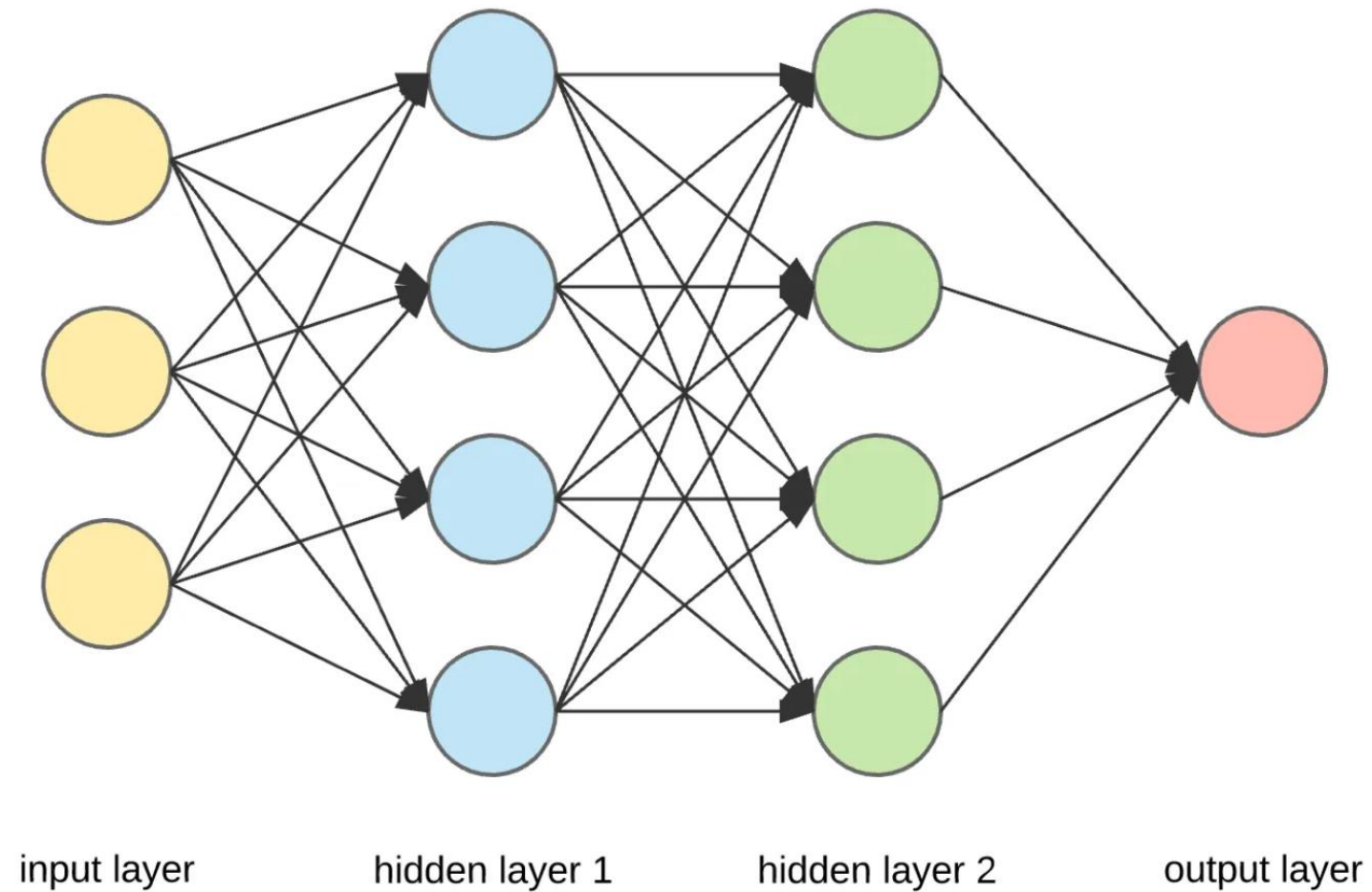
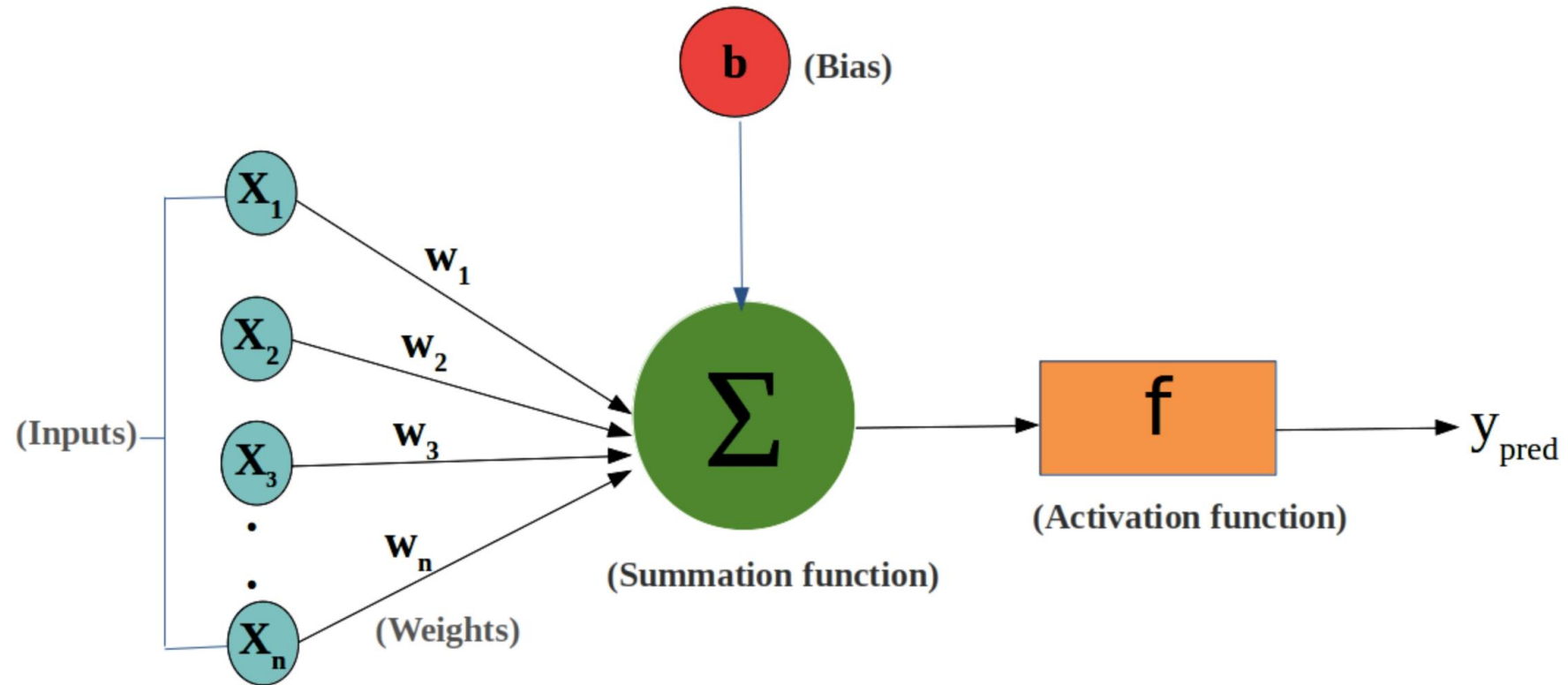


Neural Networks

Architecture



Neuron

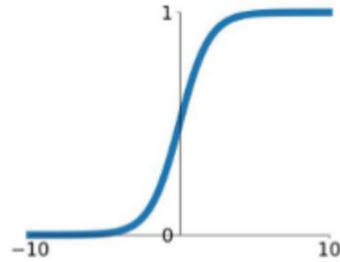


$$y_{\text{pred}} = f((X_1 * W_1) + (X_2 * W_2) + (X_3 * W_3) + (X_4 * W_4) + \dots + (X_n * W_n) + B)$$

Activation functions

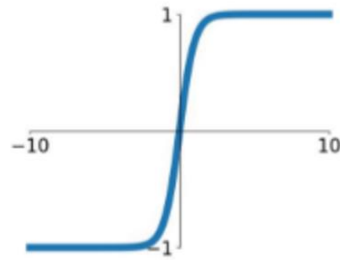
Sigmoid

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



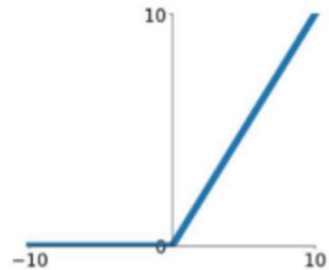
tanh

$$\tanh(x)$$



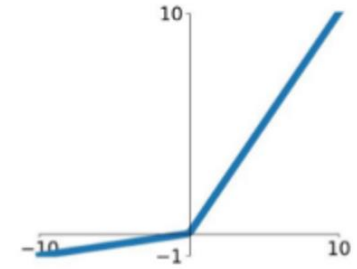
ReLU

$$\max(0, x)$$



Leaky ReLU

$$\max(0.1x, x)$$

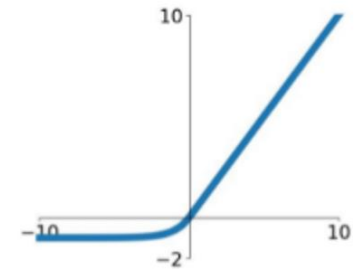


Maxout

$$\max(w_1^T x + b_1, w_2^T x + b_2)$$

ELU

$$\begin{cases} x & x \geq 0 \\ \alpha(e^x - 1) & x < 0 \end{cases}$$



Training

