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pirmais dock April 2019 \bullet The sigmoid function (or logistic)

$$\phi(x)\frac{1}{1 + exp(-x)}$$

 \bullet The hyperbolic tangent function ("tanh")

$$\phi(x)\frac{exp(x) - exp(-x)}{exp(x) + exp(-x)} = \frac{exp(2x) - 1}{exp(2x) + 1}$$

 $\bullet\,$ The hard threshold function

$$\phi\beta(x) = 1_{x \ge \beta}$$

• The Rectified Linera Unit (ReLU) activation function

$$\phi(x) = \max(0, x)$$

Here is a schematic representation of an artificial neuron where $\sum = (\omega_j, x) + b_j$