

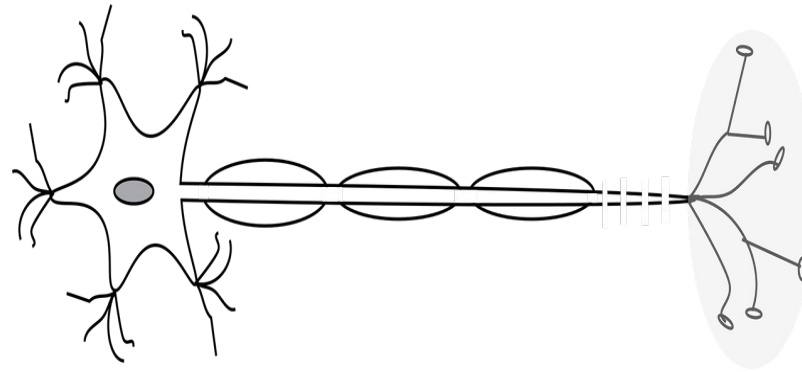


Activation Functions

Deep Learning Pre-Work

Activation in biological neurons

Biological Neuron

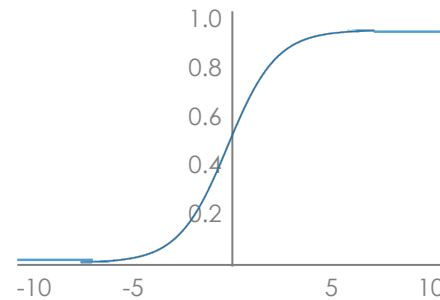
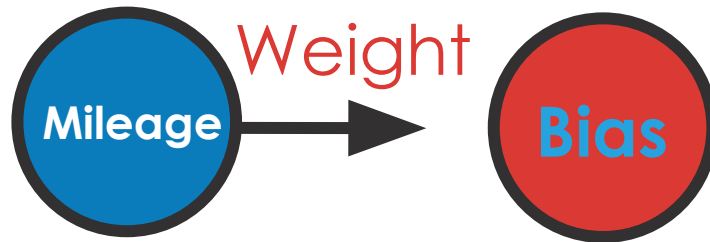


Output Layer

Sigmoid Activation Function

Output
Layer

Sigmoid



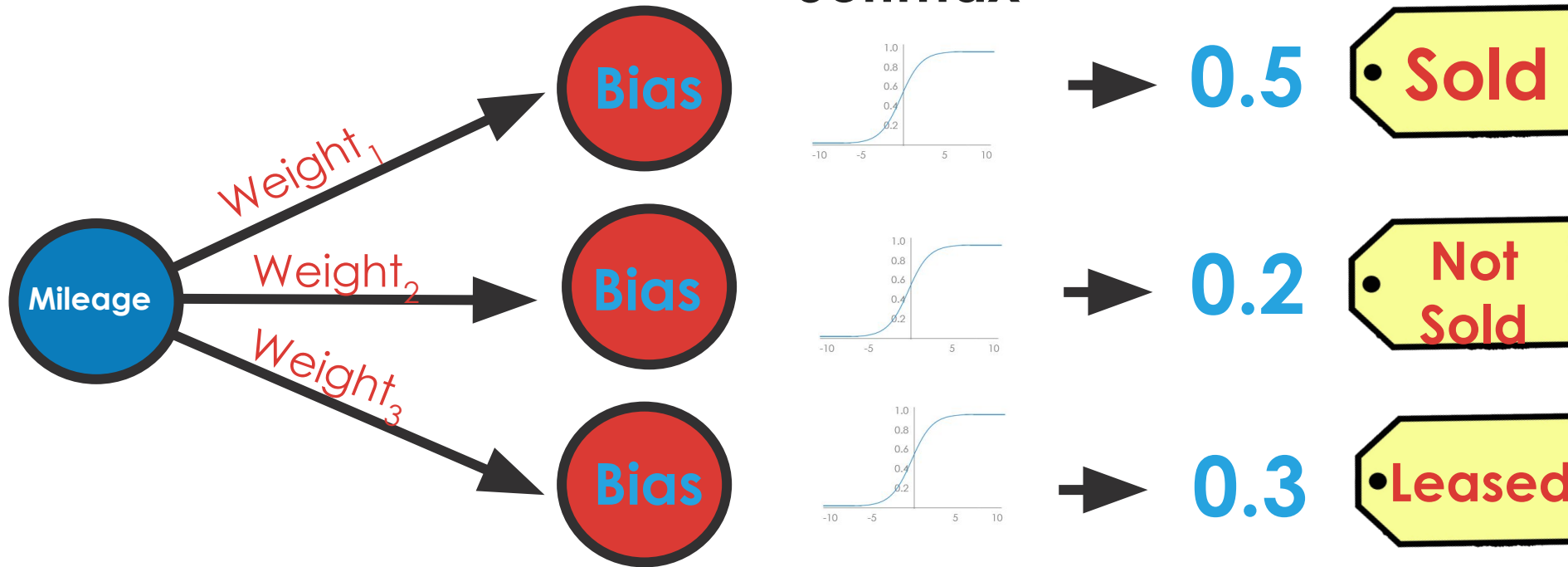
→ 0.8



Source: Wikimedia Commons

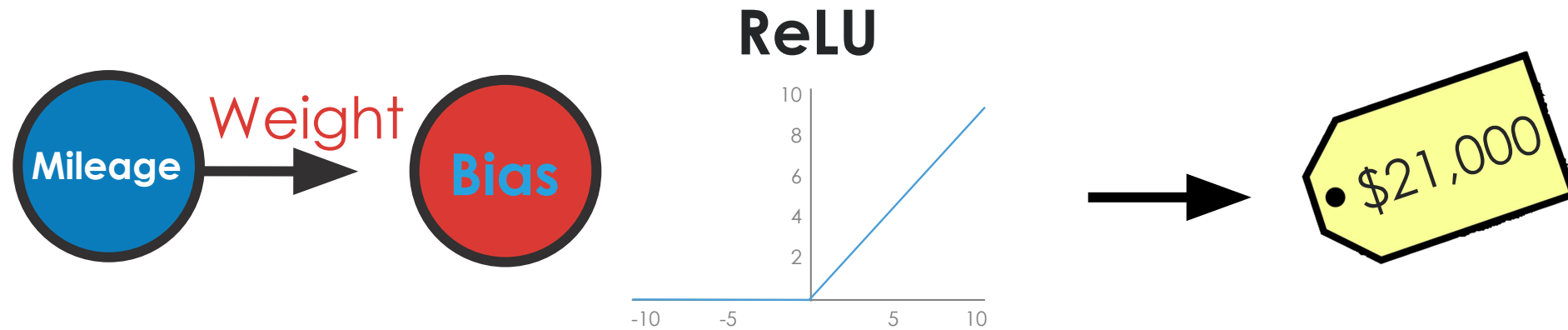
Softmax Activation Function

Softmax

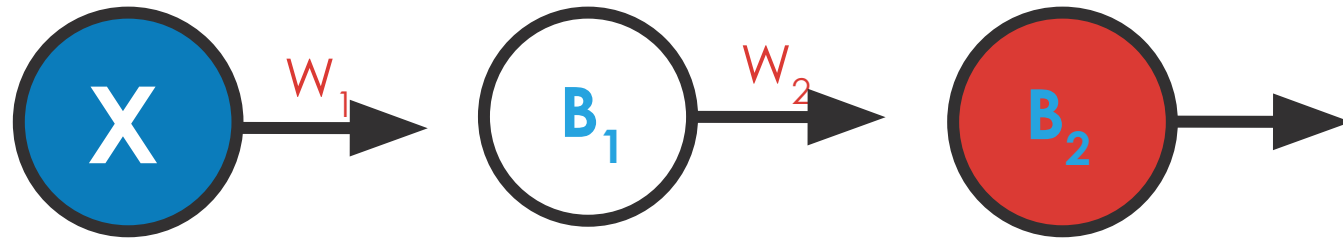


Source: Wikimedia Commons

ReLU Activation Function



Hidden Layers



Equation

$$(X * W_1 + B_1) * W_2 + B_2$$



$$X * W_1 * W_2 + W_2 * B_1 + B_2$$



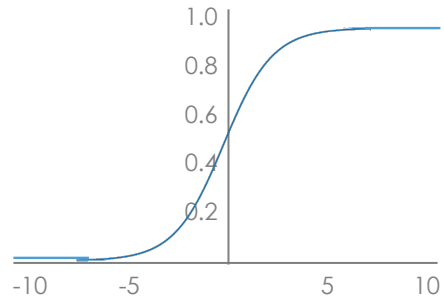
$$X * (W_1 * W_2) + (W_2 * B_1 + B_2)$$



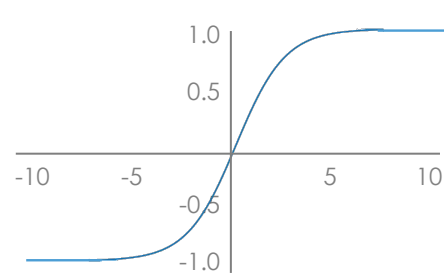
Linear
equation $\rightarrow X * W + B$

Popular Activation Functions

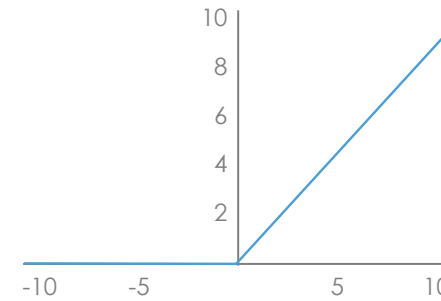
Sigmoid



Tanh



ReLU



Leaky ReLU

