

neuron input : $z = \sum_{i=1}^{\infty} x_i w_i + b$

Sigmoid : $g(z) = \frac{1}{1+e^{-z}}$

$$g'(z) = g \cdot (1-g)$$

hypothesis (y) : $y = \frac{1}{1+e^{-(w^T x + b)}}$

Cost Func : $\mathcal{L}(w) = -t \log(y) - (1-t) \log(1-y)$

$$\mathcal{L}'(w) = \frac{1}{n} x^T \underbrace{(t-y)}_{\frac{d\mathcal{L}}{dz}}$$