Roll NO - D002

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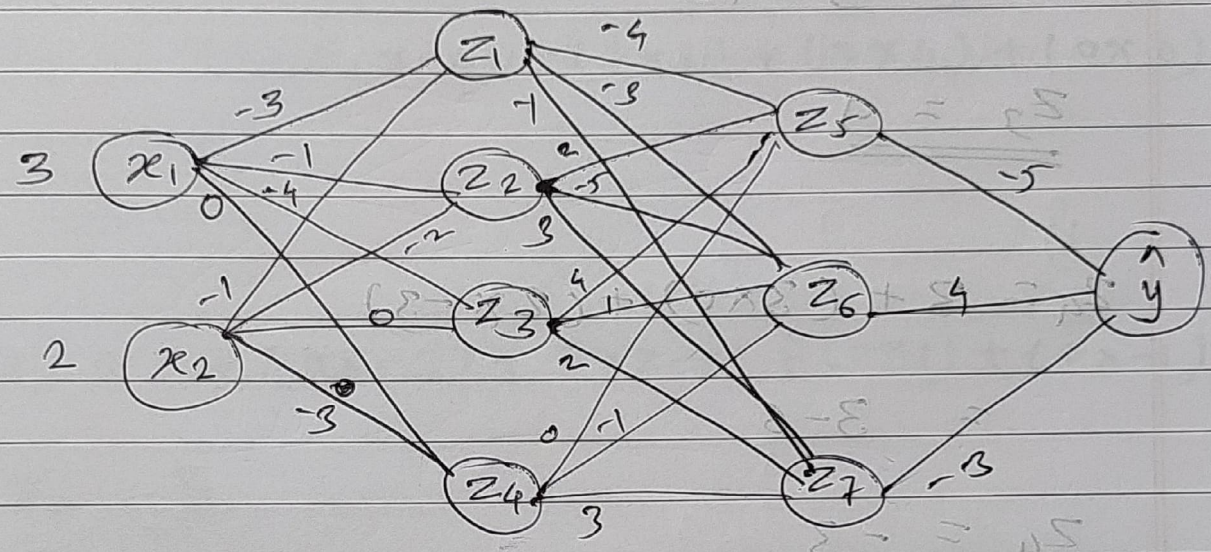
WORLD STAR™ Date: Page:

Assignment 1.1



$$z_1 = w_0 + \sum_{i=1}^{n} w_i x_i ,$$

Hidden Layer 1

$$z_1 = 3 + (3 \times -3) + (2 \times -1)$$

$$= 3 + (-9) + (-2)$$

$$z_1 = -8$$

$$z_2 = 3 + (2 \times -2) + (3 \times -1)$$

$$= 3 - 4 - 3$$

$$z_2 = -4$$

$$z_3 = 3 + (3 \times -4) + (2 \times 0)$$

$$= 3 - 12$$

$$\underline{\underline{z_3 = 9}}$$

$$z_4 = 3 + (3 \times 0) + (2 \times -3)$$

$$= 3 - 6$$

$$\underline{\underline{z_4 = -3}}$$

Here apply Activation function to the each neuron

$$\text{Relu} = \max(0, z)$$

$$z_1 = \text{Relu}(0, -8) = \max(0, -8) = 0$$

$$z_2 = \text{Relu}(0, -4) = \max(0, -4) = 0$$

$$z_3 = \text{Relu}(0, -9) = \max(0, -9) = 0$$

$$z_4 = \text{Relu}(0, -3) = \max(0, -3) = 0$$

* Hidden Layer 2.

$z_5 = 3 + (0 \times -4) + (0 \times 2) + (0 \times 4) + (0 \times 0)$

$z_5 = 3$

$z_6 = 3 + (0 \times -3) + (0 \times -5) + (0 \times 1) + (0 \times -1)$

$z_6 = 3$

$z_7 = 3 + (0 \times -1) + (0 \times 3) + (0 \times 2) + (0 \times -3)$

$z_7 = 3$

* Activation Function

$z_5 = Relu(0, 3) = max(0, 3) = 3$

$z_6 = Relu(0, 3) = max(0, 3) = 3$

$z_7 = Relu(0, 3) = max(0, 3) = 3$

$\hat{y} = 3 + (3 \times -5) + (3 \times 4) + (3 \times -3)$

$= 3 - 15 + 12 - 9$

$$\hat{y} = -9$$

apply activation function

$$\hat{y} = \frac{1}{1 + e^{-(-9)}}$$

$$= \frac{1}{1 + e^{9}}$$

$$= 0.0001233q$$