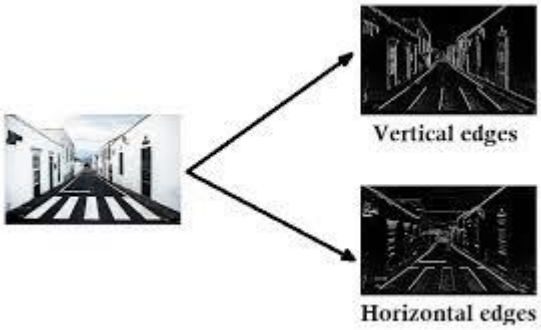
Convolutional Neural network:

Week 1

First, he tokes about challenges of computer vision problems is that the inputs can get really big

If the input is 64*64 *3(the three-color channels) the input is 12288 but if the image is 1000*1000*3 the input will be three million

Then he tokes about using convolution in vertical and horizontal edge detection with filter matrices



1	0	-1
1	0	-1
1	0	-1

Vertical

1	1	1
0	0	0
-1	-1	-1

Horizontal

Then he make padding to the image and make stride convolution by change the step of the convolution and evaluate the output matrix

Summary of convolutions

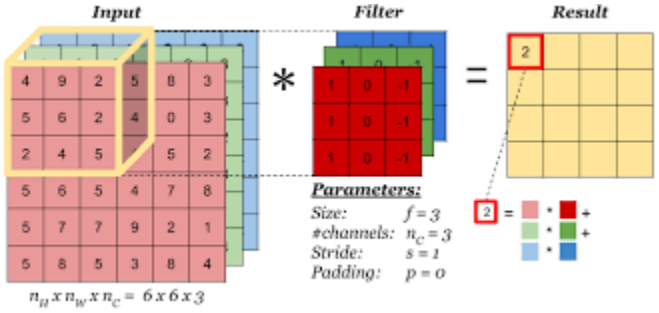
$n \times n$ image $\quad f \times f$ filter

padding p $\quad$ stride s

Output Size:

$$\left\lfloor \frac{n+2p-f}{s} + 1 \right\rfloor \times \left\lfloor \frac{n+2p-f}{s} + 1 \right\rfloor$$

And make convolution over volume



Then he make one layer of a convolution neural network and make pooling and max pooling