

Standard Feed Forward System:

$$\vec{x}^{(l+1)} = f \left[\hat{W}^{(l)} \vec{x}^{(l)} + \vec{b}^{(l)} \right] \quad (1)$$

$$\vec{x}^{(l+1)} = f \left[A(\hat{W}^{(l)} \vec{x}^{(l)}) + \vec{b}^{(l)} \right] \quad (2)$$

Arbitrary layer l with n neurons

$$\vec{x}^{(l)} = \begin{bmatrix} x_0^{(l)} \\ x_1^{(l)} \\ \vdots \\ x_{n-2}^{(l)} \\ x_{n-1}^{(l)} \end{bmatrix} \quad (3)$$