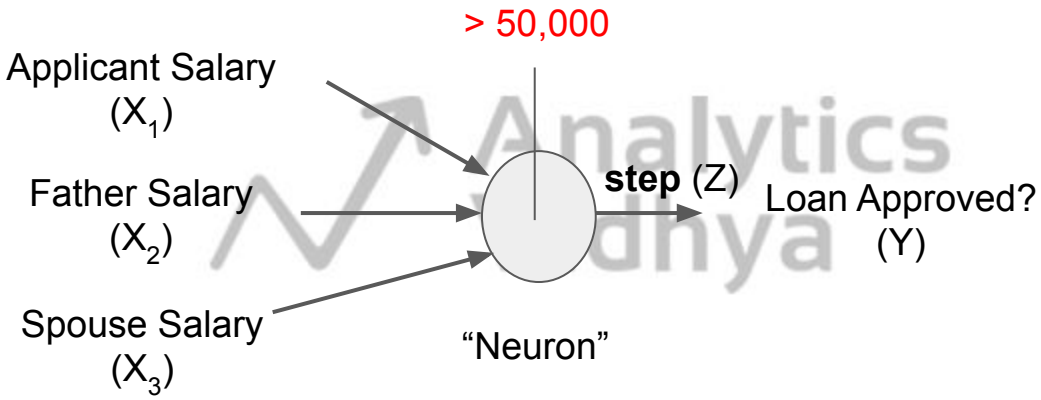
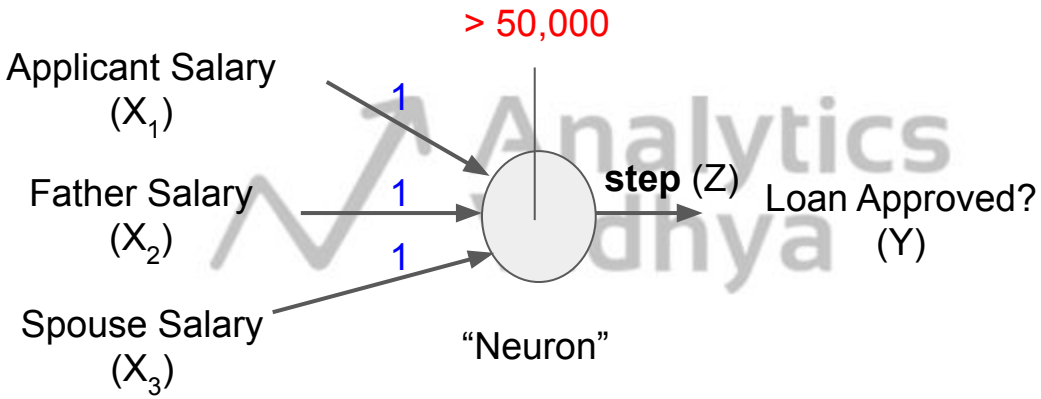
Weights in Perceptron

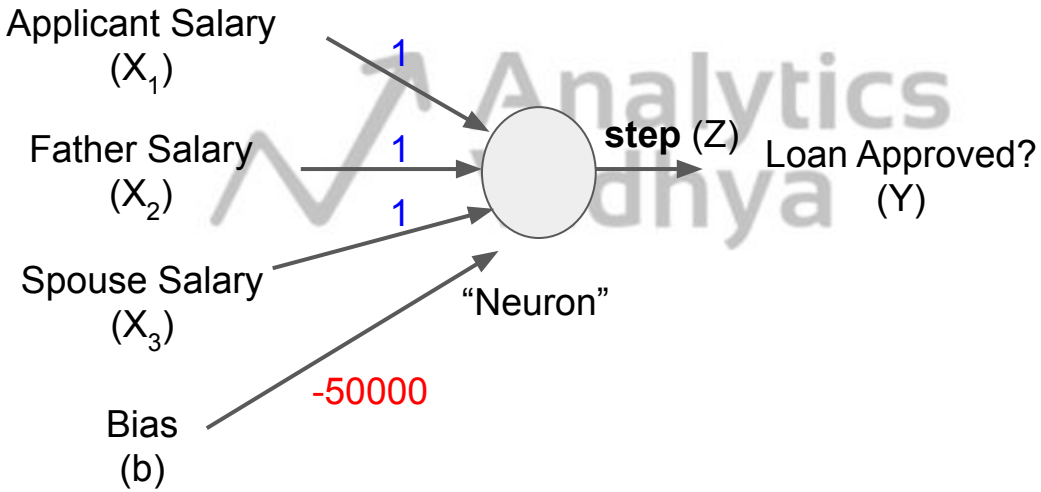
Weights in Perceptron



Weights in Perceptron

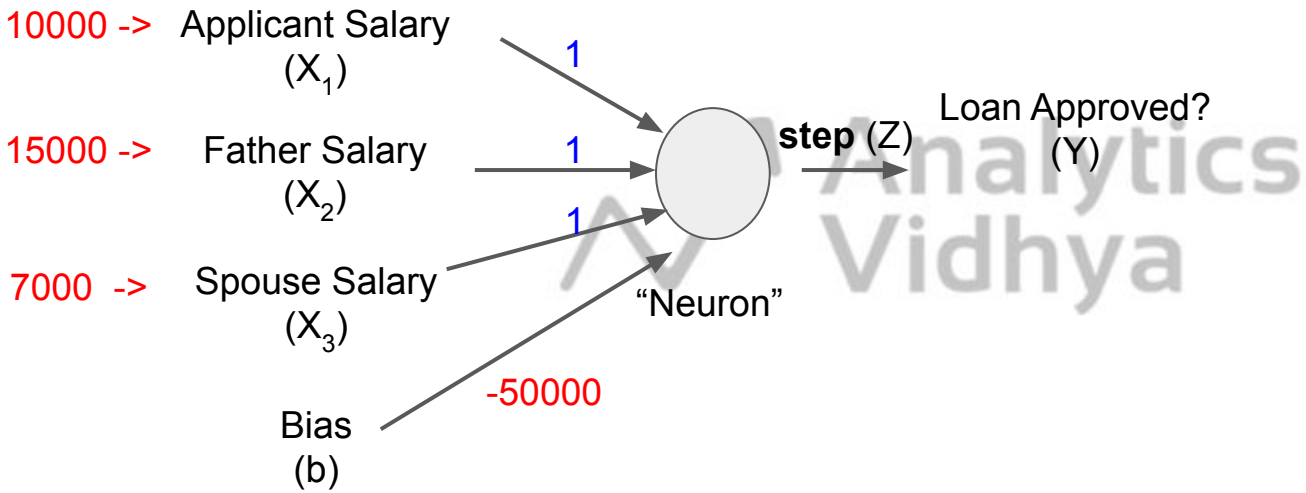


Weights in Perceptron



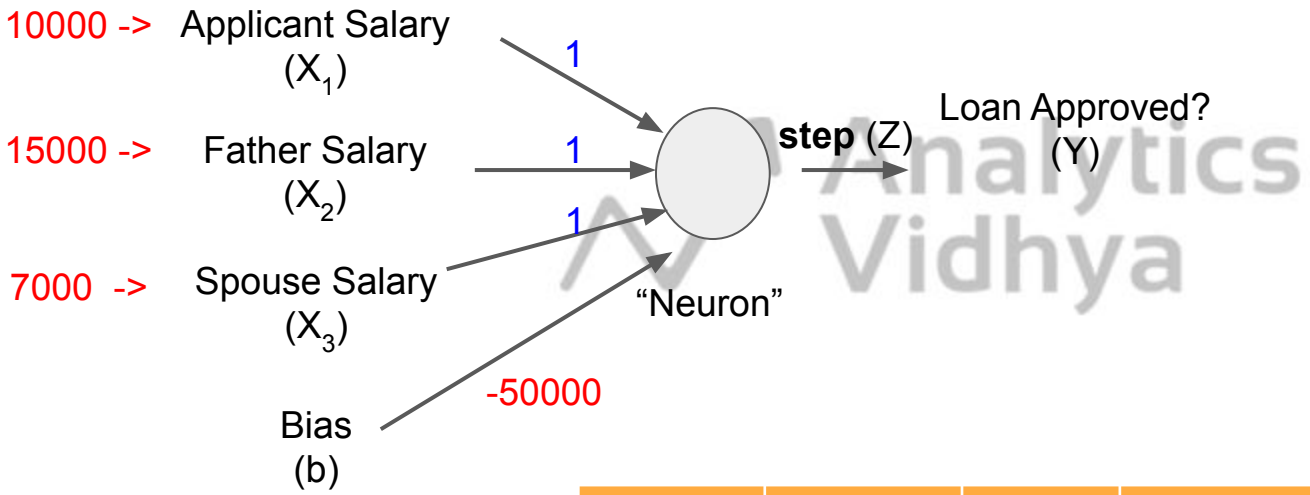
Weights in Perceptron

Example 1:



Weights in Perceptron

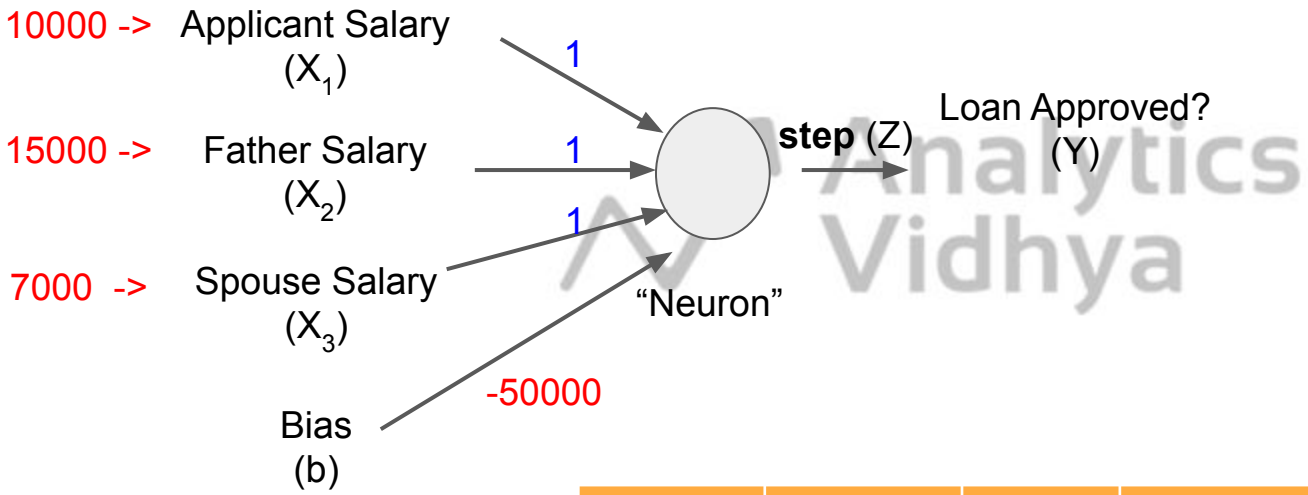
Example 1:



X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)
10000*1	15000*1	7000*1	32000		

Weights in Perceptron

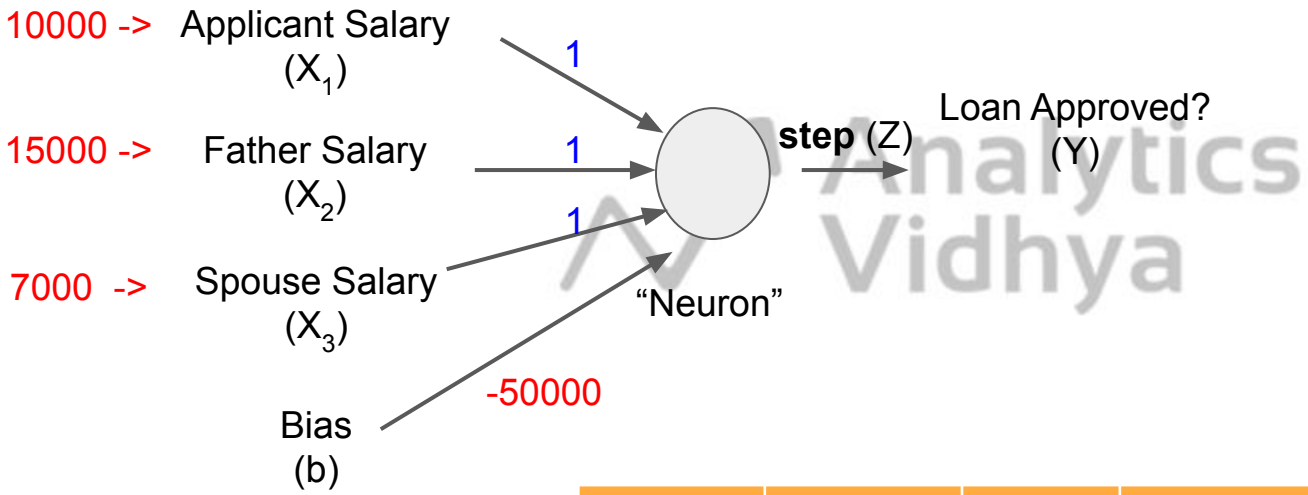
Example 1:



X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)
10000*1	15000*1	7000*1	32000	-18000	

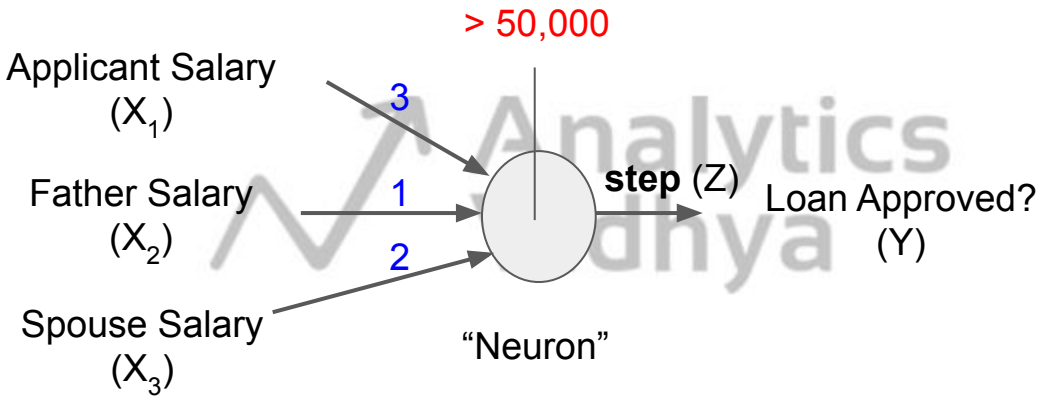
Weights in Perceptron

Example 1:



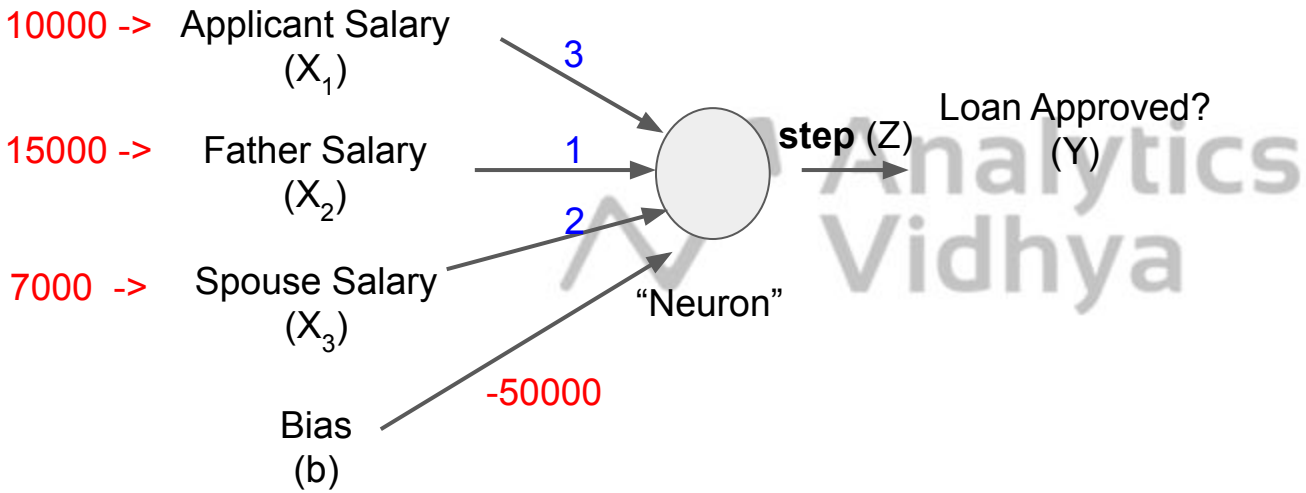
X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)
10000*1	15000*1	7000*1	32000	-18000	0

Weights in Perceptron



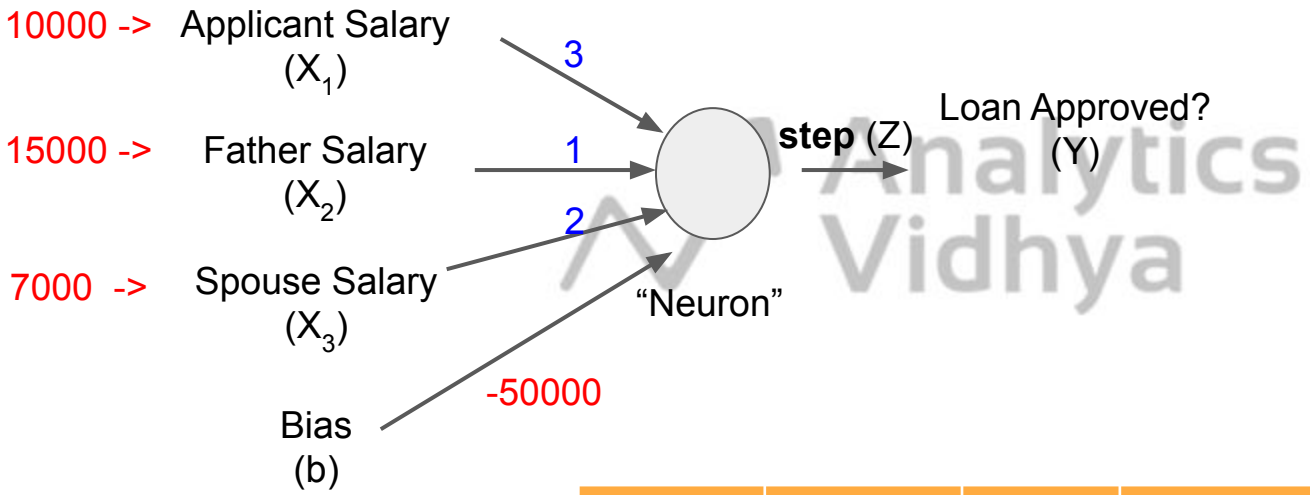
Weights in Perceptron

Example 2:



Weights in Perceptron

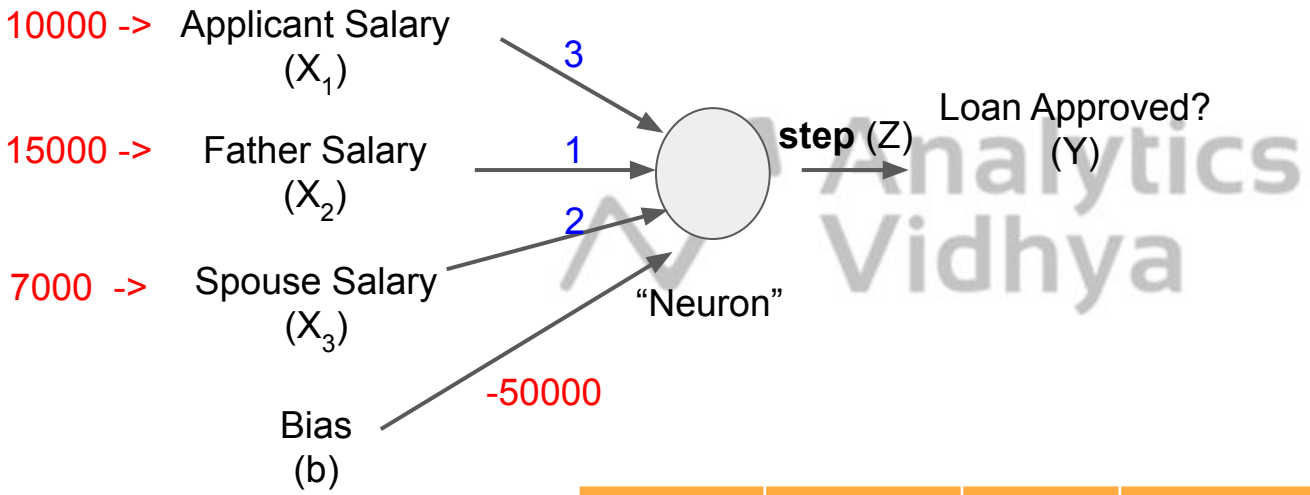
Example 2:



X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)
10000*3	15000*1	7000*2	59000		

Weights in Perceptron

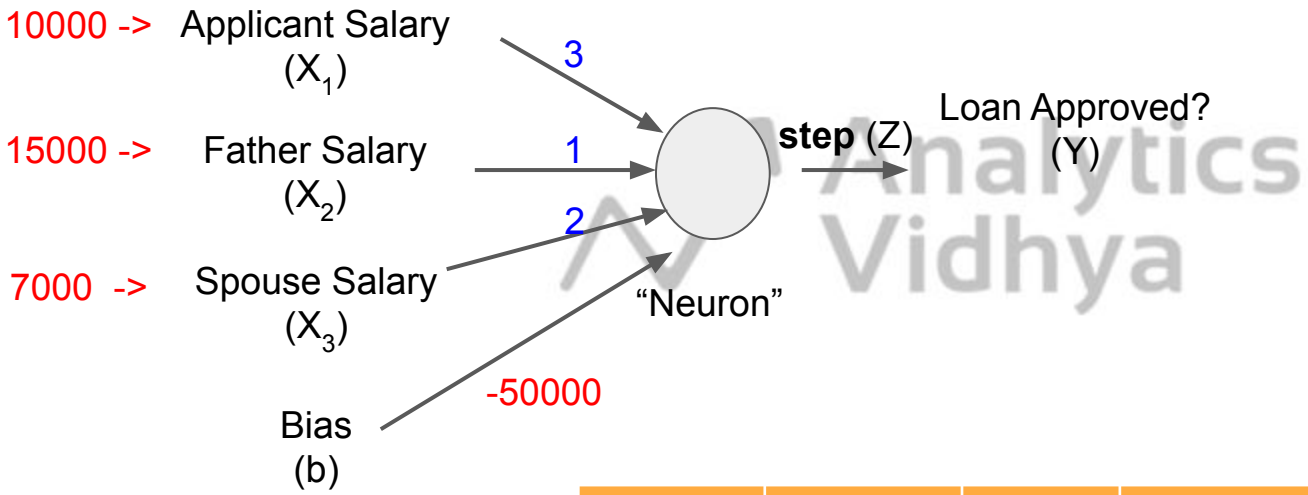
Example 2:



X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)
10000*3	15000*1	7000*2	59000	3000	

Weights in Perceptron

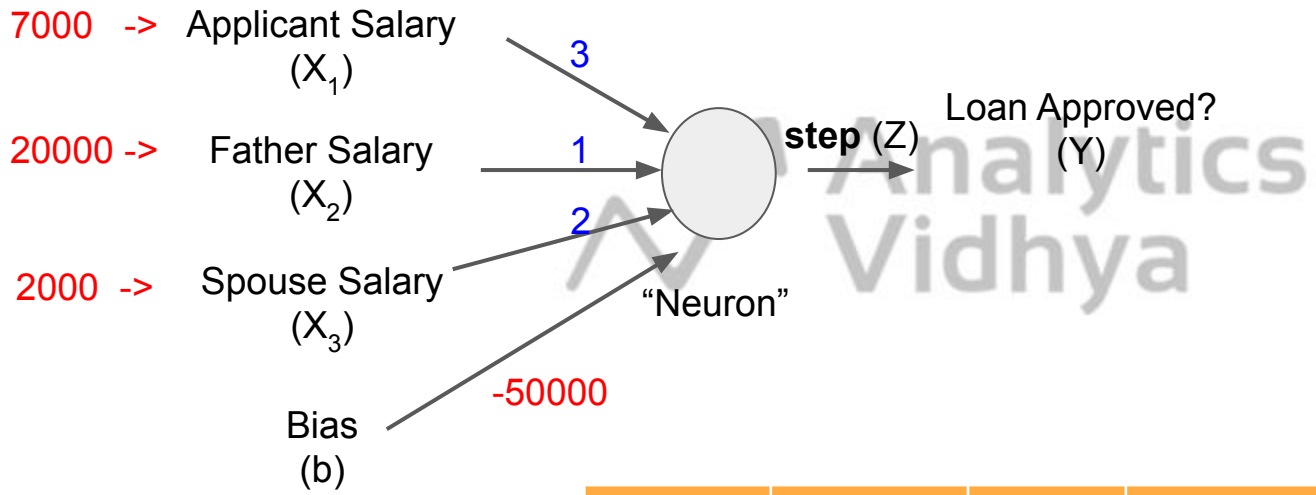
Example 2:



X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)
10000*3	15000*1	7000*2	59000	3000	1

Weights in Perceptron

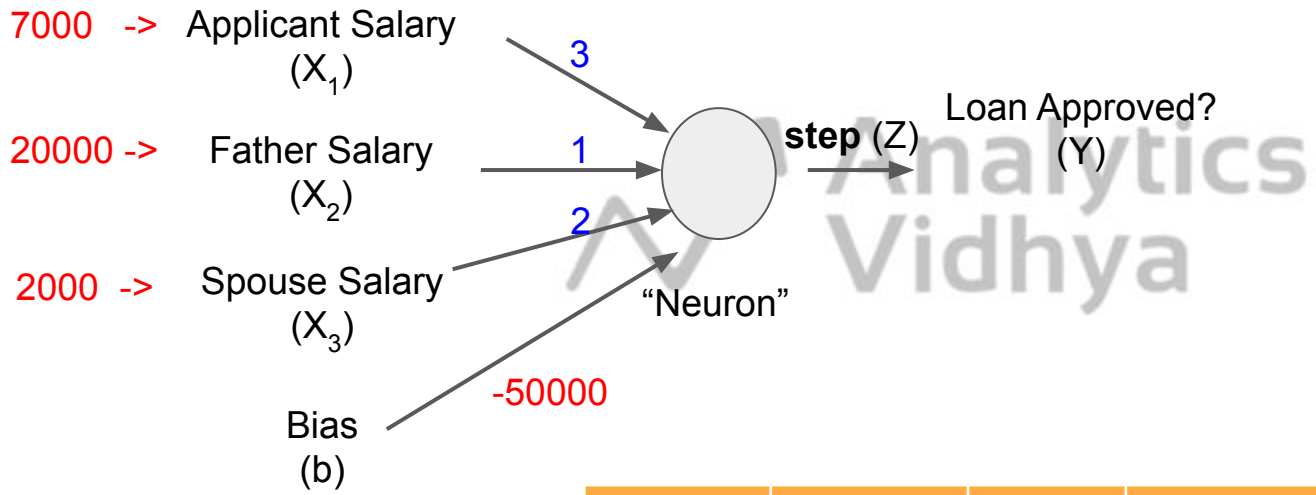
Example 3:



X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)

Weights in Perceptron

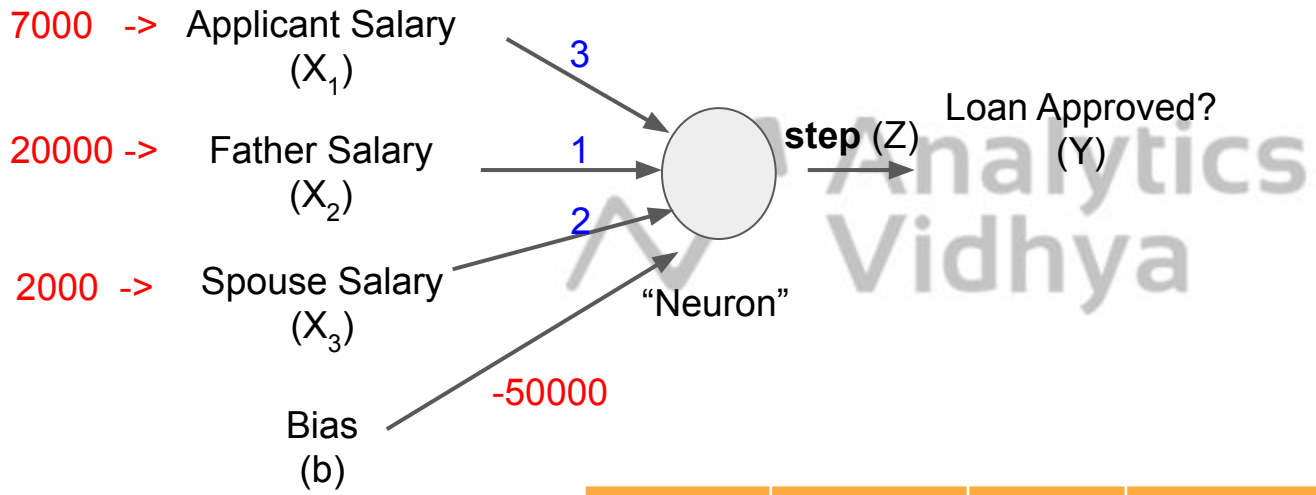
Example 3:



X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)
7000*3	20000*1	2000*2	45000	-5000	

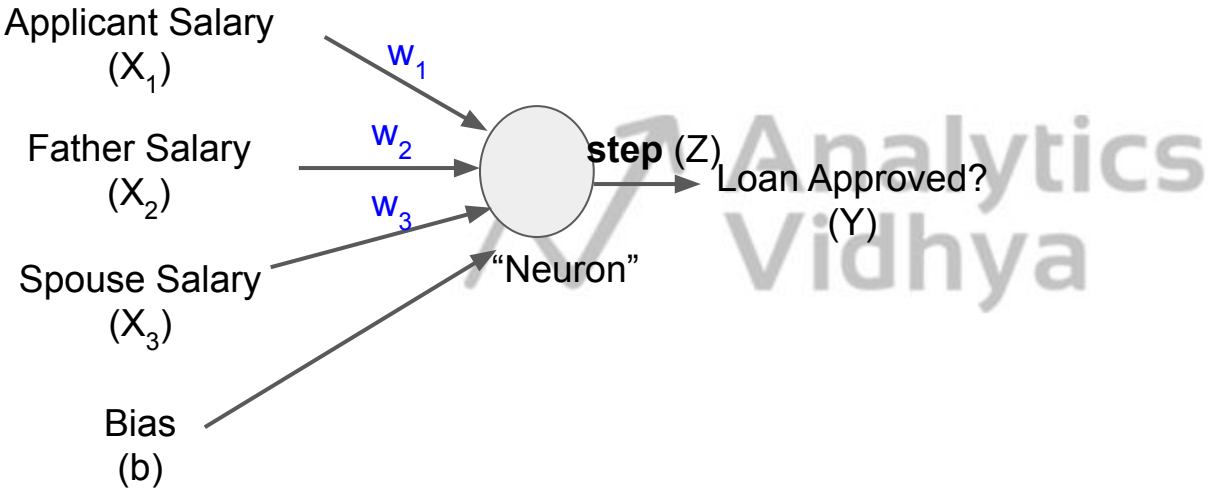
Weights in Perceptron

Example 3:

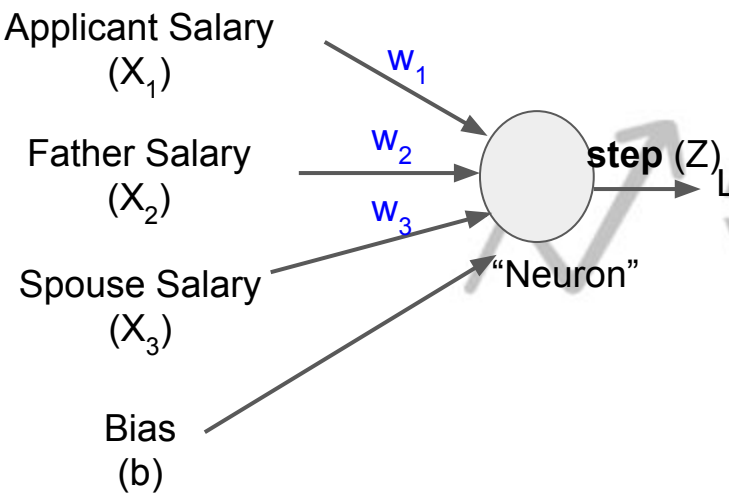


X1*w1	X2*w2	X3*w3	Sum of inputs	Z (Sum of inputs + bias)	step (Z)
7000*3	20000*1	2000*2	45000	-5000	0

Weights in Perceptron

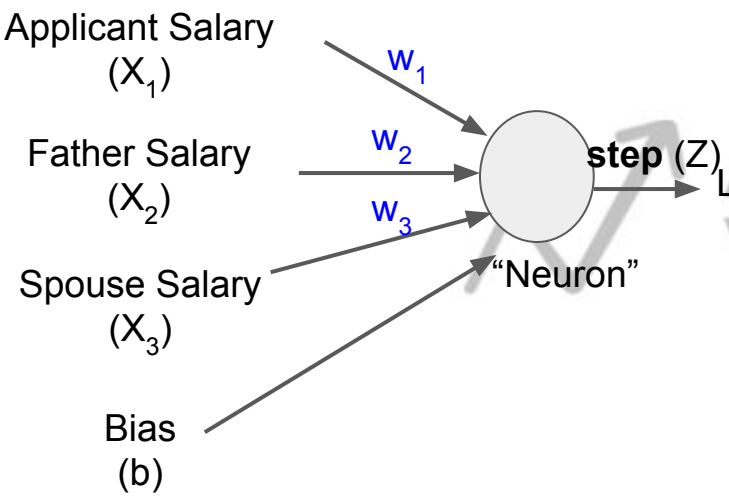


Weights in Perceptron



Sum of inputs = $X_1 * w_1 + X_2 * w_2 + X_3 * w_3$

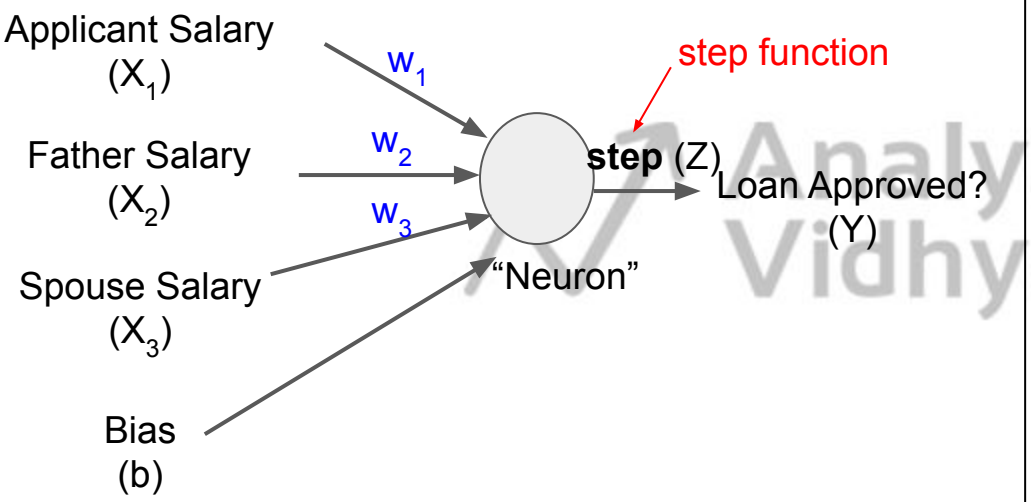
Weights in Perceptron



Sum of inputs = $X_1 * w_1 + X_2 * w_2 + X_3 * w_3$

$Z = X_1 * w_1 + X_2 * w_2 + X_3 * w_3 + b$ (bias)

Perceptron Model

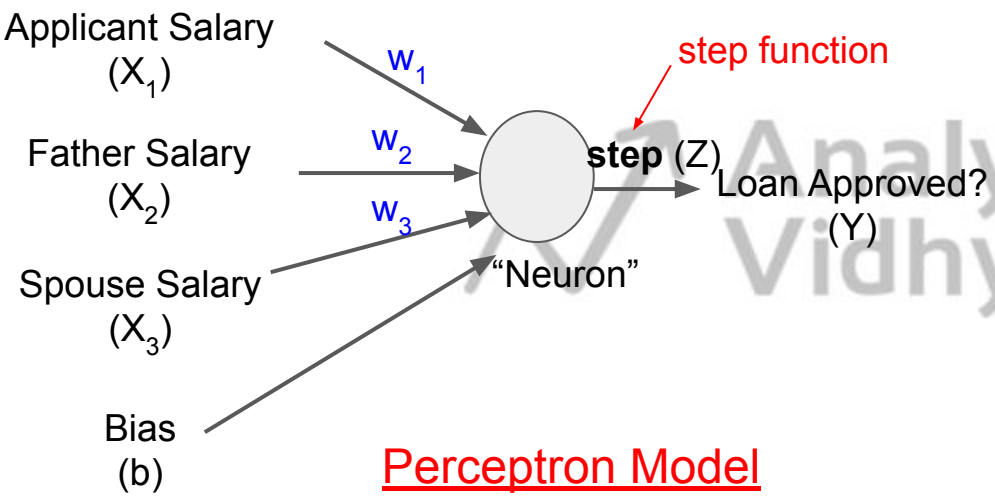


Sum of inputs = $X_1 * w_1 + X_2 * w_2 + X_3 * w_3$

$Z = X_1 * w_1 + X_2 * w_2 + X_3 * w_3 + b$ (bias)

$\hat{Y}$ (output) = **step** (Z)

Perceptron Model



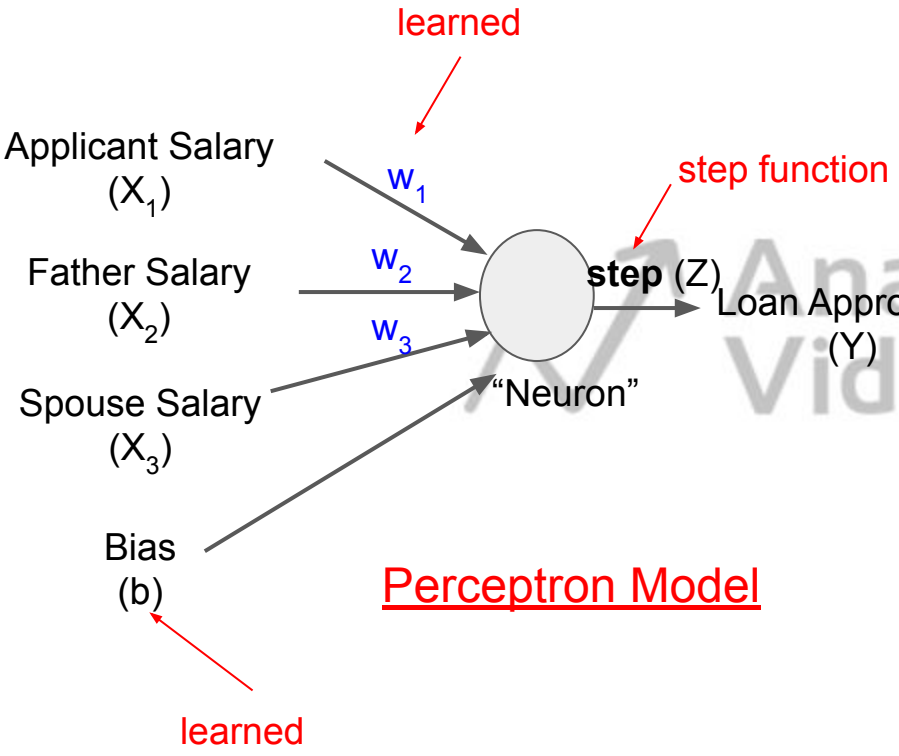
Perceptron Model

Sum of inputs = $X_1 * w_1 + X_2 * w_2 + X_3 * w_3$

$Z = X_1 * w_1 + X_2 * w_2 + X_3 * w_3 + b$ (bias)

$\hat{Y}$ (output) = **step** (Z)

Perceptron Model

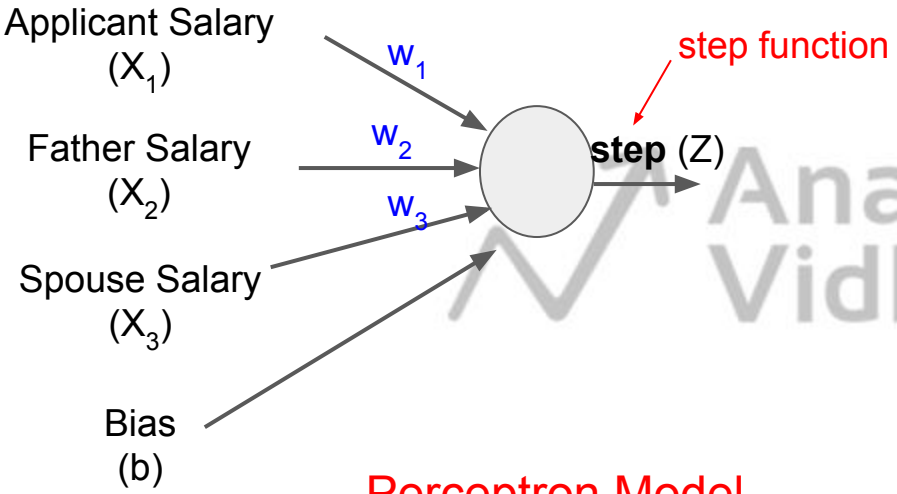


Sum of inputs = $X_1 * w_1 + X_2 * w_2 + X_3 * w_3$

$Z = X_1 * w_1 + X_2 * w_2 + X_3 * w_3 + b$ (bias)

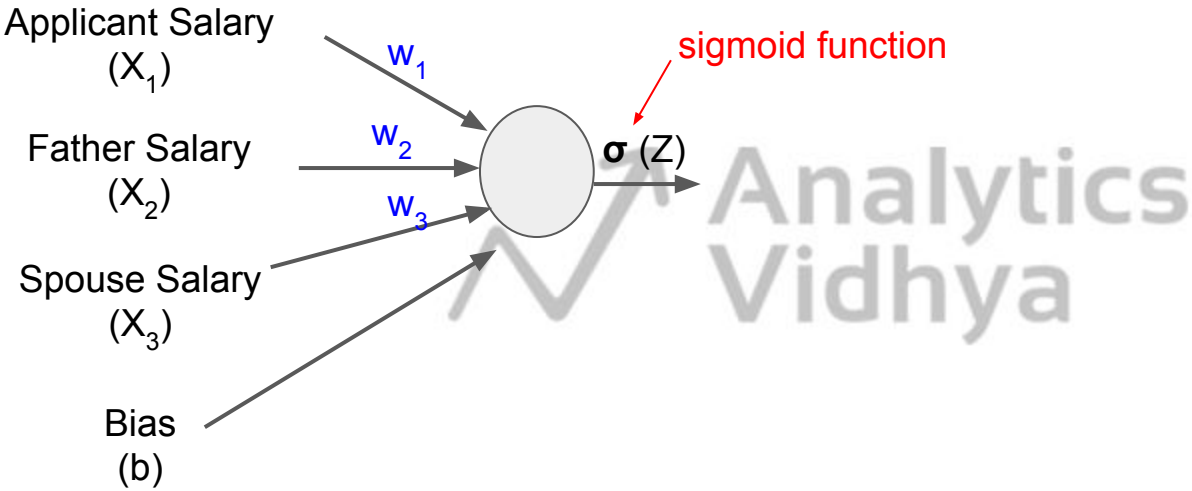
$\hat{Y}$ (output) = **step** (Z)

Perceptron Model

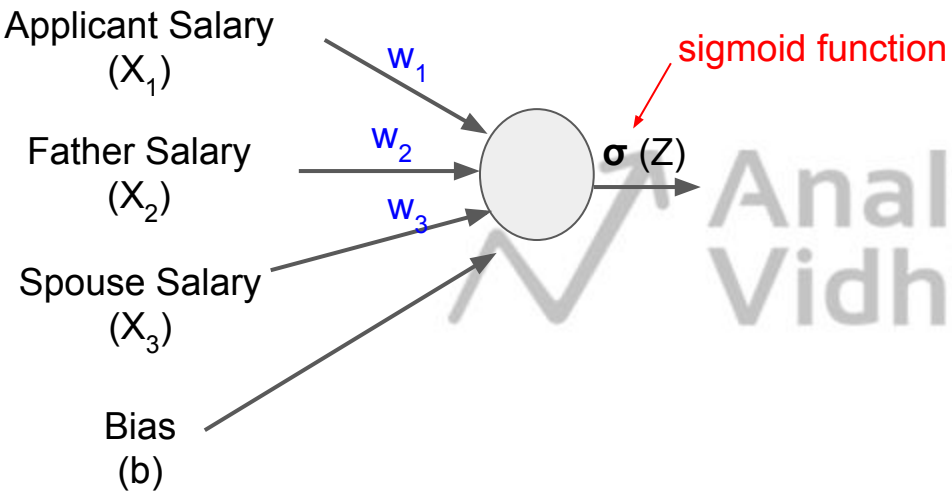


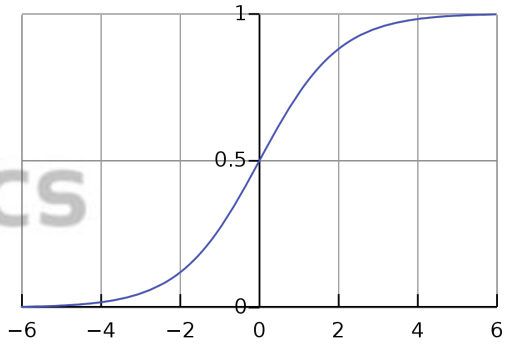
Perceptron Model

Sigmoid Activation Function

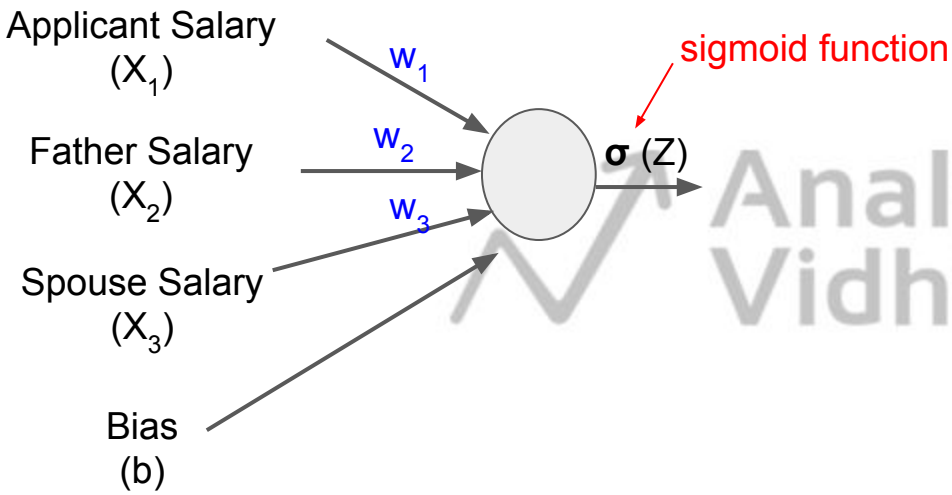


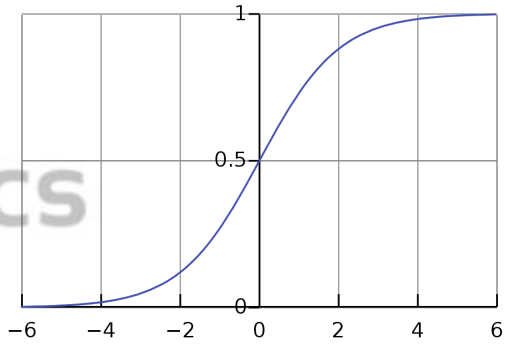
Sigmoid Activation Function





Sigmoid Activation Function



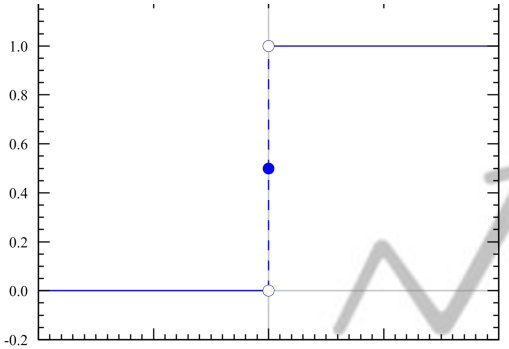


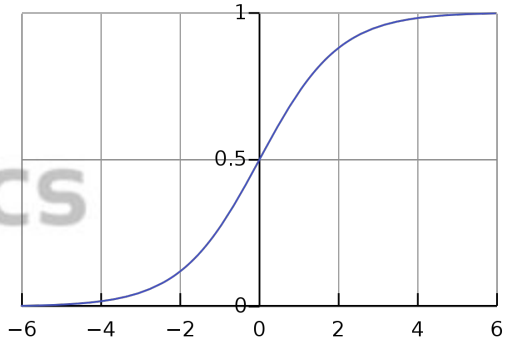
Sum of inputs = $X_1 * w_1 + X_2 * w_2 + X_3 * w_3$

$Z = X_1 * w_1 + X_2 * w_2 + X_3 * w_3 + b$ (bias)

$\hat{Y}$ (output) = σ (Z)

Sigmoid Activation Function





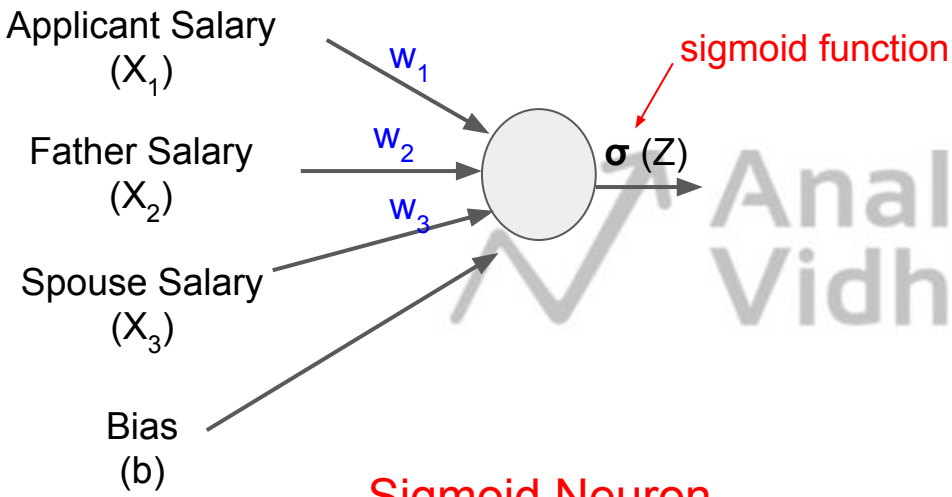
$$\text{Output} = \begin{cases} 1, Z > 0 \\ 0, Z \leq 0 \end{cases}$$

Sum of inputs = $X_1 * w_1 + X_2 * w_2 + X_3 * w_3$

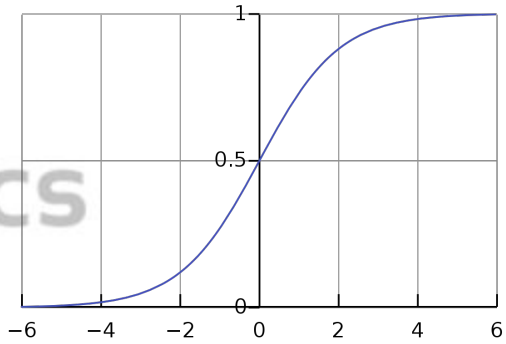
$Z = X_1 * w_1 + X_2 * w_2 + X_3 * w_3 + b$ (bias)

$\hat{Y}$ (output) = $\boldsymbol{\sigma}$ (Z)

Sigmoid Activation Function



Sigmoid Neuron



Sum of inputs = $X_1 * w_1 + X_2 * w_2 + X_3 * w_3$

$Z = X_1 * w_1 + X_2 * w_2 + X_3 * w_3 + b$ (bias)

$\hat{Y}$ (output) = σ (Z)

Thank You