

Compuertas OR-AND usando perceptron

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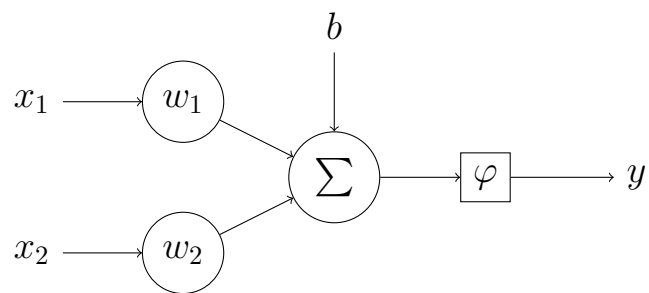
Compuerta OR:

x_1	x_2	y
0	0	0
0	1	1
1	0	1
1	1	1

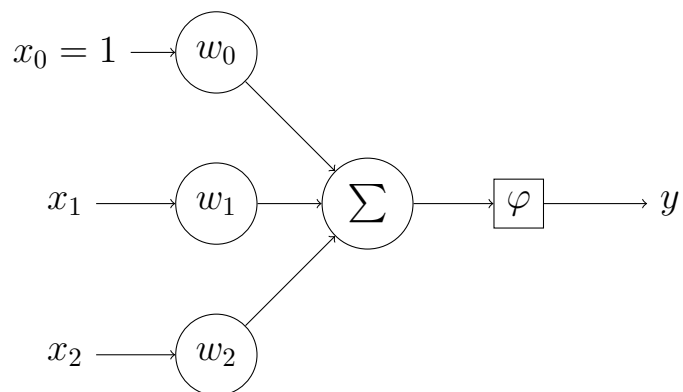
Compuerta AND:

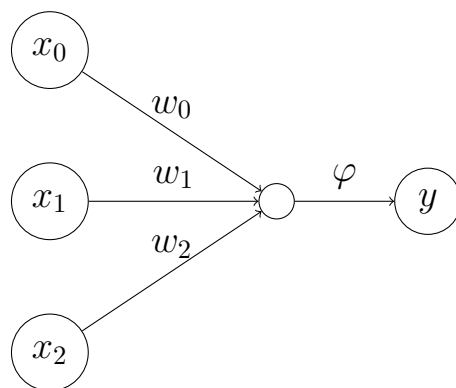
x_1	x_2	y
0	0	0
0	1	0
1	0	0
1	1	1

Perceptron



$$b = w_0 x_0 \quad : \quad x_0 = 1$$





Comportamiento del perceptron

$$\vec{x} = (1, x_1, x_2) \quad , \quad \vec{w} = (w_0, w_1, w_2)$$

$$\varphi(s) = \begin{cases} 1 & : s \geq 0 \\ 0 & : s < 0 \end{cases}$$

$$y = \varphi(\vec{x} \cdot \vec{w})$$

Aprendizaje

Vector de pesos en la iteración i

$$\vec{w}_i = (w_{i,0}, w_{i,1}, w_{i,2})$$

Función de error

$$e = y - y_i$$

Factor de aprendizaje

$$\alpha \in (0, 1)$$

Algoritmo de aprendizaje

$$w_{i+1,j} = w_{i,j} + \alpha e x_j$$