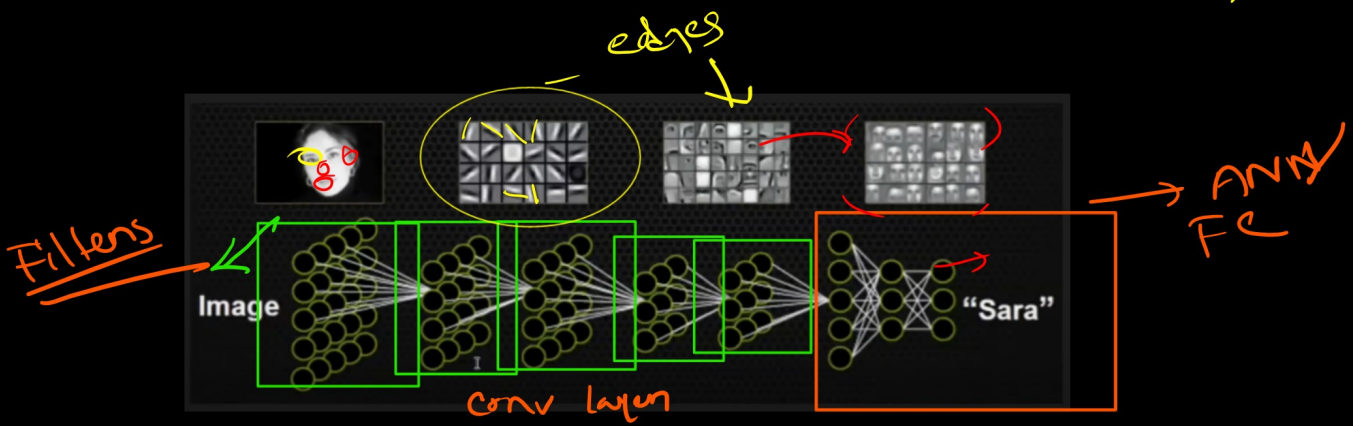
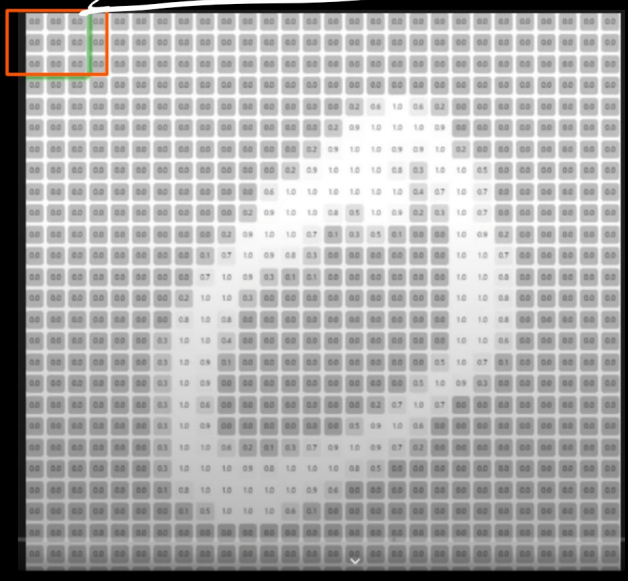
Convolution Operation in CNN



CNN Architecture

CNN → ① Convolution Layer
② pooling Layer
③ FC Layer

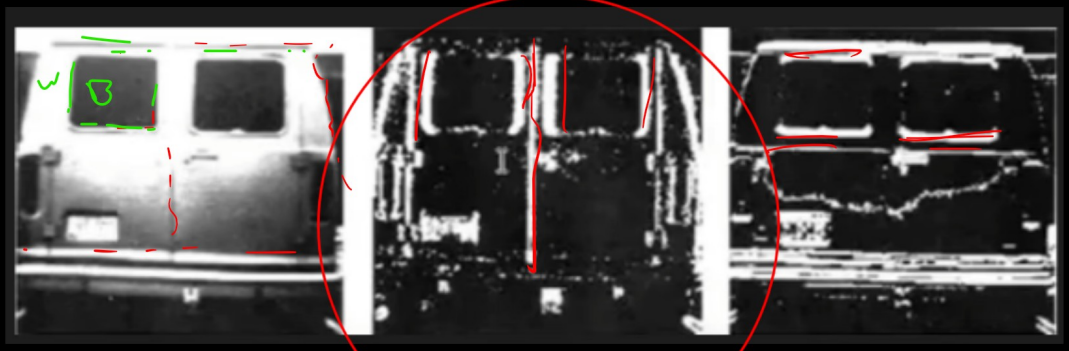


24 24 3 (24x24x3)

24

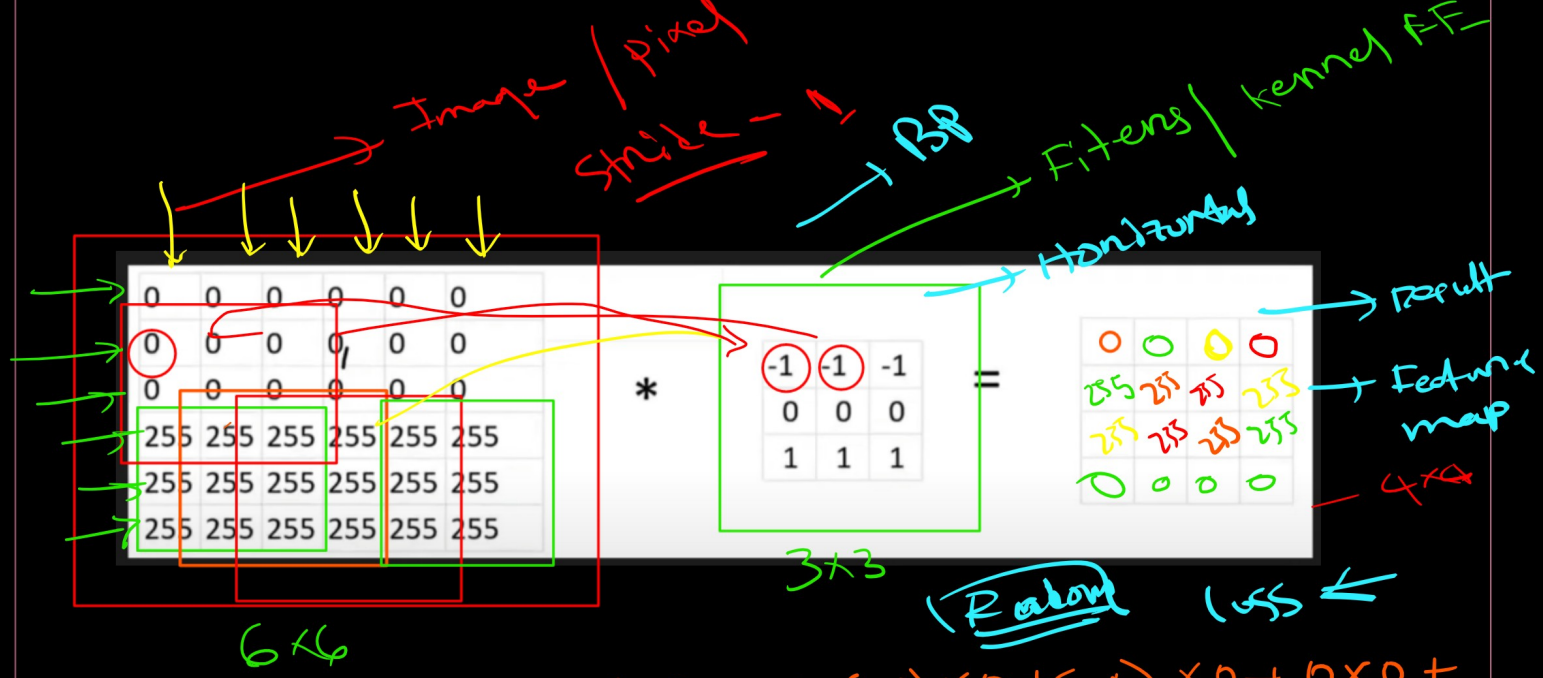
Filters / kernel / feature extraction

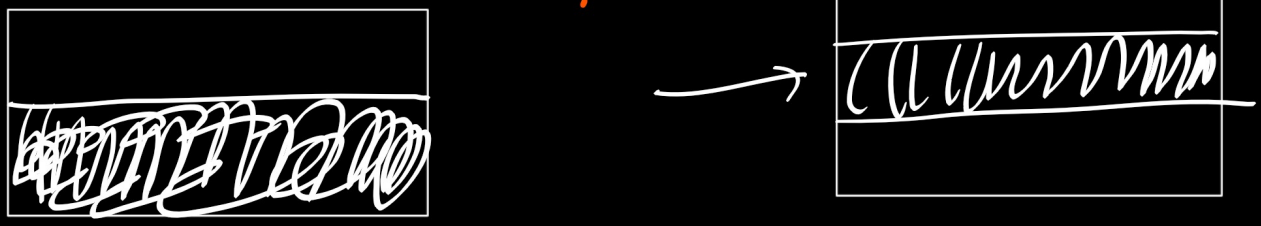
Sobel filters



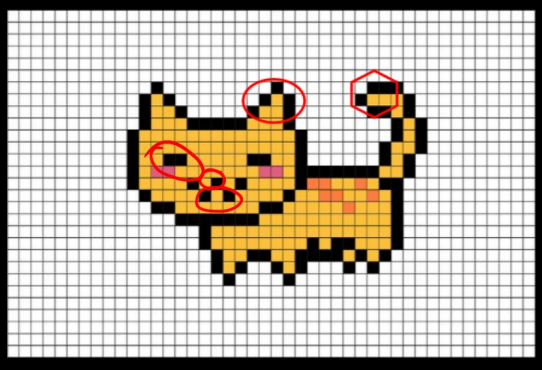
① Horizontal edge Detection

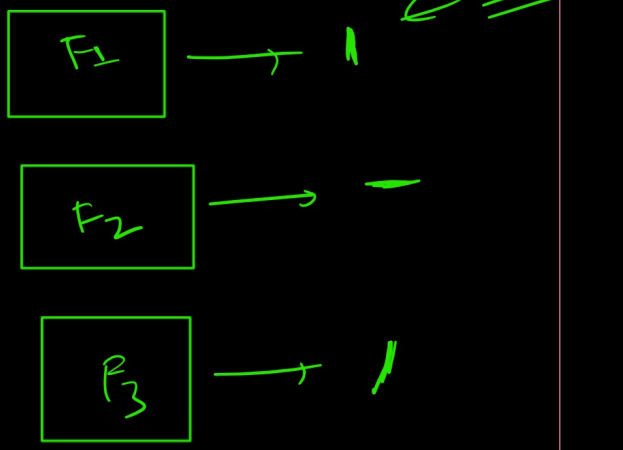
② Vertical edge Detection





Convolution operation



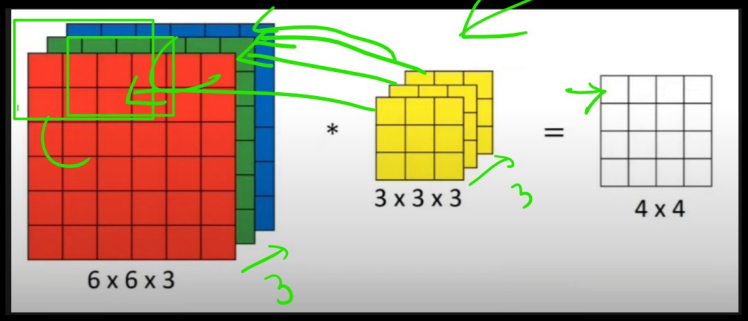


$(28 \times 28) \leftarrow (3 \times 3) = ?$

$(n \times m)$ $(n \times m)$

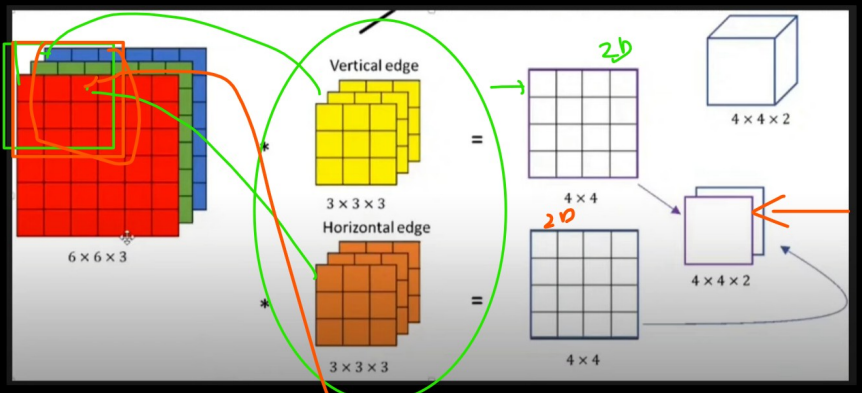
Formula: $(n - m + 1) \times (n - m + 1)$

$(64 \times 64) \leftarrow (3 \times 3) \rightarrow (62 \times 62)$



→2D

10 =



① padding

② Stride

③ Pooling layers

④ CNN Architecture