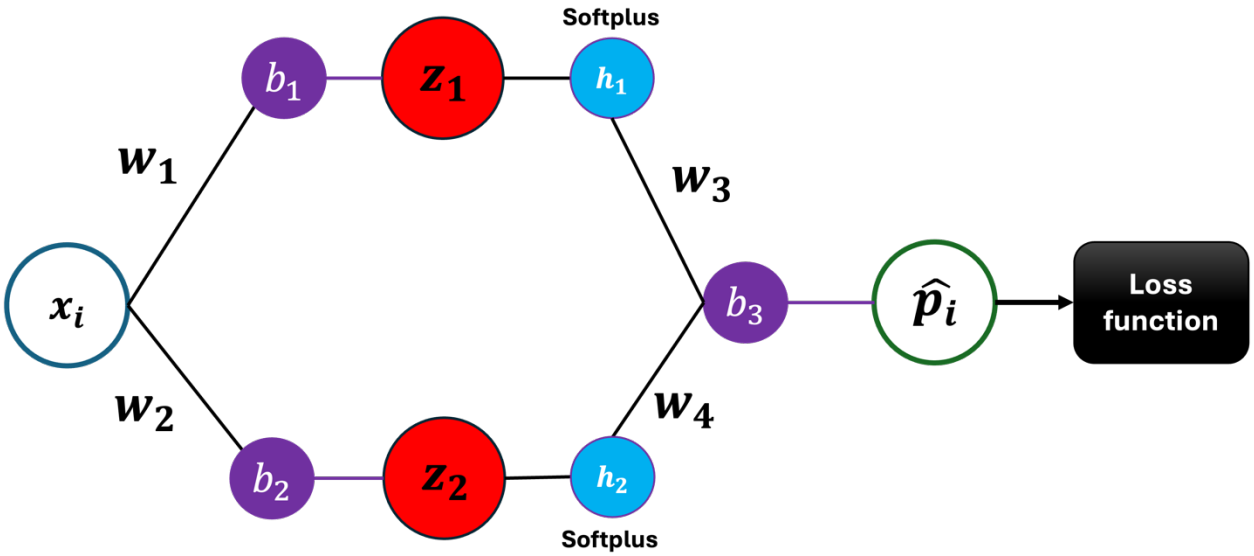
EXERCISE 2



Loss function:

$$\boldsymbol{loss} = \sum_{i=1}^{n=3} (y_i - \hat{p}_i)^2$$

Activation function:

$$\boldsymbol{h_1} = \ln(1 + e^{\boldsymbol{z_1}})$$

$$\boldsymbol{h_2} = \ln(1 + e^{\boldsymbol{z_2}})$$

Given the neural network, activation functions and loss functions

1. Find the derivative of loss with respect to $\boldsymbol{w_4}$.

$$\frac{\boldsymbol{d\ loss}}{\boldsymbol{d\ w_4}} = ?$$

2. Find the derivative of loss with respect to $\boldsymbol{b_2}$

$$\frac{\boldsymbol{d\ loss}}{\boldsymbol{d\ b_2}} = ?$$