

CS 760 – HW4

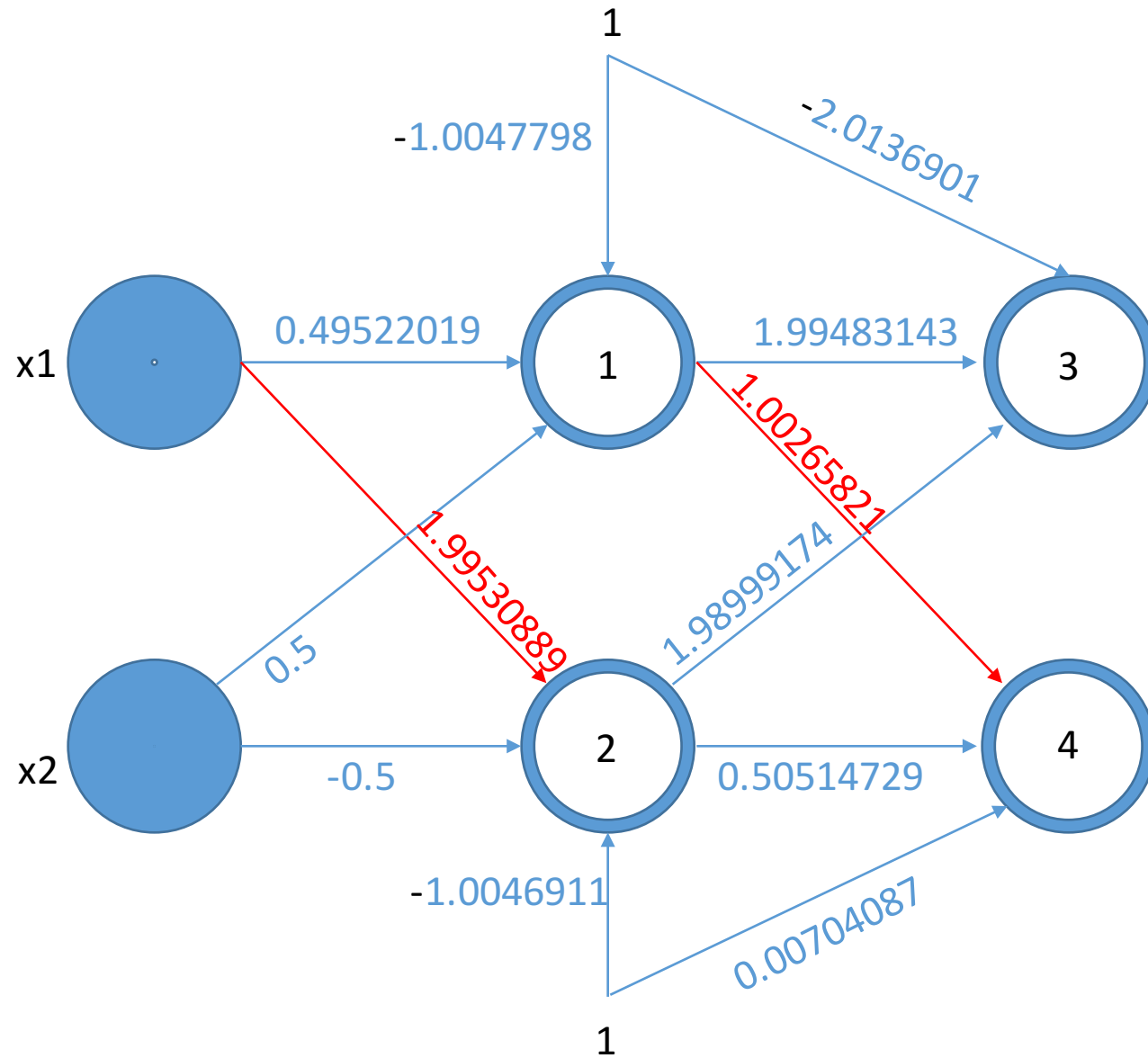
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Q1

Formula used:

1. Weight updates = $w + \Delta w$
2. $o = 1 / (1 + e^{-x})$
3. $\Delta w = (\text{learning rate}) * \delta * o$
4. a) $\delta = o * (1-o) * (y_{\text{trainSet}} - o)$ [For output units]
b) $\delta = o * (1-o) * \sum \delta_k w_{kj}$

Q1 – Final Weights



Q1 – Intermediate calculations

o1	0.37754067
o2	0.73105858
o3	0.55408716
o4	0.67766681

del3	-0.1369009	del1	-0.0477981
del4	0.07040869	del2	-0.0469111

w3bias	-2.0136901
w31	1.99483143
w32	1.98999174
w4bias	0.00704087
w41	1.00265821
w42	0.50514729

w1x1	0.49522019
w1x2	0.5
w2x1	1.99530889
w2x2	-0.5
w1bias	-1.0047798
w2bias	-1.0046911

Q2

