

$$y = \alpha_1 x + b + \varepsilon$$

$$x = 9 \quad y = 0$$

$\mathcal{N}(\quad)$

0.1	0.2	0.3	2	1.5	2.3
1	2	3	0		
0.9	0.8	0.7			

Formel de 2×2

0.1	0.2	0.3	0	1.5	?
0.5	0.6	0.7	0	0.8	?
0.9	1	1.1	0	?	?
1.3	1.4	1.5	0	=) identitate	

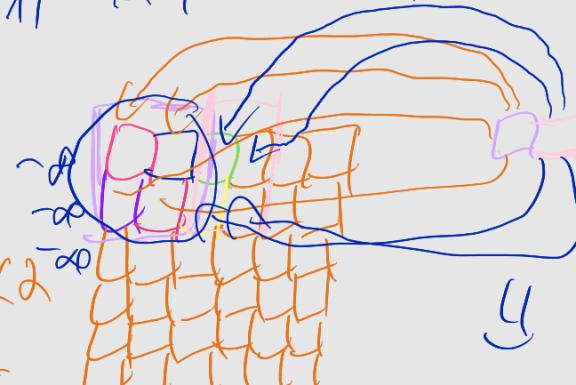
Formel de 2×2

Formel 2×3

$$\begin{pmatrix} -1 & -1 & -1 \\ -1 & 0 & -1 \\ -1 & 1 & -1 \end{pmatrix} \Rightarrow -1 \cdot a + (-1) \cdot a + (-1) \cdot a + (-1) \cdot a + 8 \cdot a + (-1) \cdot a + (-1) \cdot a + (-1) \cdot a = 0$$

1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4

Formel 2×2



1 NC

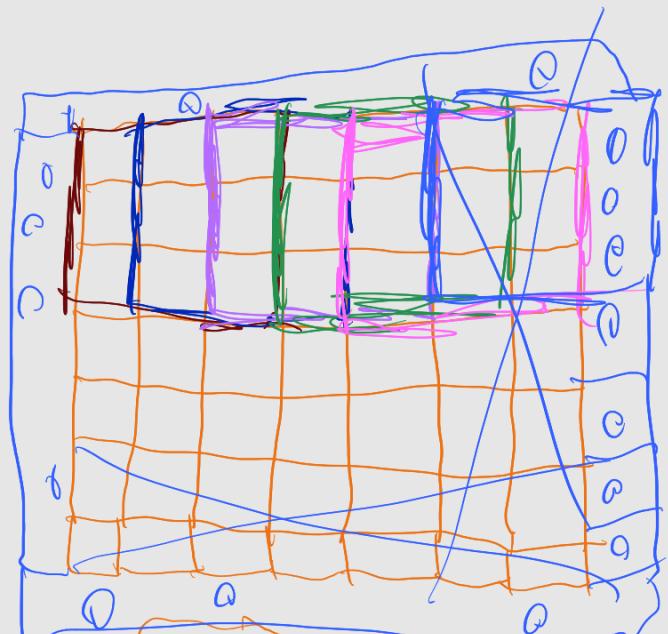


convoluzi^{on}
max pool
2x2 kernel
stride 2x2

convoluzi^{on}
per anticⁱ
valori



Conv.
in kernel 3x3



$$y = (a_1 \cdot x) + b \Rightarrow (x, 1) \Rightarrow \text{input}$$

$$(a, b) \Rightarrow \text{parameters}$$

$$x = 0 \Rightarrow y = 0$$

$$\bullet \Rightarrow x \cdot a + 1 \cdot b$$

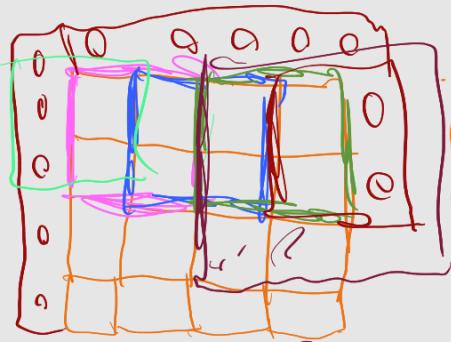
$$-1 - 1 - \dots - 1 + 8$$

$$= 0$$

convoluzi^{on} $\Rightarrow -1 + 0 + -1 +$
in $-1 - 1 - 1 - 1$

$$\begin{bmatrix} -1 & -1 & -1 \\ -1 & 8 & -1 \\ -1 & -1 & -1 \end{bmatrix} + 0 = -6$$

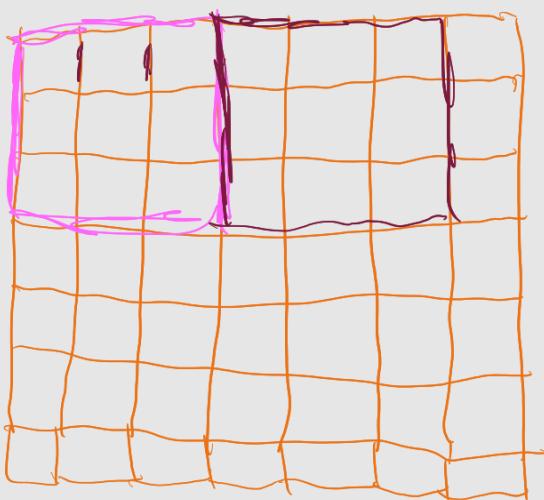
1	1	1	0	1	1	1
1	1	0	0	1	1	1
1	0	1	0	1	1	1
1	1	1	0	1	1	1
1	1	1	0	1	1	1
1	1	0	0	1	1	1
1	1	0	0	1	1	1



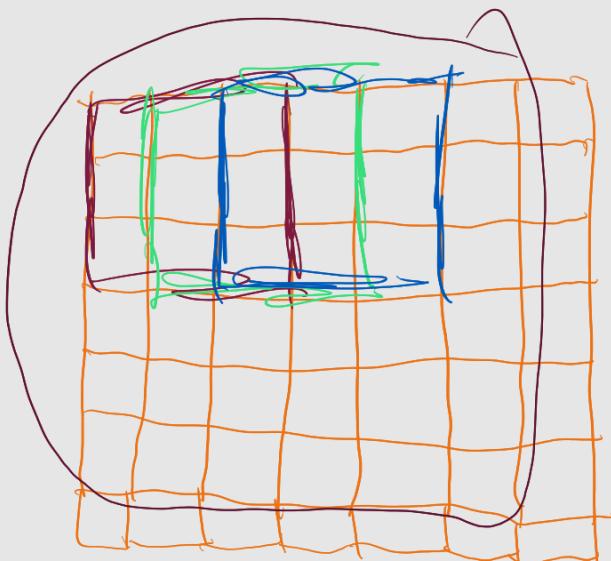
Kernel de 2×2



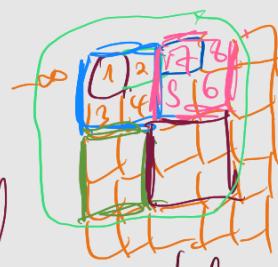
2×2
padding nulo, stride = 3×3



Kernel de 3×3
stride de 3

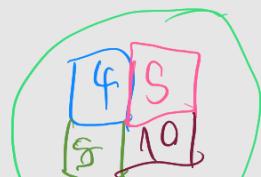


Kernel
de 3×3



(1)

max
pooling
kernel de 2×2
stride de 2



convenție de 2×2 pe care depinde de 4 valori
⇒ care depinde de 16 valori de
dimensiune ⇒ depinde de mulți
pixeli din imagine

$$f(x) = \frac{1}{1 + e^{-x}}$$

arătă formă a_1x^6

$$a_1, a_2, \dots, a_{84}$$

• prima ușoare $p_1 \cdot a_1 + p_2 \cdot a_2 + \dots + p_{84} \cdot a_{84} + b$

$$x_1, x_2, x_3$$

$$o = \text{sigmoid}(x_1) + \text{sigmoid}(x_2) + \text{sigmoid}(x_3)$$

$$\frac{d o}{dx_1} = \frac{d}{dx_1} (\text{sigmoid}(x_1))$$

astăpică, deci este ok
că am făcut acesta.

