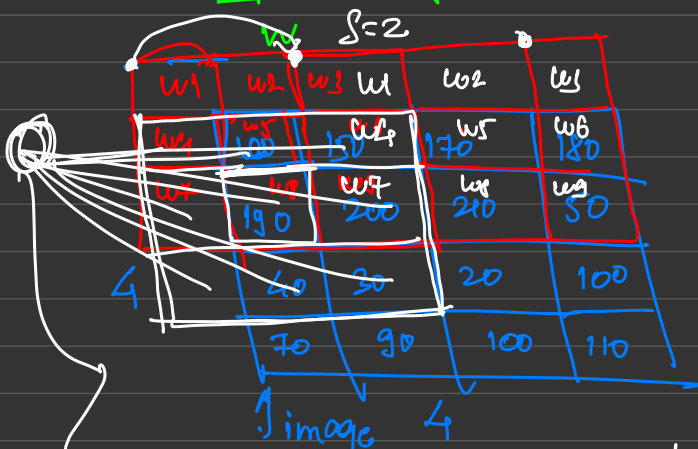
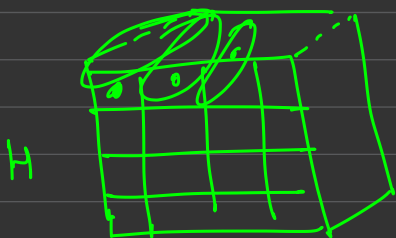
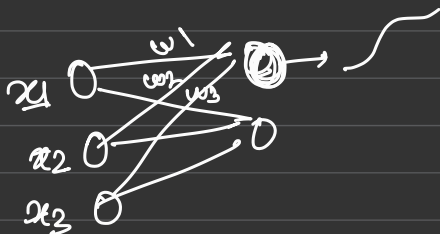


# Convolutional neural network

## Image classification



neuron is thereby trying to extract features from the pixel  
 activation  $(w_5 \times 100 + w_6 \times 150 + w_7 \times 190 + w_8 \times 200)$   
 → Feature map

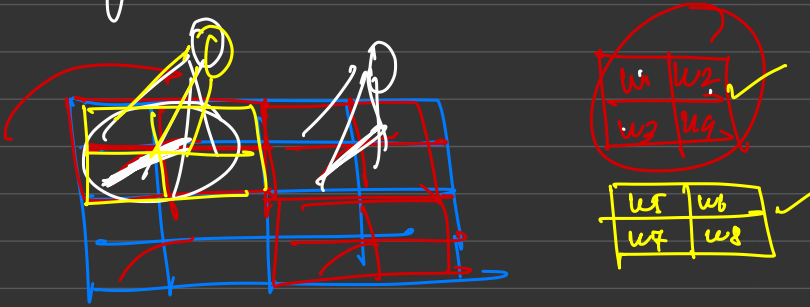


extracting features from an image

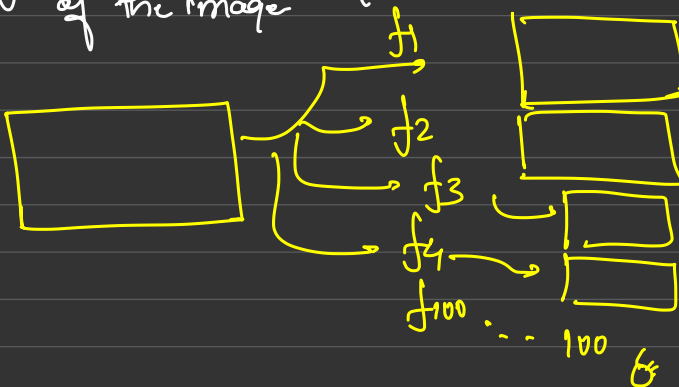


one iteration of the convolution,

your filter weights don't change

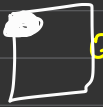
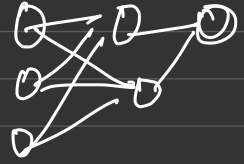


one filter is learning one kind of feature from the different regions of the image



Conv2D

2x2



, neuron is going to learn a non-linear combination of all the features that were generated of the object placed on the top left corner of your original image

if f  
one filter applied on an image  
learns one kind of feature at  
diff locations  
many filters, you will have  
many features

