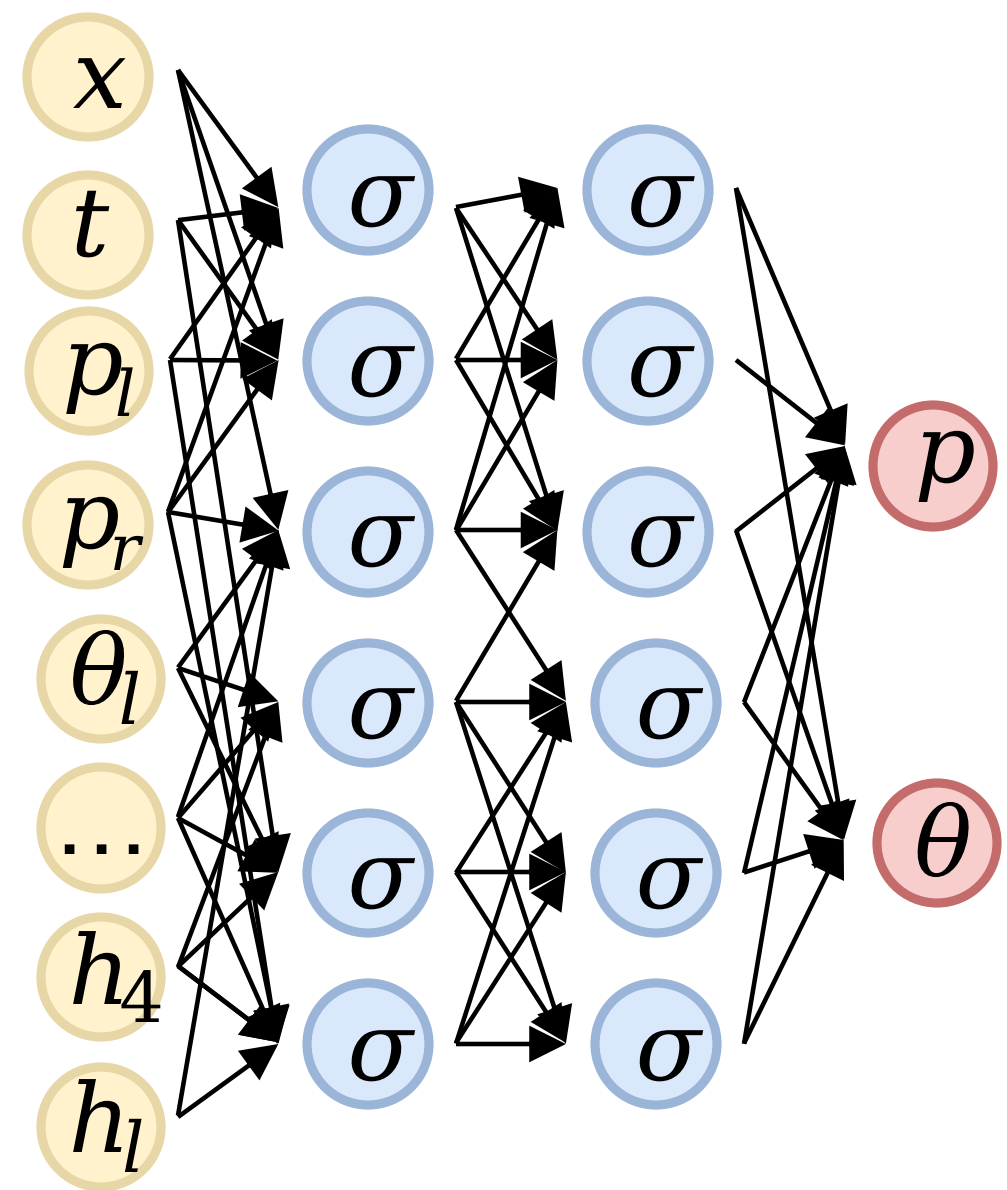


Evaluate NN



AD

$$\frac{\partial p}{\partial x} \quad \frac{\partial^2 p}{\partial x^2}$$

$$\frac{\partial \theta}{\partial x}$$

Calculate Loss Tensor

$$p + \theta - \sqrt{p^2 + \theta^2} = \mathcal{L}_{FB}$$

$$\dots = \mathcal{L}_{Residual}$$

$$p_{B,NN} - p_{BC} + \theta_{B,NN} - \theta_{BC} = \mathcal{L}_{BC}$$

$$\theta_{I,NN} - \theta_{IC} = \mathcal{L}_{IC}$$

$$\dots = \mathcal{L}_{SC}$$

Final Loss

$$|\mathcal{L}_{FB}|_2^2 = \mathcal{L}_{FB}$$

$$|\mathcal{L}_{Residual}|_2^2 = \mathcal{L}_{Residual}$$

$$|\mathcal{L}_{BC}|_2^2 = \mathcal{L}_{BC}$$

$$|\mathcal{L}_{IC}|_2^2 = \mathcal{L}_{IC}$$

$$|\mathcal{L}_{SC}|_2^2 = \mathcal{L}_{SC}$$