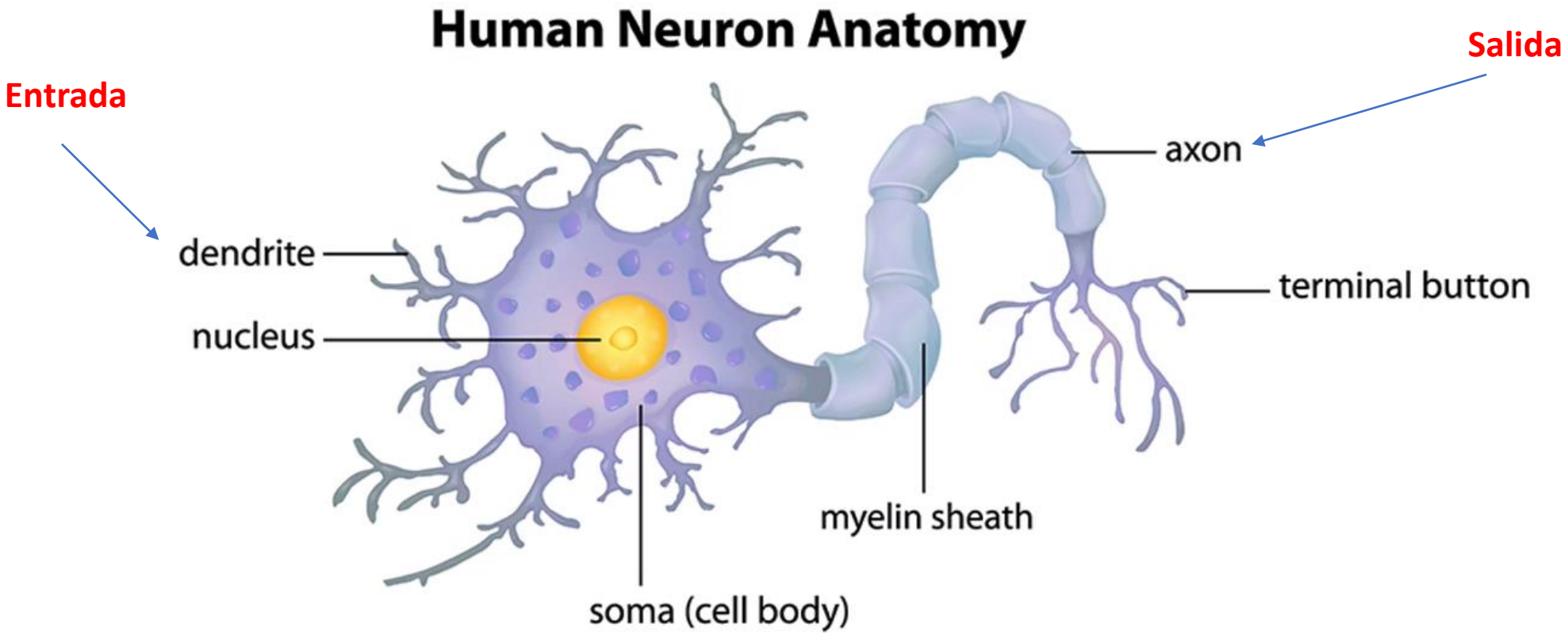
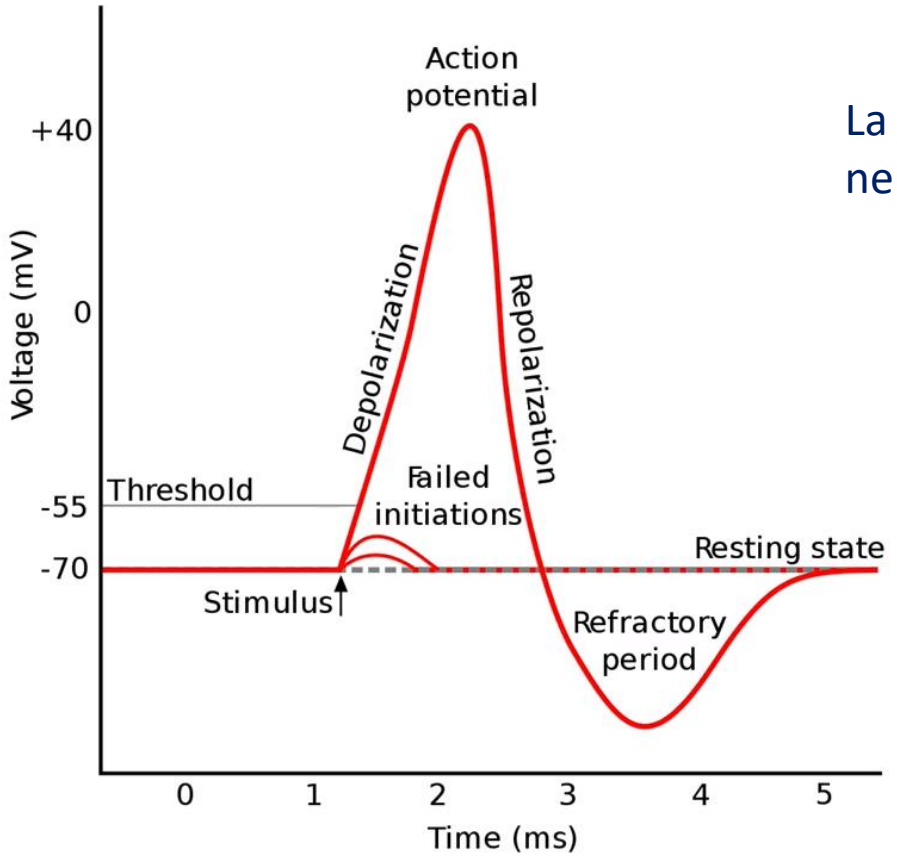
Introducción a las Redes Neuronales Artificiales

Relación con la Biología



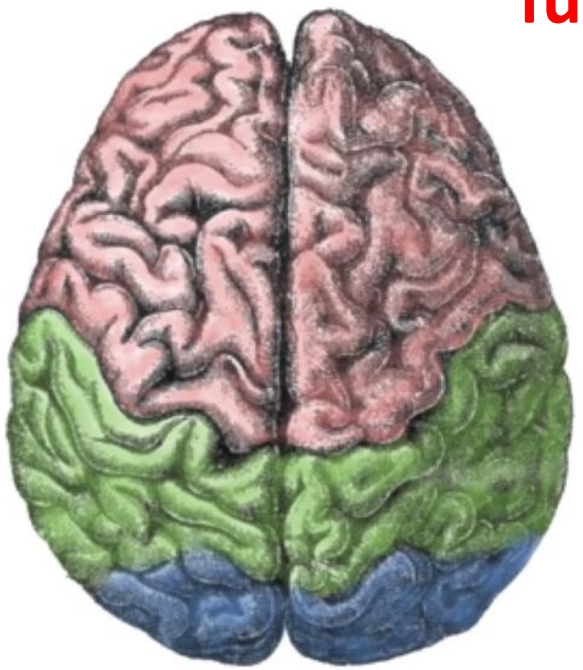
Activación de Neurona



La activación es binaria: La neurona se activa o no se activa

RNA están inspiradas en el cerebro humano

Pero no imitan la forma en la que funciona el cerebro



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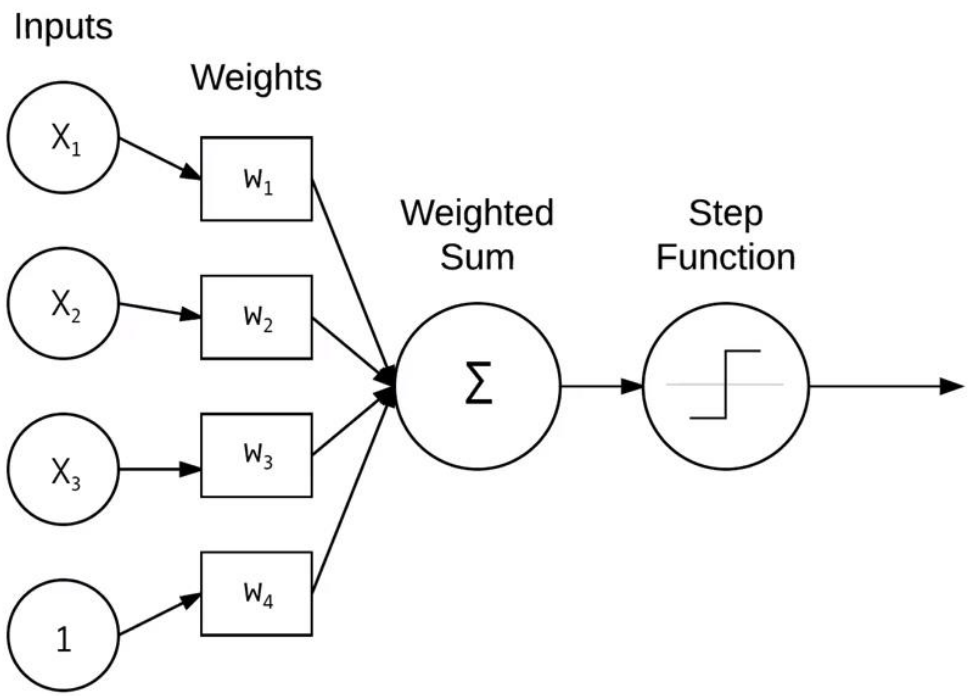
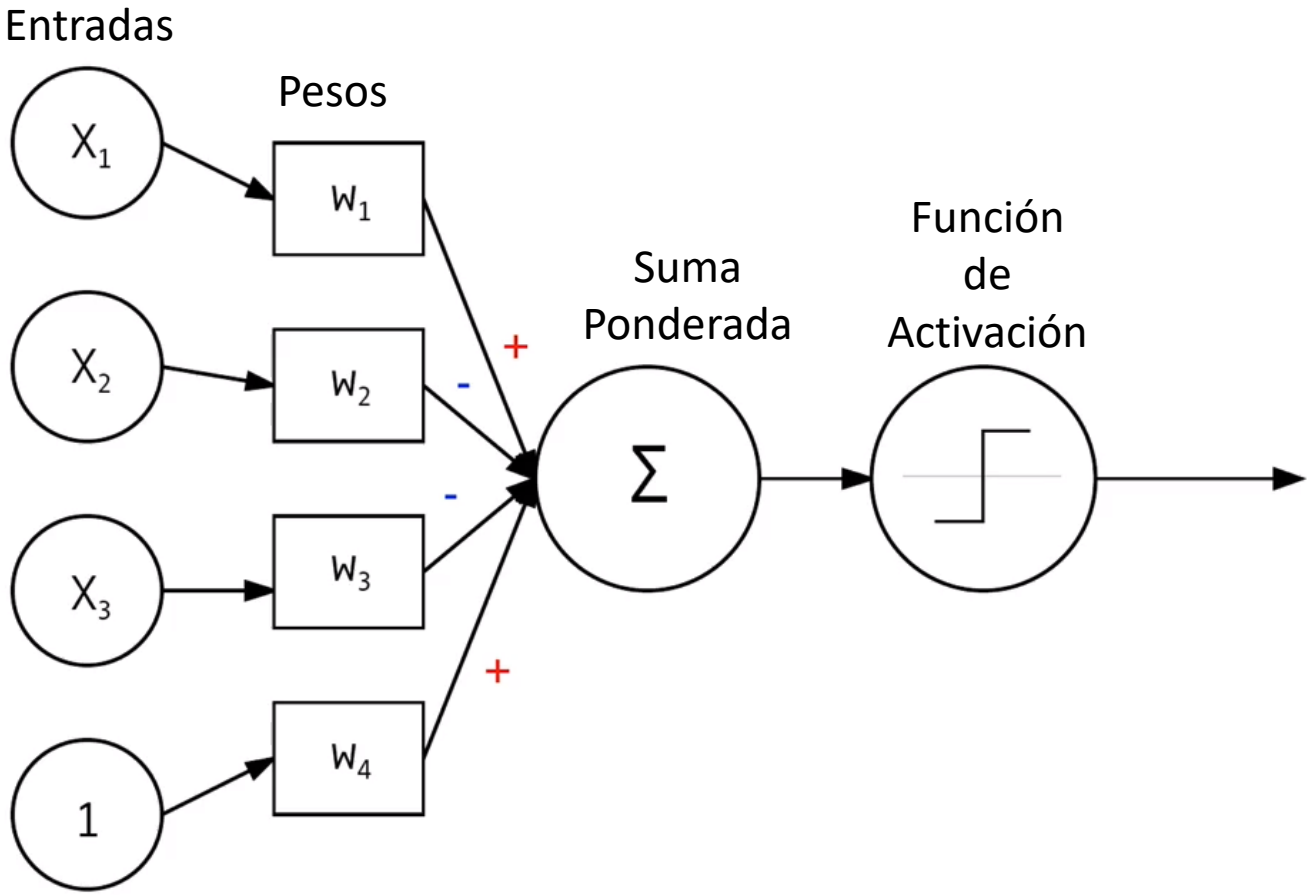
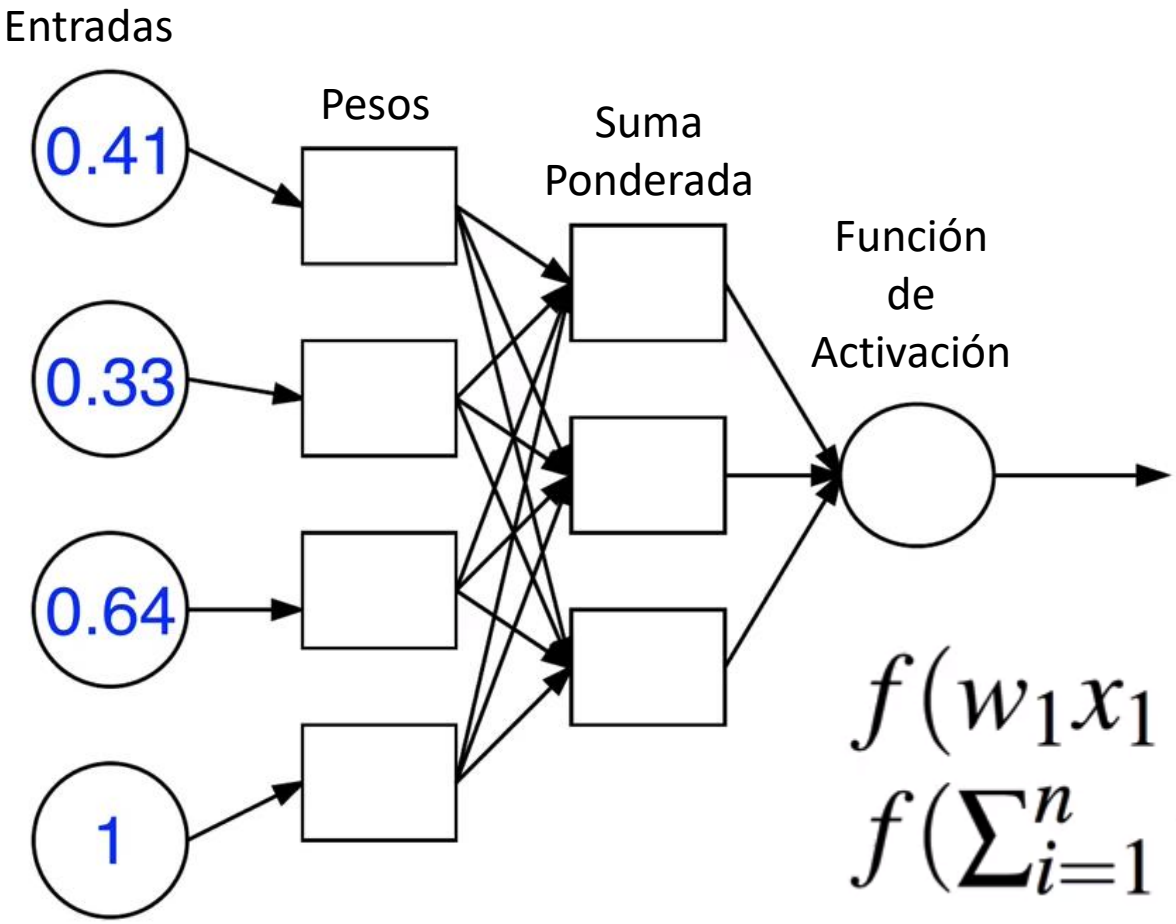


Redes Neuronales Artificiales



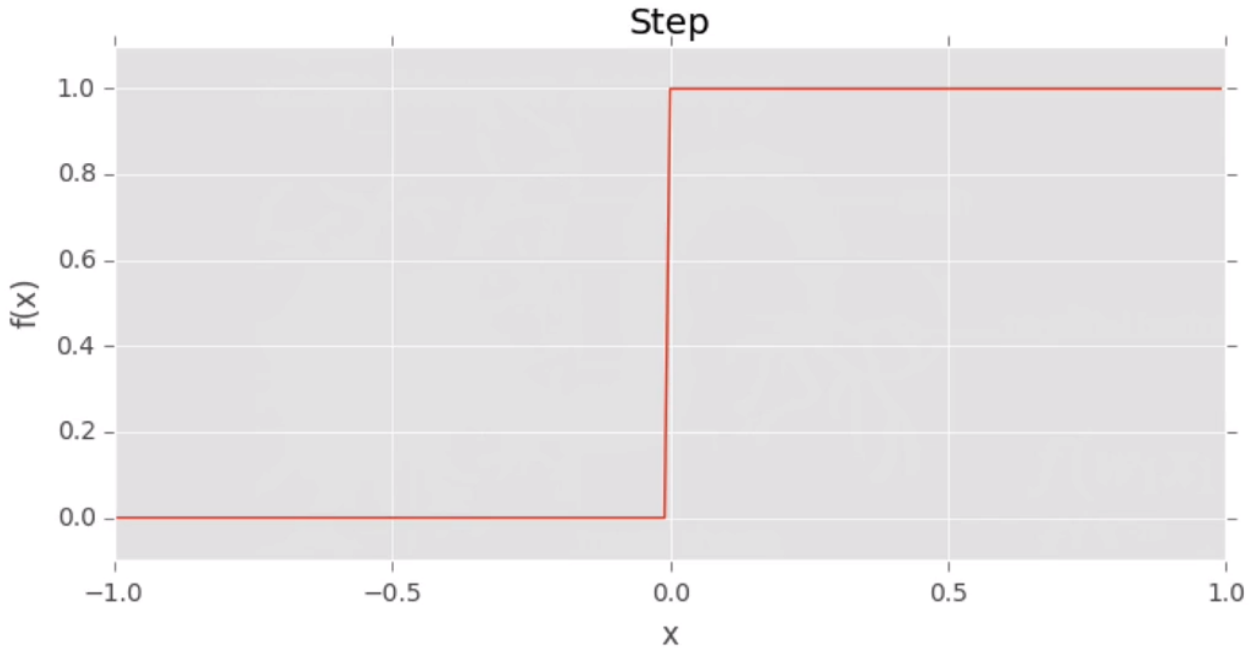
Redes Neuronales Artificiales



$$f(w_1x_1 + w_2x_2 + \cdots + w_nx_n)$$

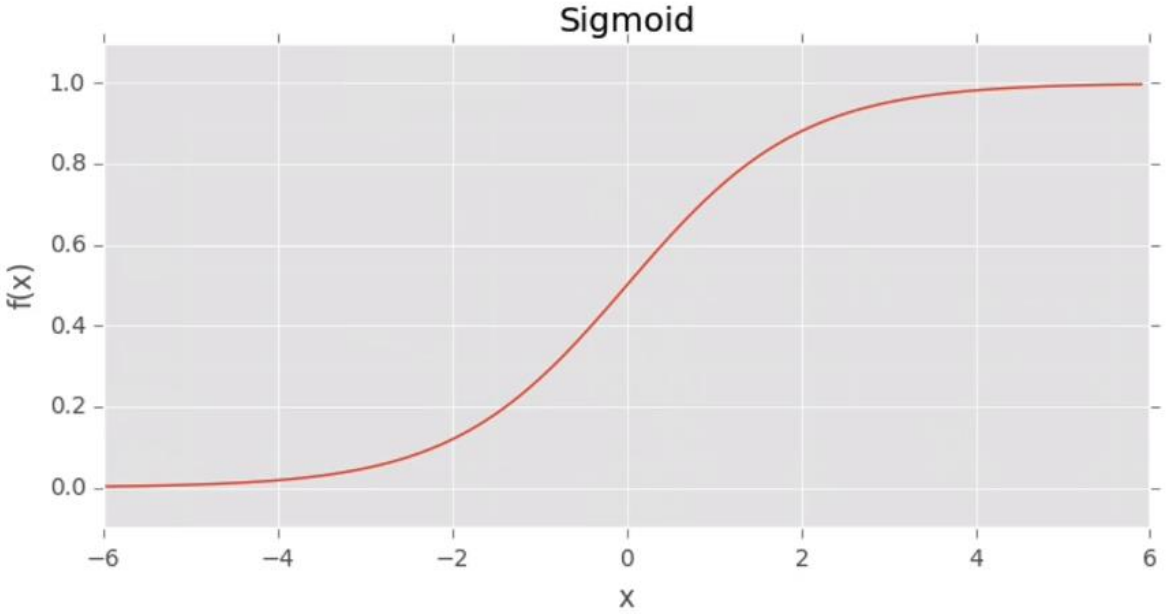
$$f\left(\sum_{i=1}^{n} w_ix_i\right)$$

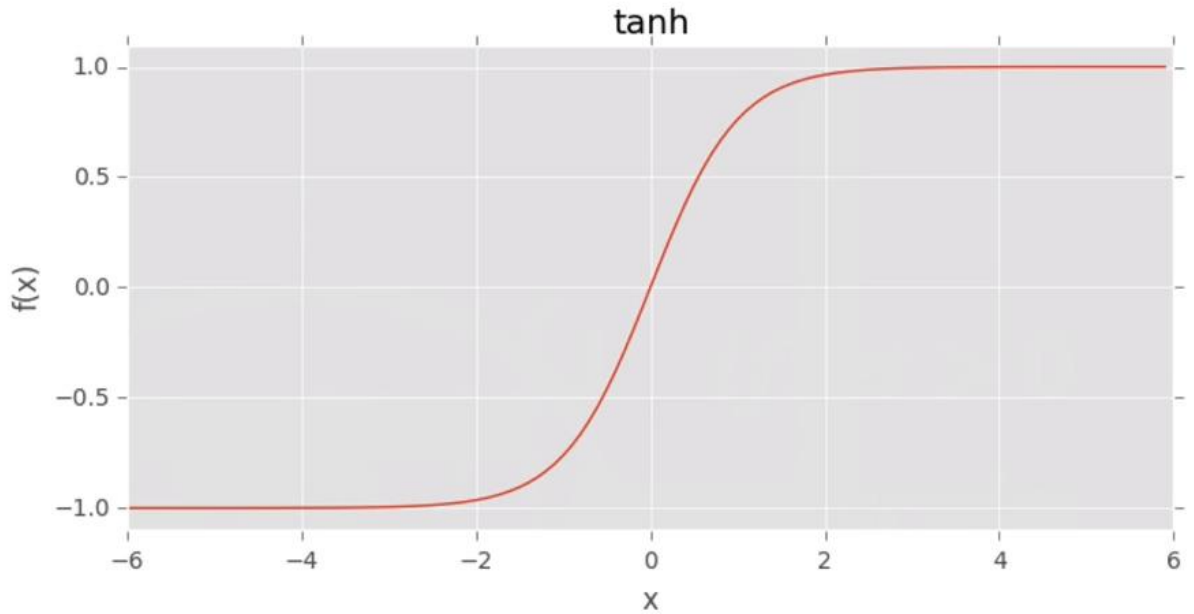
Activación: Paso



$$f(net)\begin{cases}1 & if\, net > 0\\ 0 & otherwise\end{cases}$$

Activación: Sigmoide y Tangente Hiperbólica



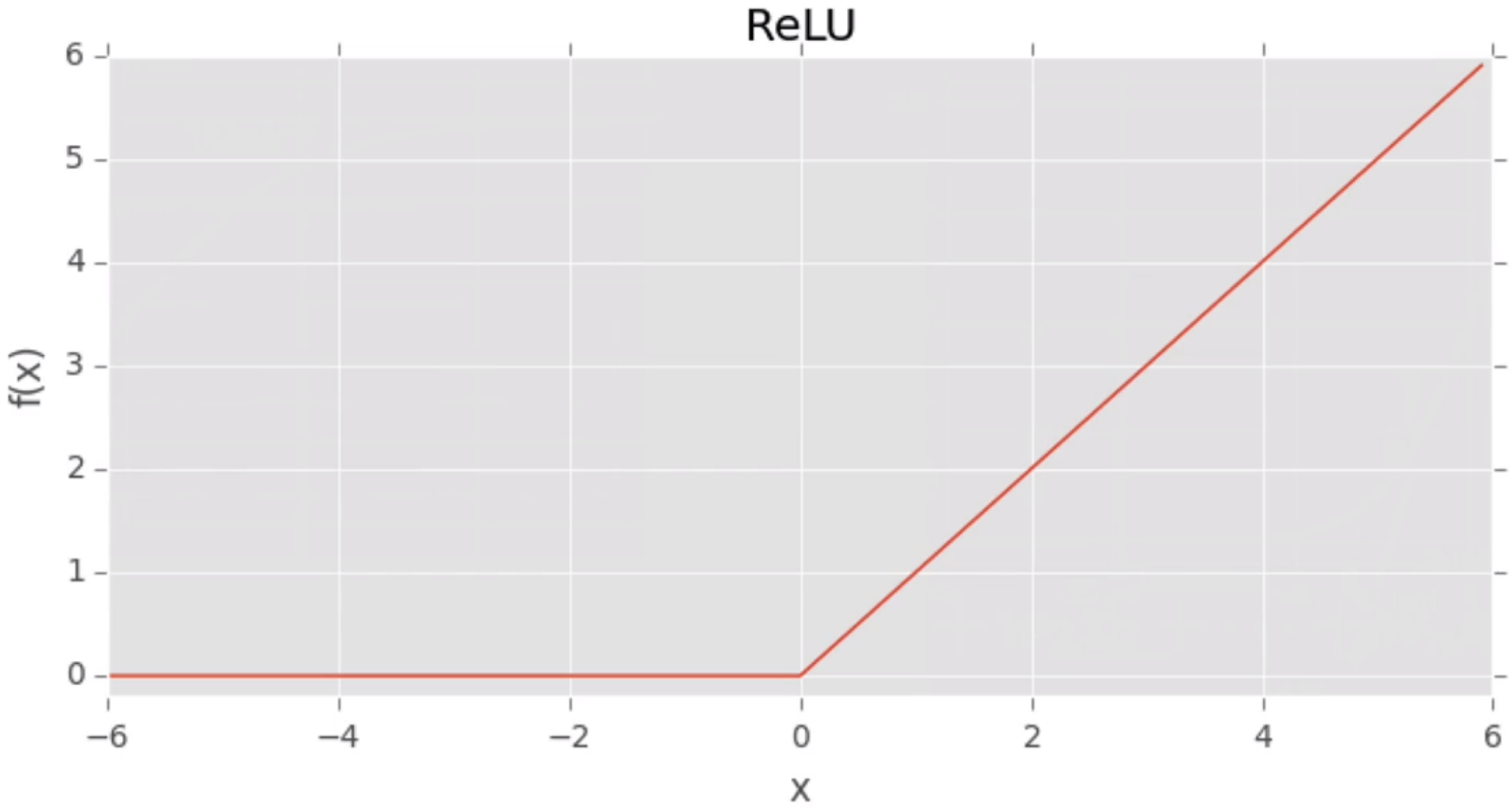


$$t = \sum_{i=1}^{n} w_i x_i$$

$$s(t) = 1/(1+e^{-t})$$

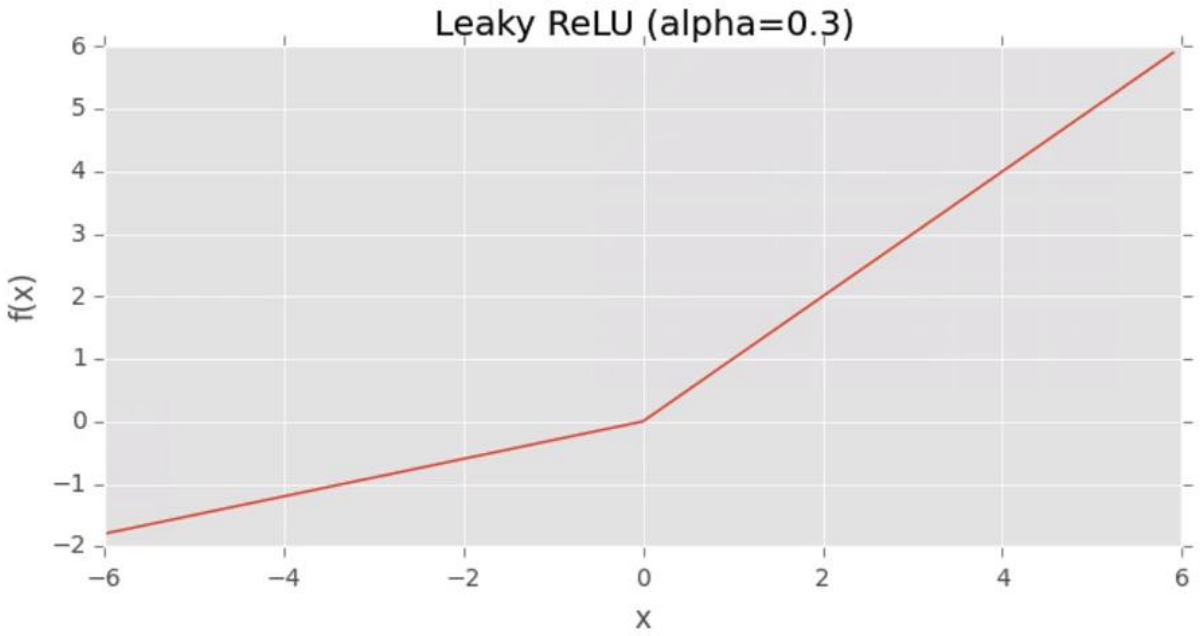
$$f(z) = tanh(z) = (e^{z} - e^{-z})/(e^{z} + e^{-z})$$

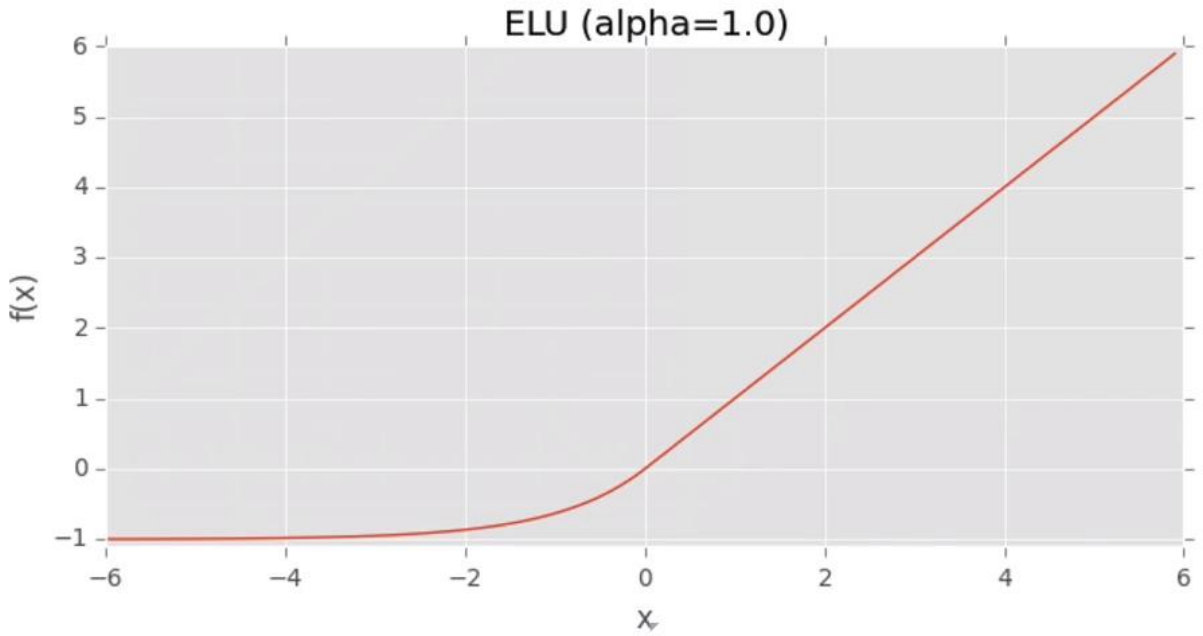
Activación: ReLU



$$f(x) = max(0, x)$$

Activación: Leaky ReLU y ELU





Implementación de Perceptron