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a)

Layer	Active volumn	Parameters
input	32 X 32 X 3	0
conv5-10	32 X 32 X 10	760
pool2	16 X 16 X 10	0
conv 5:10	16 X 16 X 10	2510
pool 2	8 X 8 X 10	0

for, 1st conv5-10

$$H_{out} = \frac{H_{in} - F + 2P}{S} + 1$$

$$= \frac{32 - 5 + (2 \times 2)}{1} + 1$$

$$= 32$$

$$W_{out} = \frac{W_{in} - F + 2P}{S} + 1$$

$$= \frac{32 - 5 + (2 \times 2)}{1} + 1$$

$$= 32$$

Parameters $= 10 \times (5 \times 5 \times 3 + 1)$

$= 760$

for pool 2,

$Hin = 32/2 = 16$ | $Win = 32/2 = 16$

for, 2nd conv 5-10,

$Hin = \frac{16 - 5 + (2 \times 2)}{1} + 1 = 16$ | $Win = \frac{16 - 5 + (2 \times 2)}{1} + 1 = 16$

Parameters $= 10 \times (5 \times 5 \times 10 + 1)$

$= 2510$

for pool 2,

$Hin = 16/2 = 8$ | $Win = 16/2 = 8$

(b) The receptive-field of CNN means the size of region in the input that affects particular feature in output feature map.

receptive-field changes with each subsequent layer due to cumulative, convulation and pooling operation. Such —

~~Numier~~ Number of conv layer, stride, ~~pooling layer~~, filter size, max pooling can increase or decrease the receptive field number.