$$\epsilon_L = \frac{dL}{d\hat{y}}$$

$$\boxed{\epsilon_L}$$

$$\frac{dW_4}{dt} = \frac{dL}{dW_4} = \epsilon_L f(x_3) \qquad \hat{y} = W_4 f(x_3)$$

$$\frac{d\Psi_4}{dt} = f(x_3)\epsilon_L^T$$

$$W_4 \qquad \Psi_4$$

$$f'(x_3) \quad f(x_3)$$

$$x_3 = W_3 f(x_2) \qquad x_3 \qquad I_3 \qquad I_3 \approx \frac{dL}{dx_3} = \epsilon_L \Psi_4 f'(x_3)$$

$$\frac{dW_3}{dt} = \frac{dL}{dW_3} = I_3 f(x_2) \qquad W_3$$

$$\Psi_3 \qquad \frac{d\Psi_3}{dt} = f(x_2)I_3^T$$

$$x_2 = W_2 f(x_1) \qquad f(x_2) \quad f'(x_2)$$

$$x_2 \qquad I_2 \qquad I_3 \approx \frac{dL}{dx_2} = I_3 \Psi_3 f'(x_2)$$

$$\frac{dW_2}{dt} = \frac{dL}{dW_2} = I_2 f(x_1) \qquad W_2$$

$$\Psi_2 \qquad \frac{d\Psi_2}{dt} = f(x_1)I_2^T$$

$$f'(x_1) \quad f(x_1)$$

$$x_1 \qquad I_1 \qquad I_3 \approx \frac{dL}{dx_1} = I_2 \Psi_2 f'(x_1)$$