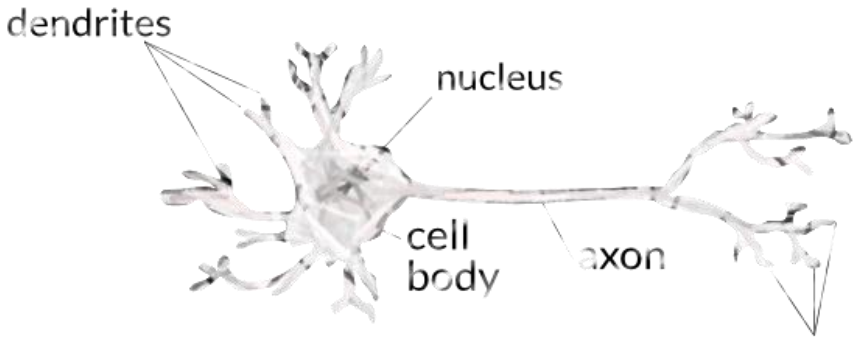
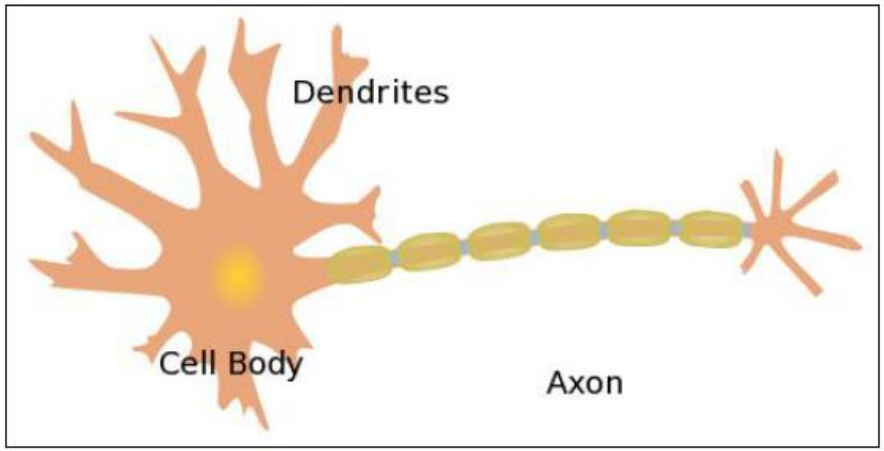
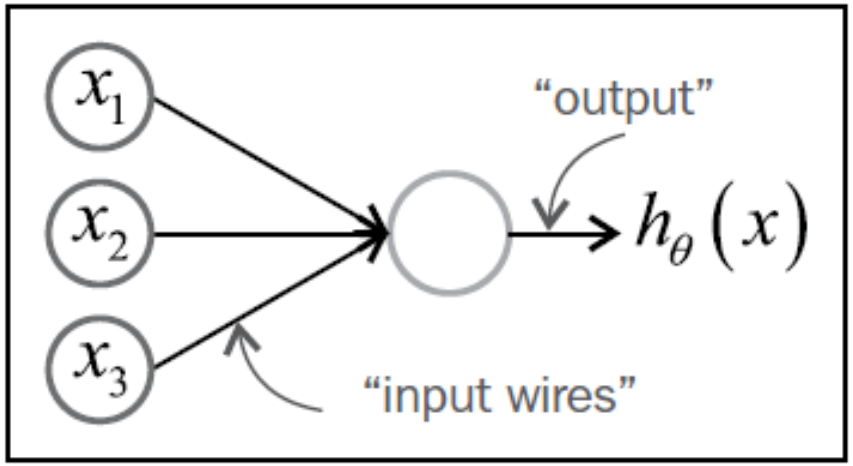
CLASSIFICATION

Perceptron – Binary Classification

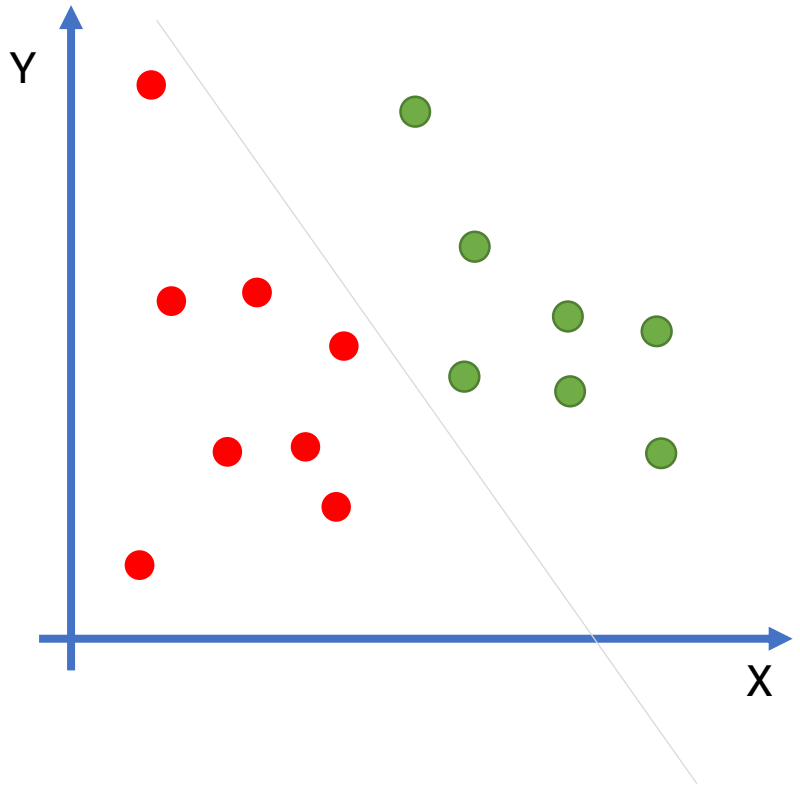


Primitive Neural network



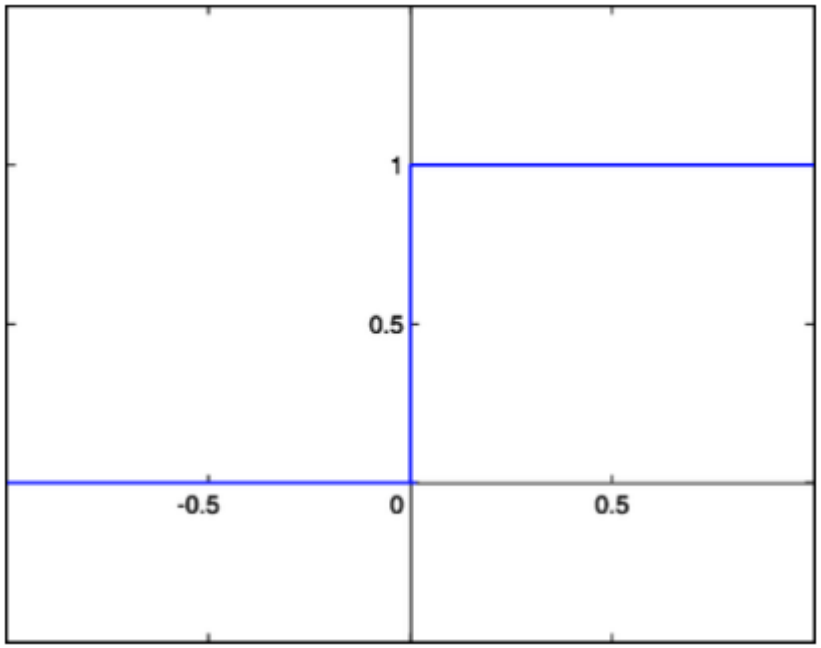


Binary Classification using Perceptron



Perceptron Nodes

- Heaviside Step Function



$$g(x) = \begin{Bmatrix} 1, & if\ x > 0 \\ 0 & elsewhere \end{Bmatrix}$$

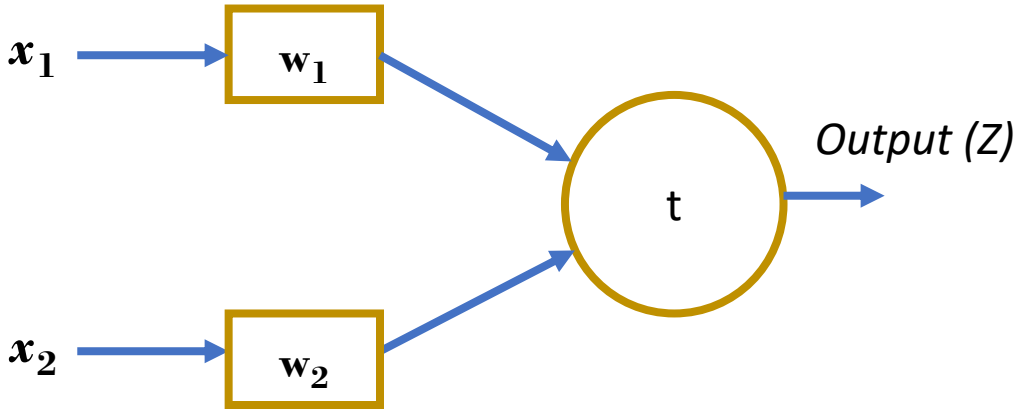
Basic Two Input Perceptron

X1, X2 = Inputs

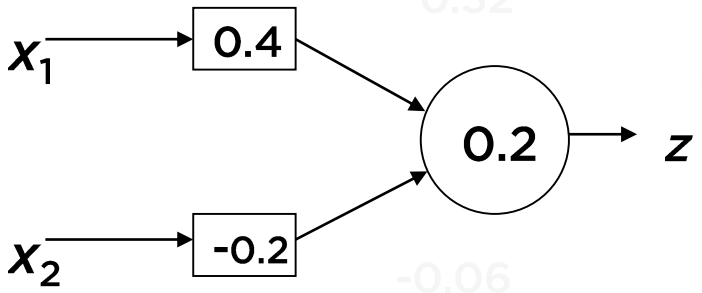
W1, W2 = Input weights

t = Threshold
= Activation Function)

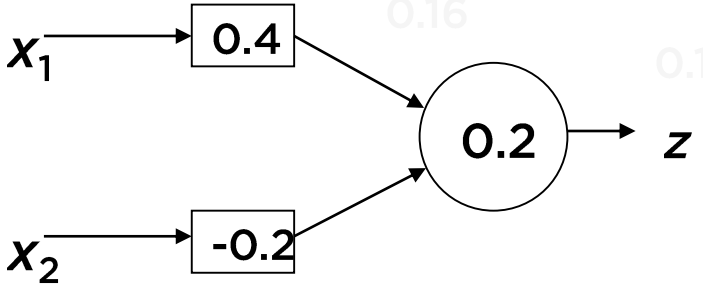
Z = Output (Binary)



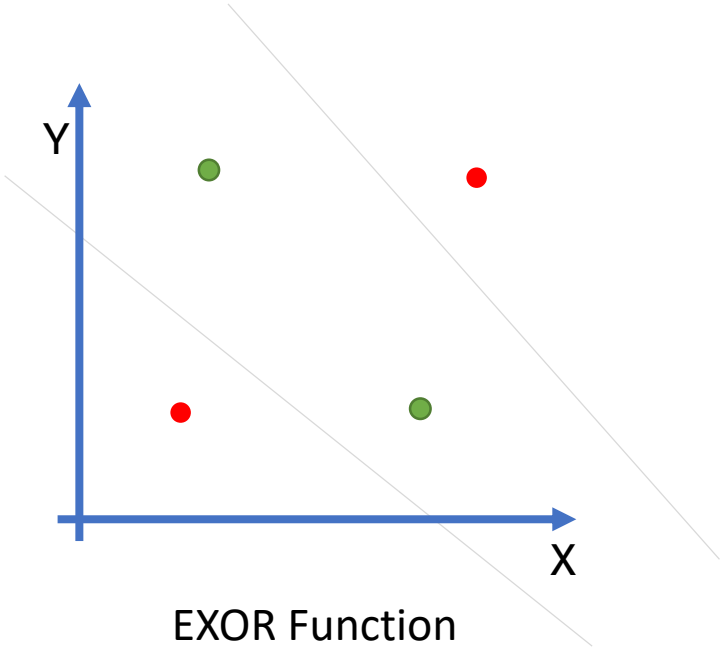
Example 1



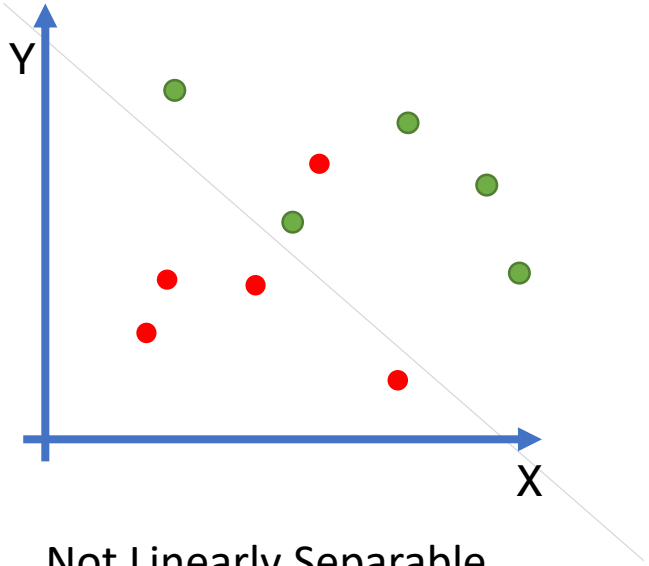
X1	X2	T
0.8	0.3	1
0.4	0.1	0



Problems



EXOR Function



Not Linearly Separable

Neural Network