Strides

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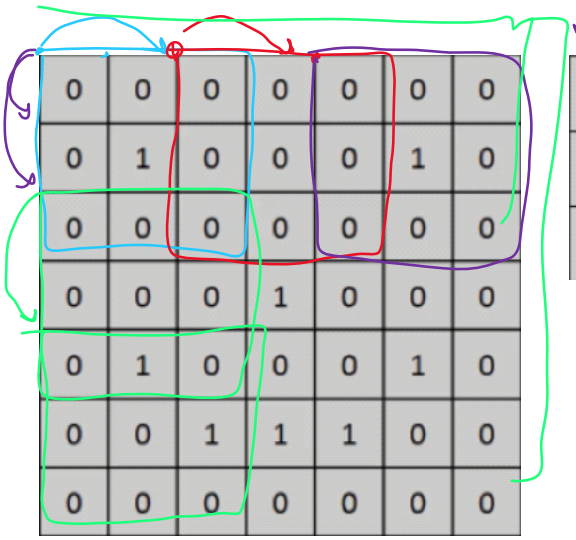
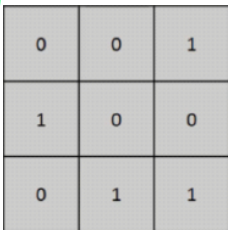


7x7



3x3

Stride = 1

(1,1)

3x3

right

bottom

→ result feature

Stride = (2,2)

Stride = 2 →

$\frac{7-3}{2} + 1$

$2+1 = 3$

$(n-f+1) \longrightarrow \left[\frac{n-f}{s} + 1\right]$ ↘ $p = p$

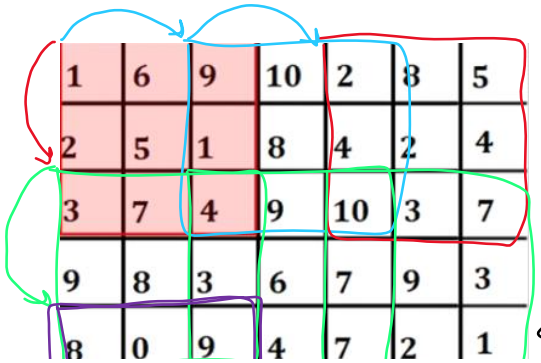
$\left[\frac{n+2p-f}{2} + 1\right]$ → strided convolution

$\frac{7+2-3}{2} + 1 = [4 \times 4]$

$\frac{n-f}{2}$ $\frac{6-3}{2}$ $1.5 = 1 + 1 = 2$

Special case

Stride = 2



2x3

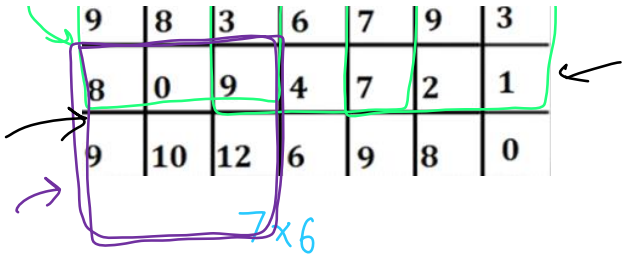
$\frac{6 \times 7}{3 \times 3}$

$\left[\frac{n-f}{s} + 1\right]$

19 → 1

1.1 → 1

floor



$$\left[\frac{\cdot}{s}+1\right]$$

floor

$$\left[2 \quad \frac{6-3}{2}+1 = 1.5+1\right]$$

$1+1=2$

$$\frac{7-3}{2}+1 = 2+1=3$$

Why Strides are required?

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1) High level features

2) Computing →

Keras → stride

$$\left[\frac{n+2p-f}{s}+1\right]$$

$$\frac{28+2-3}{2}+1$$

$$\frac{13.5}{}+1$$

$$13+1=14$$