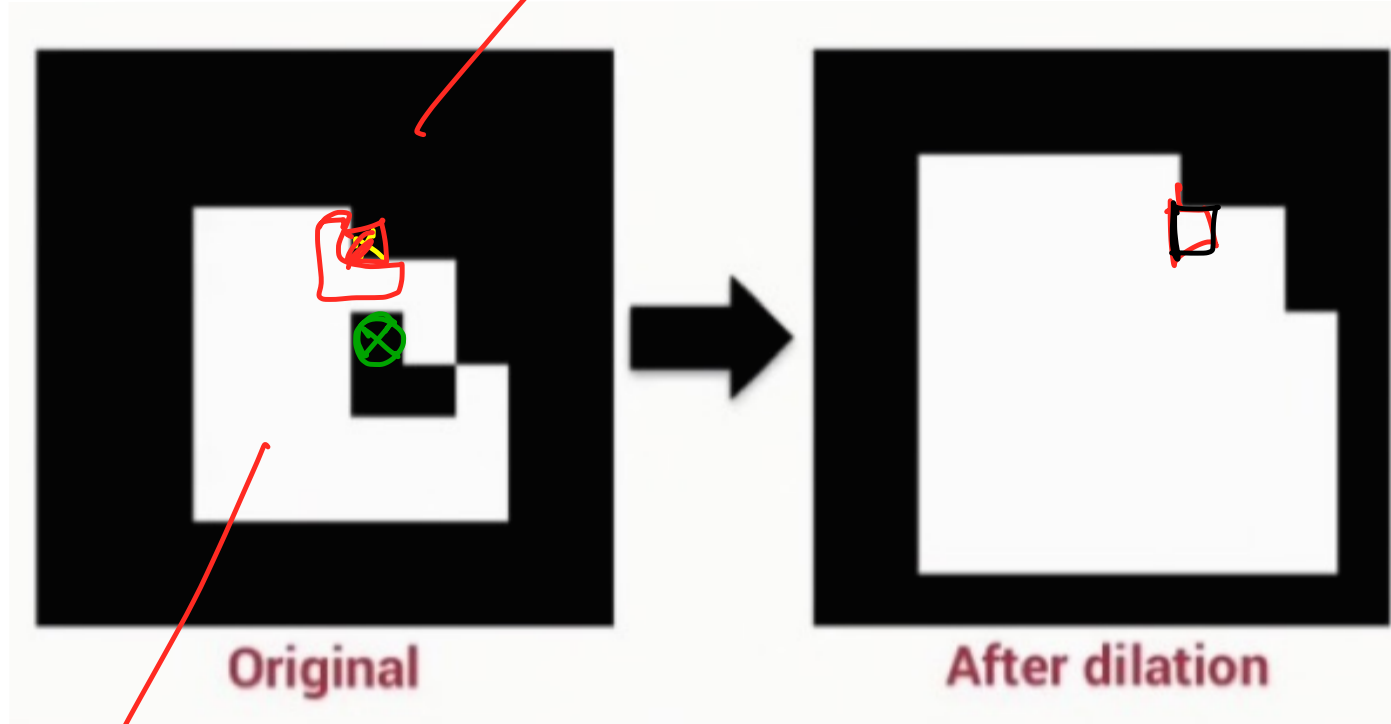
255

↓
Black

↓
White.

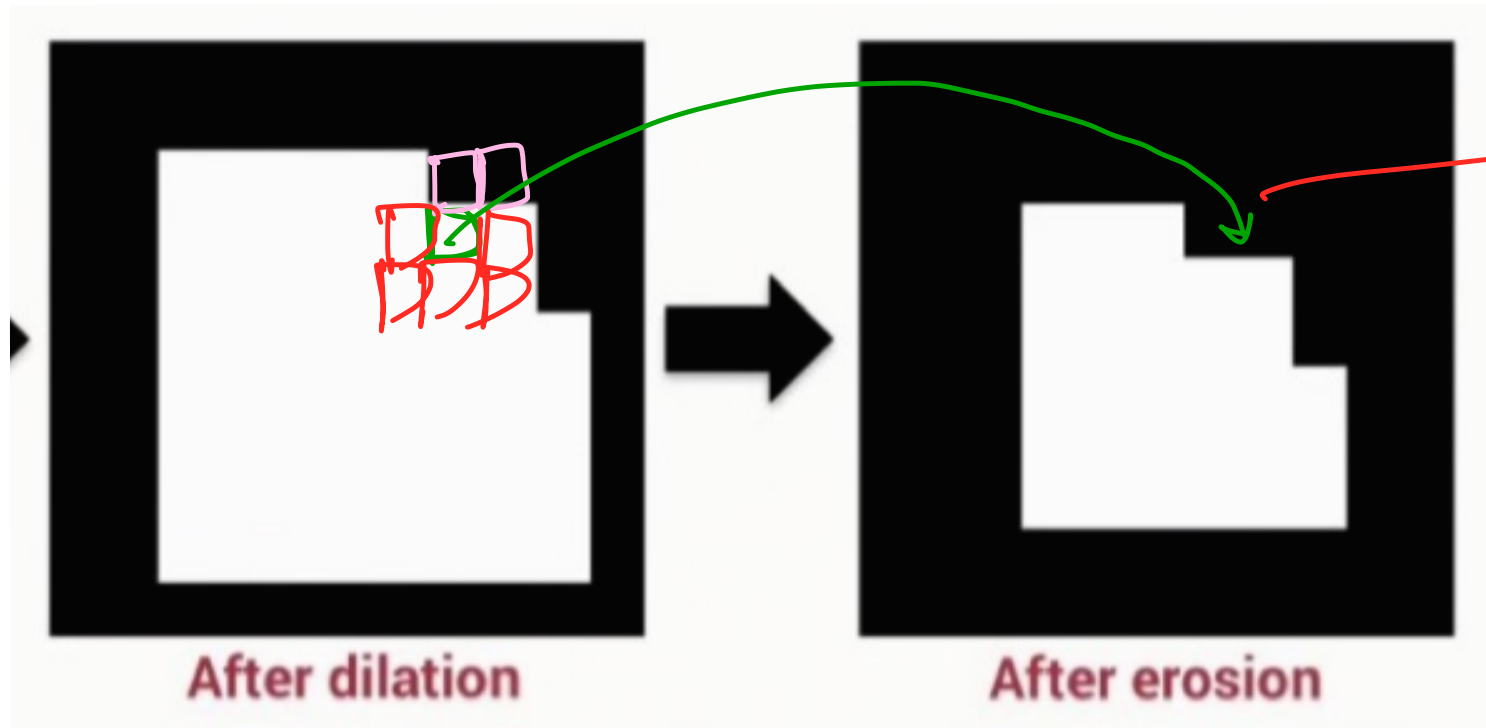
Dilation

mask \rightarrow white + Black
— —



max. of dominant pixel is
populated

Erosion



non
dominant
pixel is
populated
over
here.

Image . (quick Summary)

① • BGR \rightarrow RGB

\downarrow
HSV.

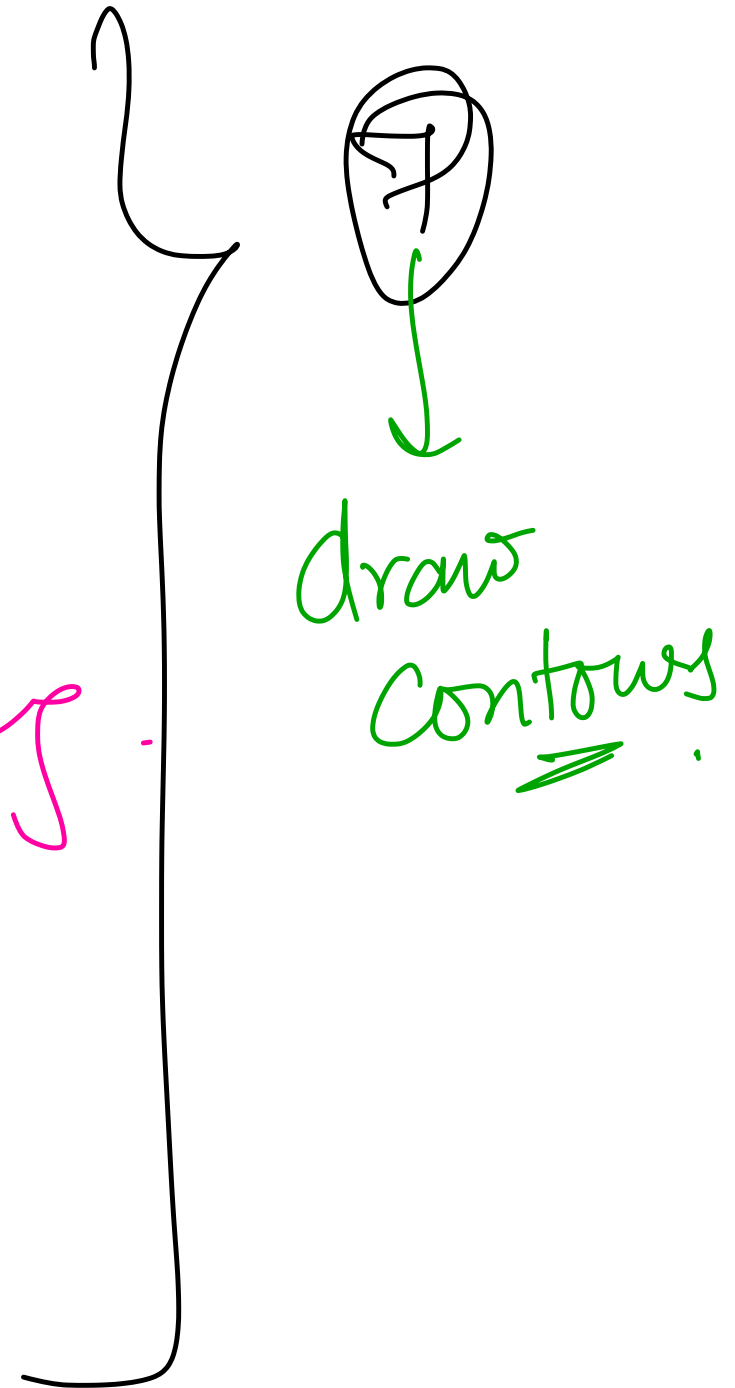
② Saturation Component (S)

③ Blurring / denoise / Smoothing .

④ Thresholding .

⑤ Dilation

⑥ Erosion



2 Cars

