

$$\frac{dy}{dh_i} = \frac{dy}{dh_i} \frac{dh_i}{du_i} + \frac{dy}{dh_i} \frac{dh_i}{du_2} + \frac{dy}{dh_i} \frac{dh_i}{du_3} + \frac{dy}{dh_i} \frac{dh_i}{du_4}$$

$$y = w_5 h_1 + w_6 h_2 + b_3$$

$$\frac{dy}{du_i} + \frac{dy}{du_6} =$$

$$h_1 + h_2 + w_5 \cdot u_1 + w_5 u_2 + w_6 u_3 + w_6 u_4 =$$

$$h_1 + h_2 \quad u_i = \begin{cases} 1 & \text{for} \end{cases}$$

$$\frac{dy}{du_1} = \frac{dy}{dh_1}$$

$$\frac{dy}{db_i} = w_5 \text{ if } w_1 x_1 + w_2 x_2 + b_i > 0$$

$$\text{or else, } 0$$

$$\frac{dy}{db_2} = w_6 \text{ if } w_3 x_1 + w_4 x_2 + b_2 > 0$$

$$\frac{dy}{db_2} = 0 + 0 + 1 \text{ if } b_1 = 1$$

