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BP Hw

Starting weights

$w_{52} = 1$ $w_{62} = 1$ $w_{72} = 1.00113$

$w_{53} = 1$ $w_{63} = 1$ $w_{73} = 1.00113$

$w_{21} = 1.00420$ $w_{31} = 1.00420$ $w_{41} = 1.00575$

Input 0 1 Target 0

$net_2 = (1 \cdot 0 + 1 \cdot 1 + 1.00113 \cdot 1) = 2.00113$

$net_3 = (1 \cdot 0 + 1 \cdot 1 + 1.00113 \cdot 1) = 2.00113$

$O_2 = \frac{1}{1 + e^{-2.0011}} = 0.881$

$O_3 = \frac{1}{1 + e^{2.0011}} = 0.881$

$O_4 = 1$

$net_1 = (1.0042 \cdot 0.881 + 1.0042 \cdot 0.881 + 1.00575 \cdot 1) = 2.775$

$O_1 = \frac{1}{1 + e^{-2.775}} = 0.941$

$\delta_1 = (0 - 0.941) \cdot (0.941 (1 - 0.941)) = -0.0522$

$\Delta w_{21} = 1 \cdot -0.0522 \cdot 0.881 = -0.046$

$\Delta w_{31} = 1 \cdot -0.0522 \cdot 0.881 = -0.046$

$\Delta w_{41} = 1 \cdot -0.0522 \cdot 1 = -0.0522$

$\delta_2 = (-0.0522 \cdot 1.0042) \cdot (0.881 \cdot (1 - 0.881)) = -0.00550$

$\delta_3 = (-0.0522 \cdot 1.0042) \cdot (0.881 \cdot (1 - 0.881)) = -0.00550$

$\Delta w_{52} = 1 \cdot -0.0055 \cdot 0 = 0$

$\Delta w_{62} = 1 \cdot -0.0055 \cdot 1 = -0.0055$

$\Delta w_{72} = 1 \cdot -0.0055 \cdot 1 = -0.0055$

$\Delta w_{53} = 1 \cdot -0.0055 \cdot 0 = 0$

$\Delta w_{63} = 1 \cdot -0.0055 \cdot 1 = -0.0055$

$\Delta w_{73} = 1 \cdot -0.0055 \cdot 1 = -0.0055$

Final weights

$w_{52} = 1$ $w_{21} = 0.958$

$w_{53} = 1$ $w_{31} = 0.958$

$w_{62} = 0.995$ $w_{41} = 0.954$

$w_{63} = 0.995$

$w_{72} = 0.996$

$w_{73} = 0.996$