

Perceptron Homework Assignment: Fill in the cells to get the weights after step 5

Index	Pattern				Target	Weight Vector				Net Output	LR	Error	Multiplier (Target - Z) x LR	ΔW				Wnew				
	x1	x2	x3	bias		w1	w2	w3	bias					w1	w2	w3	bias	w1	w2	w3	bias	
0	1	0.1	0.1	1	0	0.35	-0.2	-0.1	0.25	0.57	1	0.25	True (-1)	-0.25	-0.25	-0.025	-0.025	-0.25	.1	-0.225	-0.125	0
1	0.9	0.1	0.5	1	1	.1	-0.225	-0.125	0	.005	1	0.25	False (0)	0	0	0	0	0	.1	-0.225	-0.125	0
2	0.1	0.1	0.1	1	0	.1	-0.225	-0.125	0	-0.25	0	0.25	0	0	0	0	0	0	.1	-0.225	-0.125	0
3	0.1	0.1	0.5	1	1	.1	-0.225	-0.125	0	-0.05	0	0.25	1	.25	.025	.025	.125	.25	.125	-0.2	0	-0.25
4	0.1	1	0.2	1	0	.05	-0.2	0	.25	.0625	1	0.25	-1	-0.25	-0.025	-0.25	-0.05	-0.25	.1	-0.45	-0.05	0
5	0.1	0.9	0.6	1	1	.1	-0.45	-0.05	0	-0.425	0	0.25	1	.25	.025	.225	.15	.25	.125	-0.225	.1	1.25

$$\text{Error} = \text{target} - Z$$

$$\text{Multiplier} = (\text{target} - Z) \times \text{LR}$$

$$\Delta W = \text{Multiplier} \cdot x_i$$

$$w_{\text{new}} = w_i + \Delta w_i$$

$$Z = 1 \quad \text{if} \quad \text{Net} \geq 0$$

$$Z = 0 \quad \text{if} \quad \text{net} < 0$$

$$\text{Net output} = x_1 \times w_1 + x_2 \times w_2 + x_3 \times w_3 + \text{Bias} \times \text{Bias weight}$$