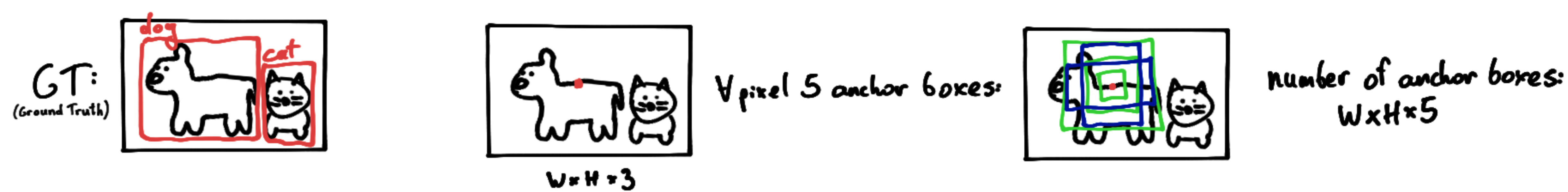
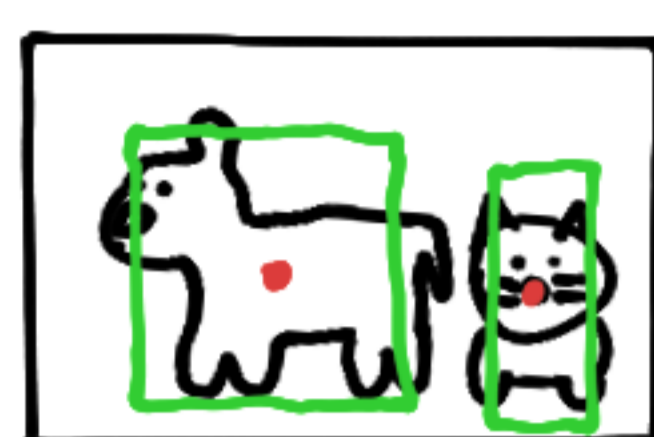


# Localization with Anchor Boxes

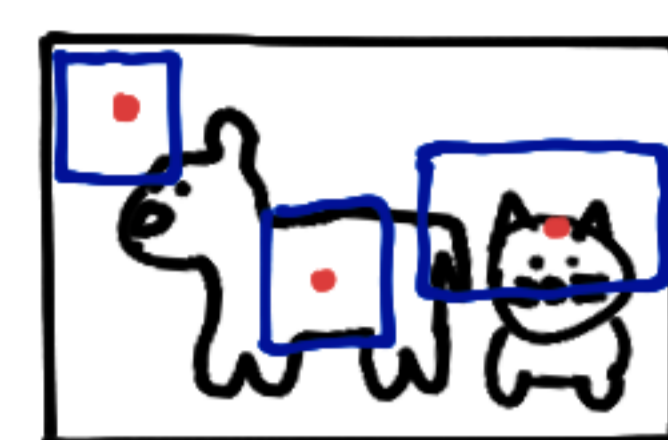
Before training (preprocessing)



If GT box find anchor box with best IOU:



Label these anchor boxes with the correct class and offset

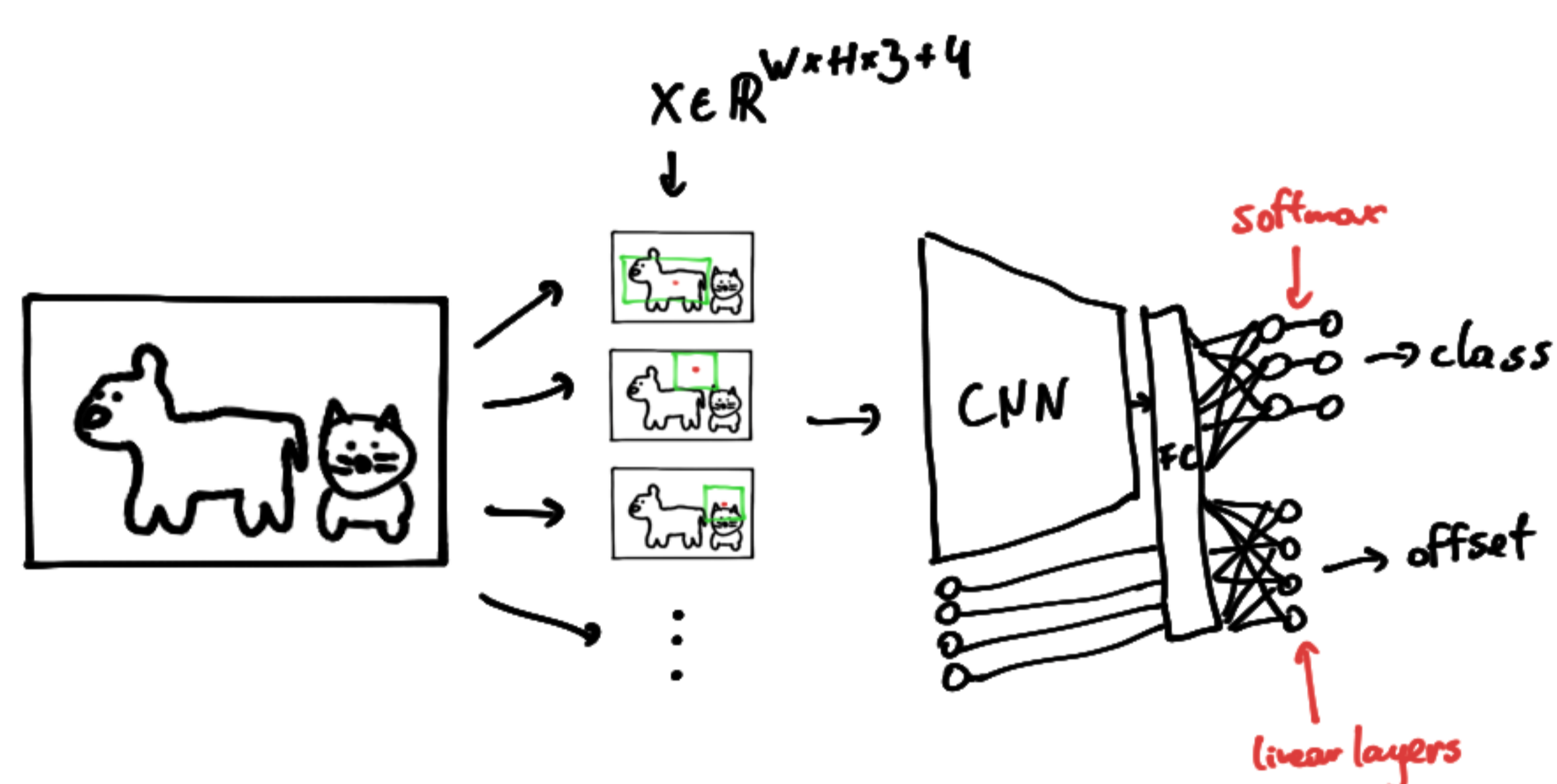


Label other anchor boxes to belong to the background class

$$Y = \begin{bmatrix} 0 & 0 & 1 & 10 & -15 & -30 & 20 \\ 0 & 1 & 0 & -10 & -20 & 20 & 40 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

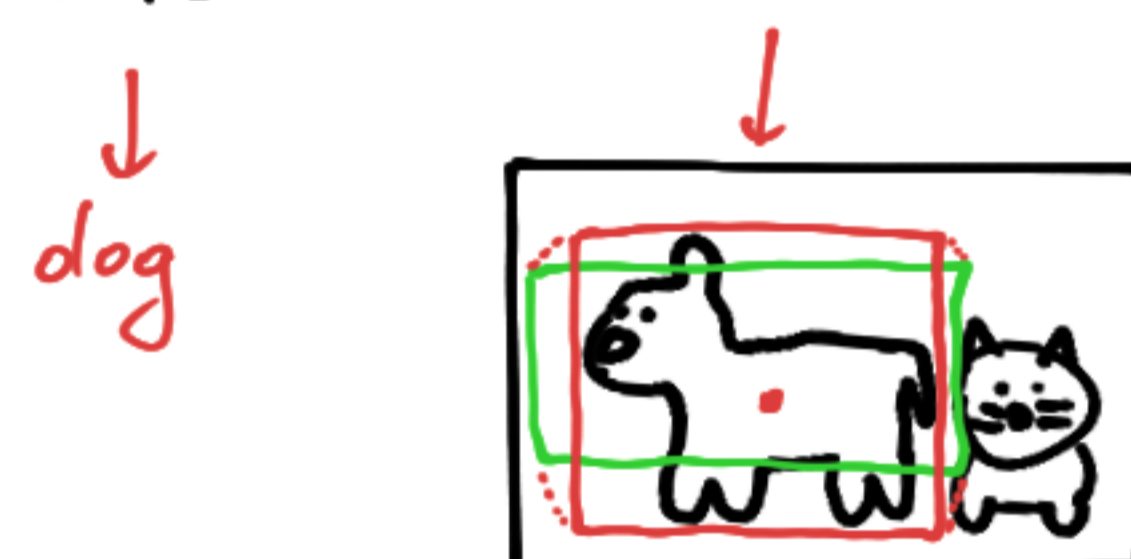
[ BG DOG CAT ]
[ x y w h ]  
 CLASS                      OFFSET

Training

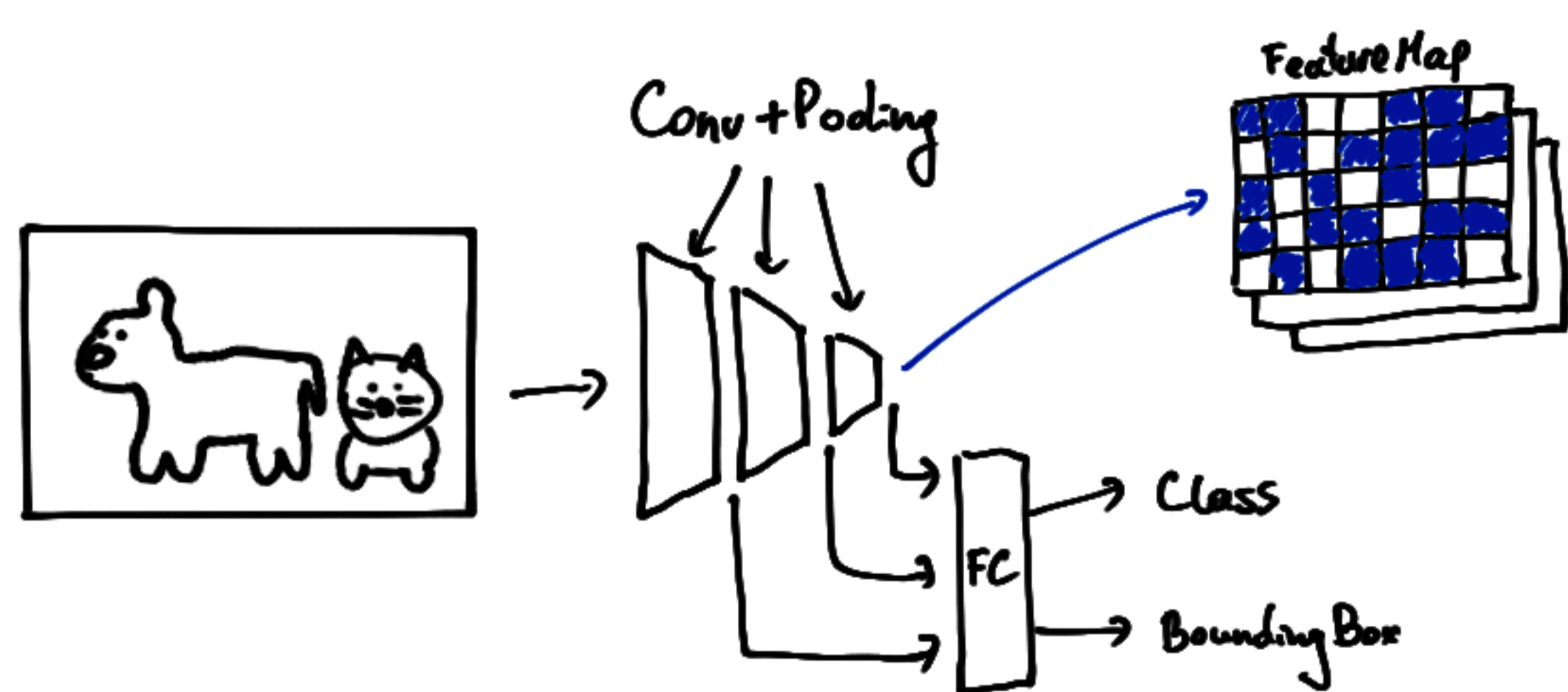


$$X_i = [ \text{img}, 51, 16, 150, 100 ]$$

$$\hat{Y}_i = [ 0.11 \quad 0.76 \quad 0.13 \quad -20 \quad 5 \quad 40 \quad -10 ]$$



# Single Shot Localization



# Autoencoders

