

From the previous calculation:

$$\frac{\partial E_{total}}{\partial out\ h_1} = 0.036350306$$

$$out\ h_1 = 0.5933$$

$$\frac{\partial out\ h_1}{\partial net\ h_1} = out\ h_1 (1 - out\ h_1) = 0.2413$$

$$i_1 = 0.05 \quad \text{learning rate } \eta = 0.5$$

$$i_2 = 0.10 \quad \frac{\partial E_{total}}{\partial w_1} = 0.036350306 * 0.2413 * 0.05 = 0.00044 \rightarrow w_1 = 0.15 - 0.5 * 0.00044 = 0.1498$$

w₂

$$\frac{\partial E_{total}}{\partial w_2} = \frac{\partial E_{total}}{\partial out\ h_1} \cdot \frac{\partial out\ h_1}{\partial net\ h_1} \cdot \frac{\partial net\ h_1}{\partial w_2}$$

$$\frac{\partial net\ h_1}{\partial w_2} = i_2 = 0.10$$

$$\frac{\partial E_{total}}{\partial w_2} = 0.036350306 * 0.2413 * 0.10 = 0.00088$$

$$w_2 = 0.20 - 0.5 * 0.00088 = 0.19956$$

w₃

$$\frac{\partial E_{total}}{\partial out\ h_2} = 0.042746$$

$$\frac{\partial out\ h_2}{\partial net\ h_2} = 0.2406 \quad \text{using } out\ h_2 = 0.5969$$

$$i_1 = 0.05$$

$$\frac{\partial E_{total}}{\partial w_3} = 0.042746 * 0.2406 * 0.05 = 0.0005137$$

$$w_3 = 0.25 - 0.5 * 0.0005137 = 0.24974$$

w₄

$$\frac{\partial net\ h_2}{\partial w_4} = i_2 = 0.10$$

$$\frac{\partial E_{total}}{\partial w_4} = 0.042746 * 0.2406 * 0.10 = 0.001027$$

$$w_4 = 0.30 - 0.5 * 0.001027 = 0.29949$$

$$w_1 = 0.1498$$

$$w_2 = 0.19956$$

$$w_3 = 0.24974$$

$$w_4 = 0.29949$$