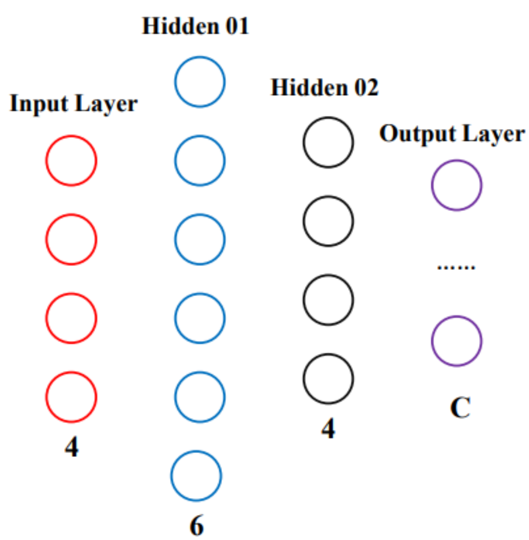
BACK PROPAGATION

Input $\boldsymbol{X}(\mathbf{4} \times \boldsymbol{N})$

Output $\boldsymbol{A}_2(\boldsymbol{C} \times \boldsymbol{N})$



$$dZ_2^{[C\times N]} = (A_2 - Y)$$

$$dW_2^{[4\times C]} = \frac{1}{N}.dot(A_1^{[4\times N]}, dZ_2^{T[C\times N]})$$

$$db_2^{[Cx1]} = \frac{1}{N}.sum(dZ_2^{[C\times N]}, axis = 1)$$

$$dZ_1^{[4\times N]} = dot\left(W_2^{[4\times C]}, dZ_2^{[C\times N]}\right) * f'(Z_1)^{[4\times N]}$$

$$dW_1^{[6\times 4]} = \frac{1}{N}.dot(A_0^{[6\times N]}, dZ_1^{T[N\times 4]})$$

$$db_1^{[4\times 1]} = \frac{1}{N}.sum(dZ_1^{[4\times N]}, axis = 1)$$

$$dZ_0^{[6\times N]} = dot\left(W_1^{[6\times 4]}, dZ_1^{[4\times N]}\right) * f'(Z_0)^{[6\times N]}$$

$$dW_0^{[4\times 6]} = \frac{1}{N}.dot(X^{[4\times N]}, dZ_0^{T[N\times 6]})$$

$$db_1^{[6\times 1]} = \frac{1}{N}.sum(dZ_0^{[6\times N]}, axis = 1)$$