

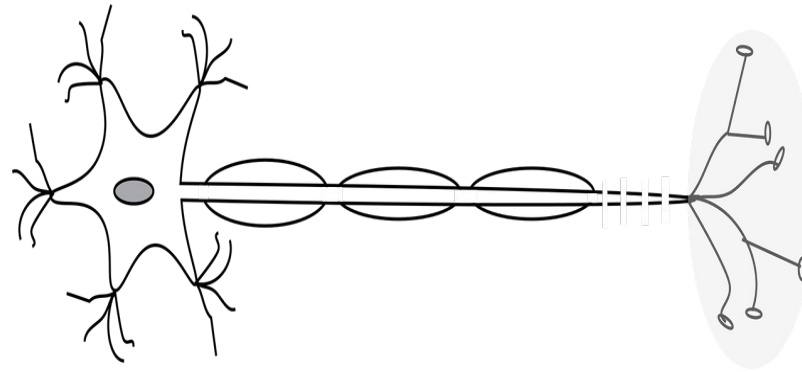


Activation Functions

Deep Learning Pre-Work

Activation in biological neurons

Biological Neuron



This file is meant for personal use by brentjones@gmail.com only.

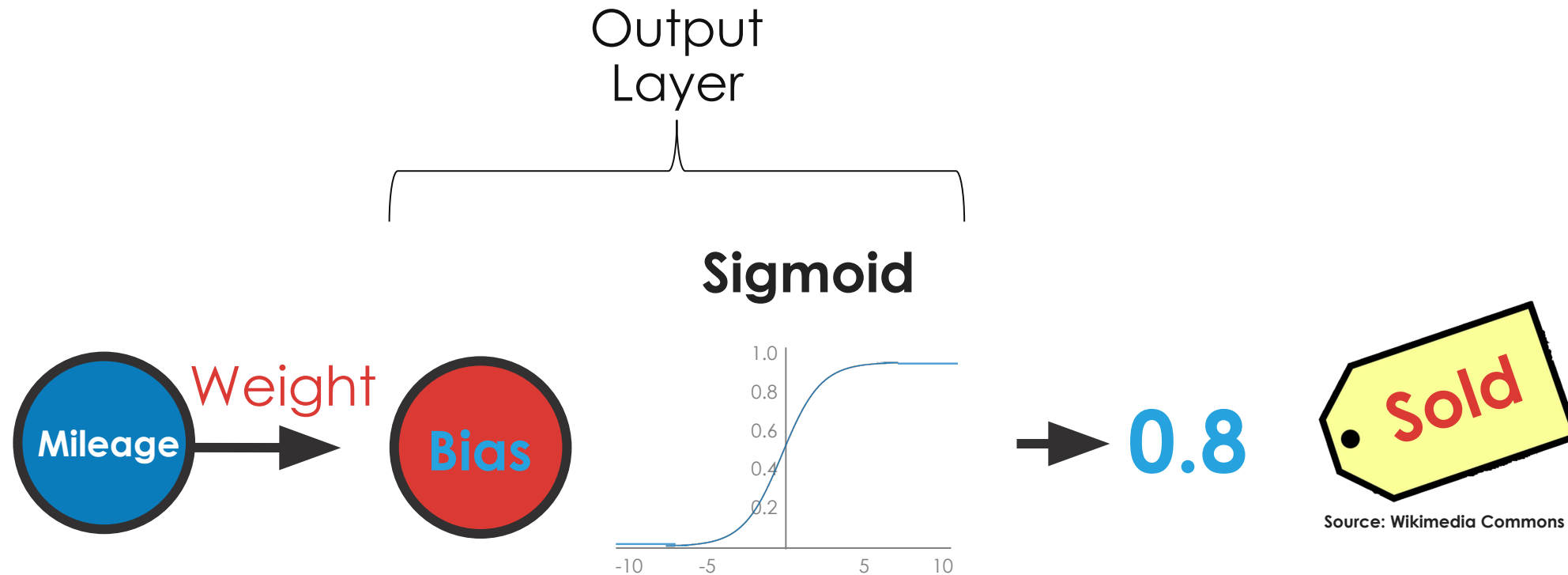
Sharing or publishing the contents in part or full is liable for legal action.

Output Layer

This file is meant for personal use by brentjones@gmail.com only.

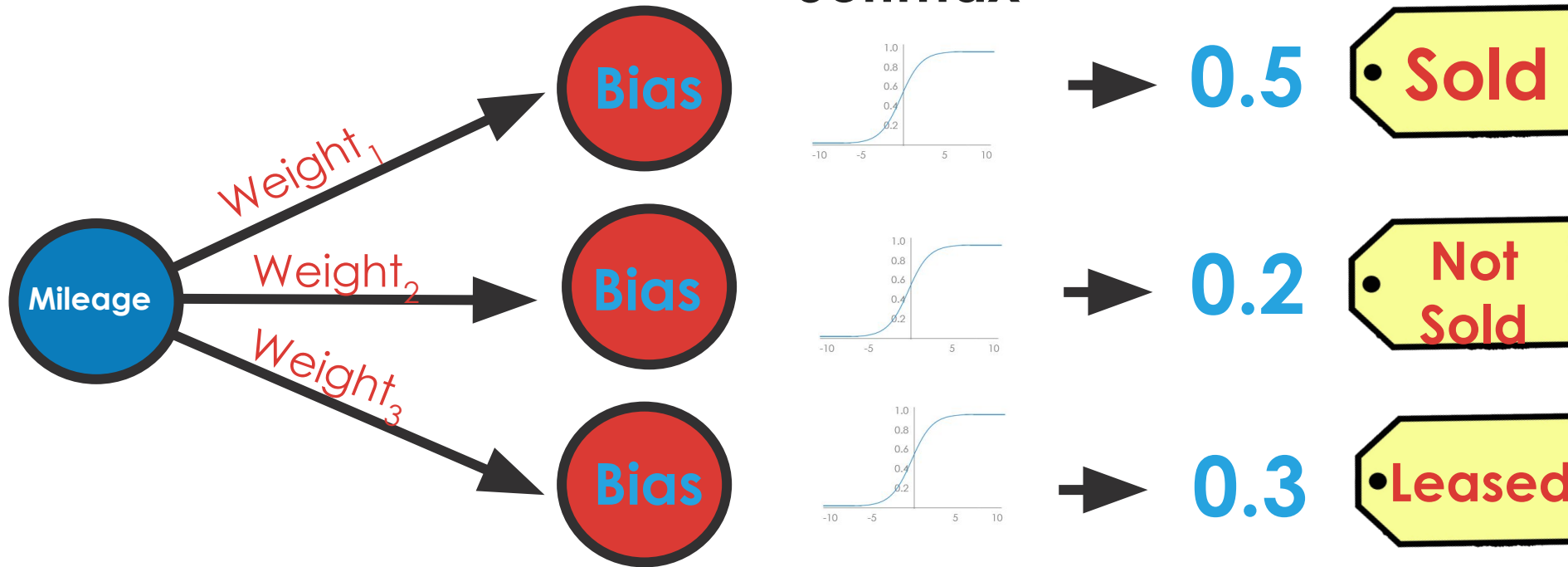
Sharing or publishing the contents in part or full is liable for legal action.

Sigmoid Activation Function



Softmax Activation Function

Softmax

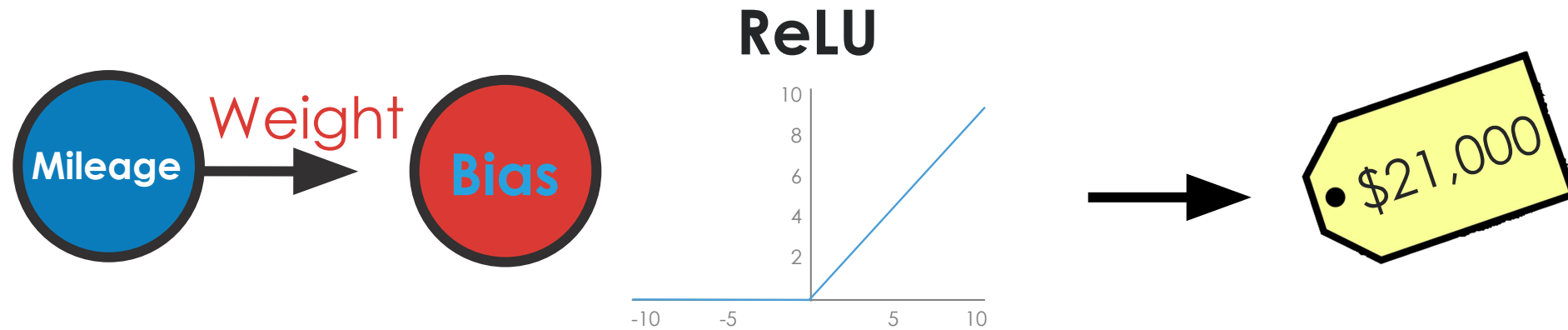


Source: Wikimedia Commons

This file is meant for personal use by brentjones@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

ReLU Activation Function



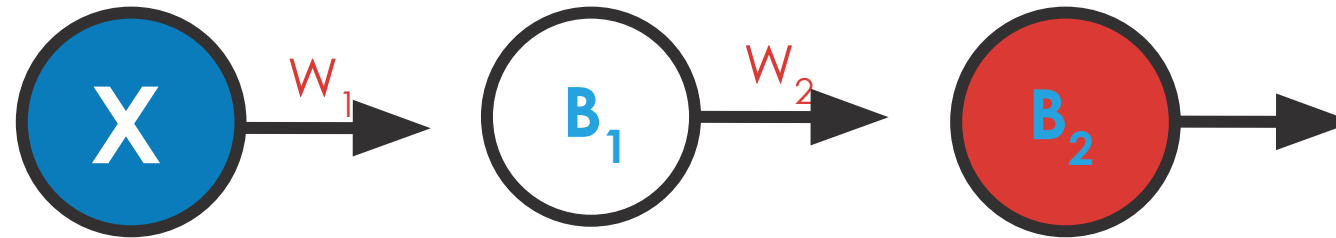
This file is meant for personal use by brentjones@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

Hidden Layers

This file is meant for personal use by brentjones@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.



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

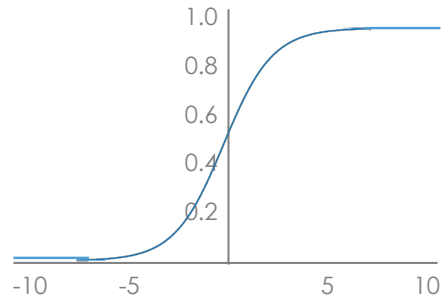
$$\longrightarrow X * W + B$$

This file is meant for personal use by brentjones@gmail.com only.

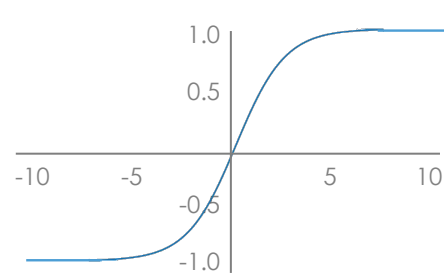
Sharing or publishing the contents in part or full is liable for legal action.

Popular Activation Functions

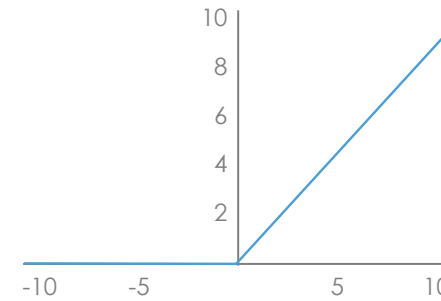
Sigmoid



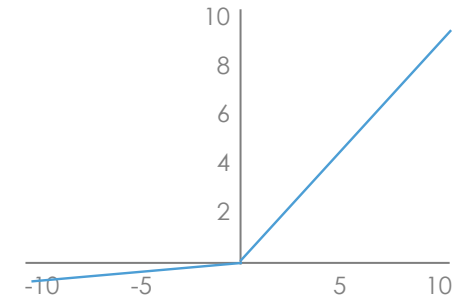
Tanh



ReLU



Leaky ReLU



This file is meant for personal use by brentjones@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.