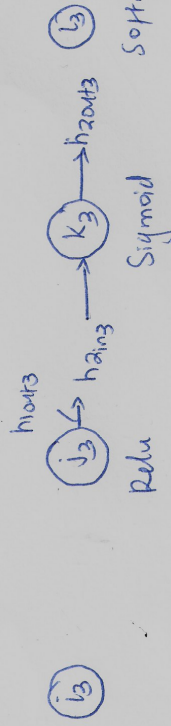
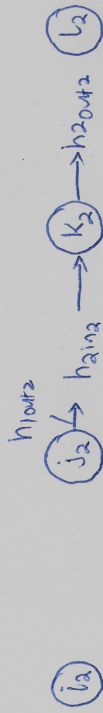
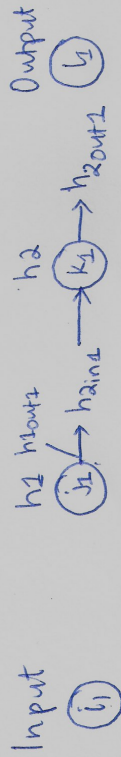


Layer - 2



$$\begin{bmatrix} h_{1out1} & h_{1out2} & h_{1out3} \end{bmatrix} \times \begin{bmatrix} w_{j1k1} & w_{j1k2} & w_{j1k3} \\ w_{j2k1} & w_{j2k2} & w_{j2k3} \\ w_{j3k1} & w_{j3k2} & w_{j3k3} \end{bmatrix} + \begin{bmatrix} b_{k1} & b_{k2} & b_{k3} \end{bmatrix} = \begin{bmatrix} h_{ain1} & h_{ain2} & h_{ain3} \end{bmatrix}$$

For the second layer, we use the sigmoid activation function:

Sigmoid is given by: $\frac{1}{1+e^{-x}}$

$$\begin{bmatrix} h_{2out1} & h_{2out2} & h_{2out3} \end{bmatrix} = \frac{1}{1+e^{-x}} = \frac{1}{1+e^{-h_{ain1}}} \quad \frac{1}{1+e^{-h_{ain2}}} \quad \frac{1}{1+e^{-h_{ain3}}}$$

$$\begin{bmatrix} 1.35 & 1.27 & 1.8 \end{bmatrix} \times \begin{bmatrix} 0.2 & 0.3 & 0.5 \\ 0.3 & 0.5 & 0.7 \\ 0.6 & 0.4 & 0.8 \end{bmatrix} + \begin{bmatrix} 1.0 & 1.0 & 1.0 \end{bmatrix} = \begin{bmatrix} 2.73 & 2.76 & 4.004 \end{bmatrix}$$

$$\begin{bmatrix} h_{2out1} & h_{2out2} & h_{2out3} \end{bmatrix} = \begin{bmatrix} \frac{1}{1+e^{-2.73}} & \frac{1}{1+e^{-2.76}} & \frac{1}{1+e^{-4.004}} \end{bmatrix}$$

$$= \begin{bmatrix} 0.938 & 0.94 & 0.98 \end{bmatrix}$$