Impact of Sigmoid

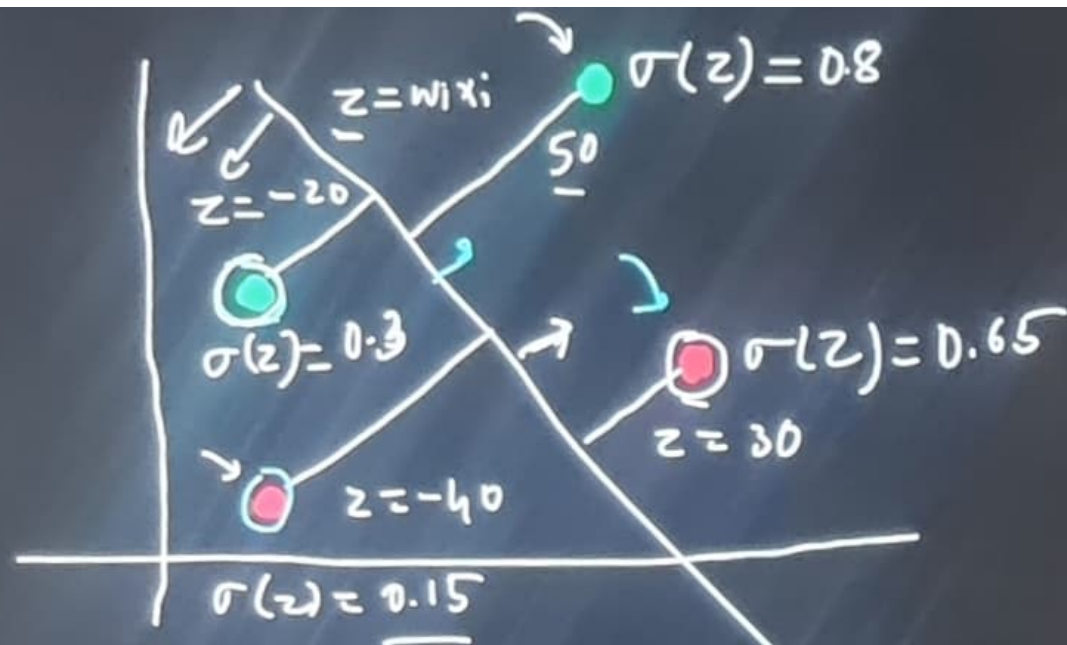$$W_\eta = W_0 + \eta \, (y_i - \hat{y}_i) \, x_i$$

$$\hat{y}_i = \sigma(z)$$

$$\text{where } z = \sum w_i x_i$$

$$W_\eta = W_0 + \eta \times 0.2 \times x_i$$

$$W_\eta = W_0 - \eta \times 0.65 \times x_i$$

$$W_\eta = W_0 + \eta \times 0.7 \times x_i$$

$$w_\eta = w_0 - \eta \times 0.15 \times x_i$$

$z = w_i x_i$

$z = -20$

$\sigma(z) = 0.3$

$z = -40$

$\sigma(z) = 0.15$

$\sigma(z) = 0.8$

50

$\sigma(z) = 0.65$

$z = 30$

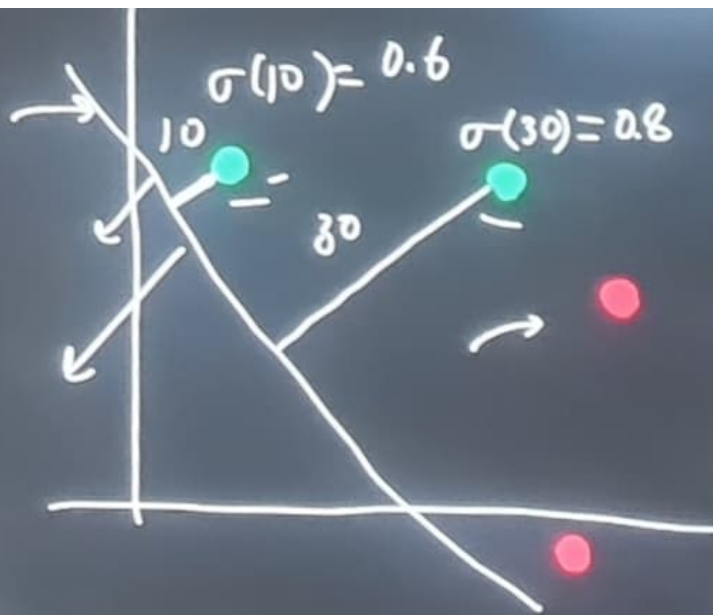| y_i	$\hat{y}_i$	$\rightarrow$	$y_i - \hat{y}_i$
1	0.8		0.2
0	0.65		- 0.65
1	0.3		0.7
0	0.15		- 0.15

$$W_\eta = W_0 + \eta(y_i - \hat{y}_i)x_i$$

$$\hat{y}_i = \sigma(z)$$

where $z = \sum W_i x_i$

1°

$$W_\eta = W_0 + \boxed{\eta * 0.4 * x_i} = x_1$$

$$W_\eta = W_0 + \boxed{\eta * 0.2 * x_i} = x_2$$

$X_1 > X_2$

code implement

$\sigma(10) = 0.6$

10

$\sigma(30) = 0.8$

80

Y_i	$\hat{Y}_i$	$X_i - Y_i$
1	0.6	0.4
1	0.8	0.2
0		
0		