0: Input layer 1: Hidden layer 2: Output layer
$$a_1^1 = \sigma^1(\widehat{w_{11}^1x_1 + w_{12}^1x_2 + w_{13}^1x_3 + b_1^1})$$

$$x_1 \longrightarrow \widehat{w_{12}^1}$$

$$x_2 \longrightarrow \widehat{w_{13}^1}$$

$$x_2 \longrightarrow \widehat{w_{13}^2}$$

$$x_3 \longrightarrow \widehat{w_{13}^2}$$

$$x_4 \longrightarrow \widehat{w_{12}^2}$$

$$x_1 \longrightarrow \widehat{w_{12}^2}$$

$$x_2 \longrightarrow \widehat{w_{13}^2}$$

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Loss: $L(y_1, y_2; \hat{y}_1, \hat{y}_2); L = 2$ is the last layer