



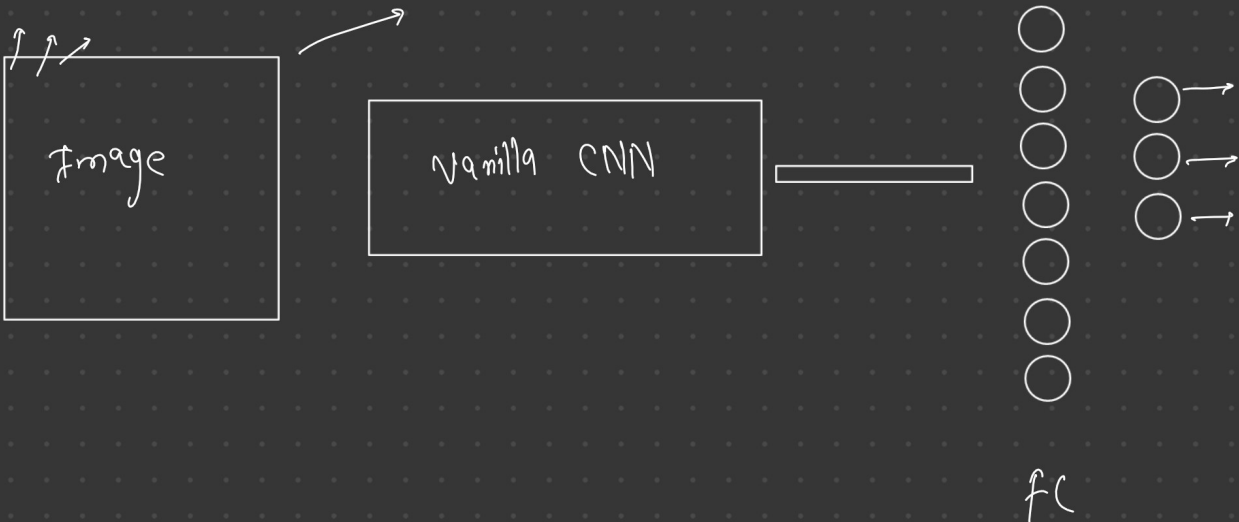
KRISHAI TECHNOLOGIES

Fully Convolutional Networks (FCNs)



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Problem Statement

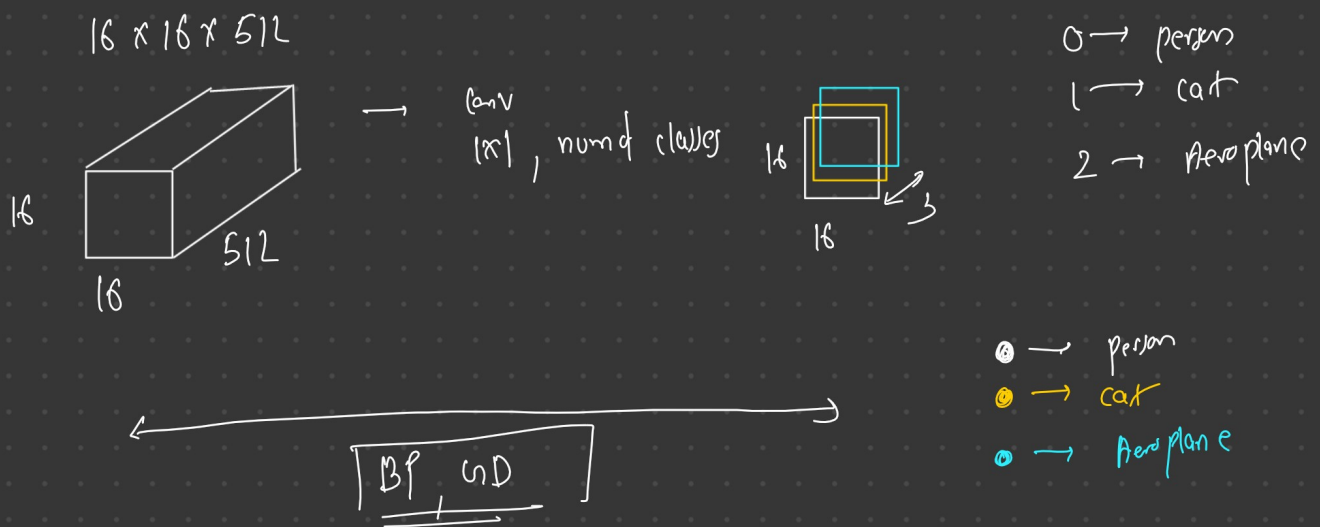
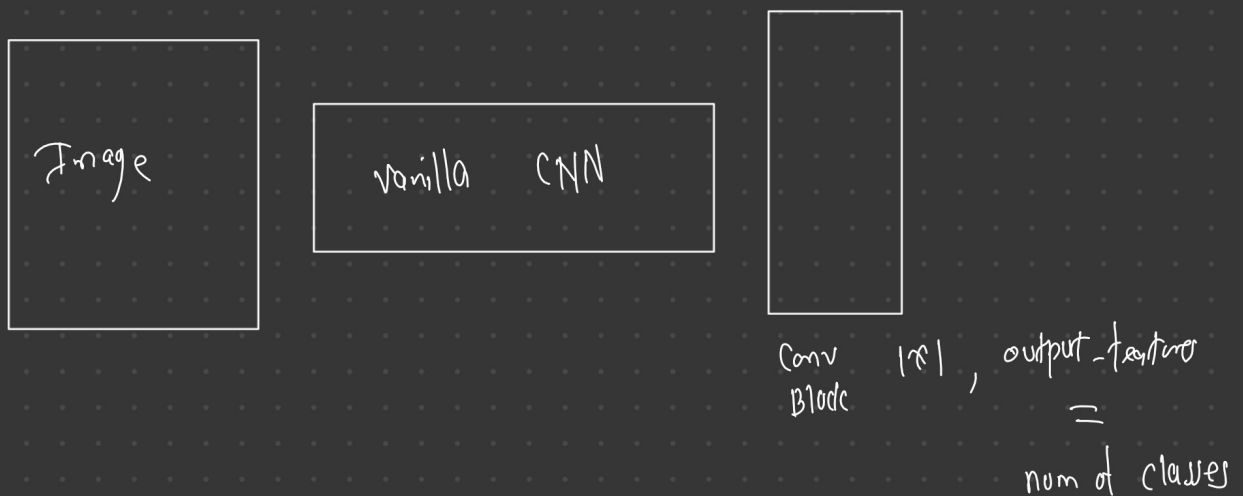


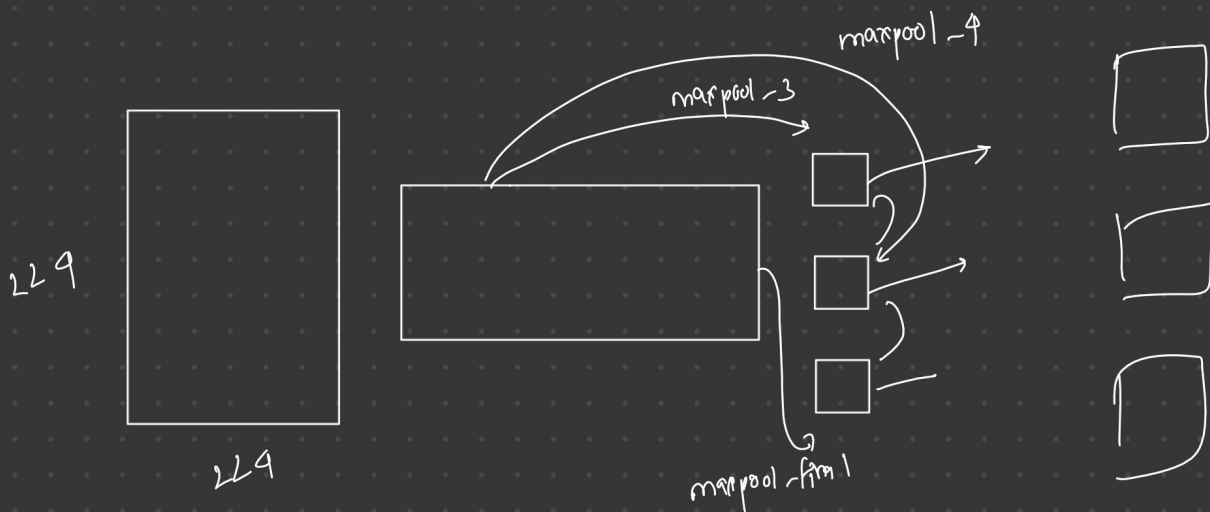
FCN (Fully convolution Network)

FCN is a deep learning architecture where **fully connected layers** are replaced with **convolution layers**.

→ Maintain spatial information/resolution

→ (pixel wise segmentation)





$$O = (I - 1) \times S + K - 2P$$

I = "input size"

S = "Stride"

K = "Kernel Size"

P = "Padding"

$$O = (I - 1) \times S + K - 2P$$

input_size = 224, 224

max_pool5 = 7, 7

max_pool4 = 14, 14

max_pool3 = 28, 28

padding = 1, K = 4, S = 2, I =

Upsampling 32 → I

$$\begin{aligned}
 O &= (I - 1) \times 2 + 4 - 2(1) \\
 &= (I - 1) \times 2 + 2 \\
 &= \boxed{(I - 1) \times 2} + 2 \quad \text{Input size}
 \end{aligned}$$

Upsampling 16 →

2x input size ✓

upsampling 8 =

$$I = I$$

$$S = 8$$

$$K = 16$$

$$P = 4$$

$$O = (I - 1) \times 8 + 8$$

8x input size

↓

