id: 23341130

Kernel : $m \times n$

padding : p

Stride : s

Input : $M \times N$

output : $H \times W$

$$H = \text{floor}\left(\frac{M + 2p - m}{s} + 1\right)$$

$$W = \text{floor}\left(\frac{N + 2p - n}{s} + 1\right)$$

Conv 1:

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

$s = 1$

$p = 2$

$m = n = 5$

$M = N = 32$

$= 32$

$W = 32$

$\therefore$ ~~$(6 \times 6 \times 3)$~~ $(32 \times 32 \times 10)$

$\therefore$ parameters = $5 \times 5 \times 10 = 250$

Pool 1:

$$H = \frac{32 + 0 - 2}{2} + 1$$

$$= 16$$

$W = 16$

$\therefore (16 \times 16 \times 10)$

$S = 2$

$P = 0$

$m = n = 2$

$M = N = 32$

$\therefore$ parameter $= 0$

Conv 2:

$$H = \frac{16 + 2 \times 2 - 5}{1} + 1$$

$$= 16$$

$W = 16$

$\therefore (16 \times 16 \times 10)$

$S = 1$

$P = 2$

$m = n = 5$

$M = N = 16$

$\therefore$ parameters $= 5 \times 5 \times 10$

$= 25$

Pool 2 :

$S = 2$

$P = 0$

$m = n = 2$

$H = N = 16$

$$\therefore H = \frac{16 + 0 - 2}{2} + 1$$

$$\therefore w = 8$$

$$\therefore (8 \times 8 \times 10)$$

$\therefore$ Parameter $= 0$

(b)

~~The field of~~

It is a area from which the neuron gathers information to make prediction.

The receptive field changes as we go deeper into the network due to the stacking of Conv & Pooling layers. Each layer processes into from a local receptive field in the previous layer. It gradually captures more Higher level features as we progress in the network.