**Logistic regression** (逻辑回归):

$$\hat{y} = \sigma\left(w^T x + b\right), \text{ where } \sigma(z) = \frac{1}{1 + e^{-z}}$$

**Cost function** (损失函数):

$$J(w, b) = \sum_{i=1}^{m} \mathcal{L}\left(\hat{y}^{(i)}, y^{(i)}\right) = -\frac{1}{m} \sum_{i=1}^{m} \left(y^{(i)} \operatorname{Log}[\hat{y}^{(i)}] + \left(1 - y^{(i)}\right) \operatorname{Log}\left[1 - \hat{y}^{(i)}\right]\right)$$

对数 对数

**Gradient Descemt** (梯度下降法):

梯度向量

**Repeat** {

$$w := w - \alpha * \frac{\partial J(w, b)}{\partial w};$$

$$b := b - \alpha * \frac{\partial J(w, b)}{\partial b}$$

}