



deeplearning.ai

# Basics of Neural Network Programming

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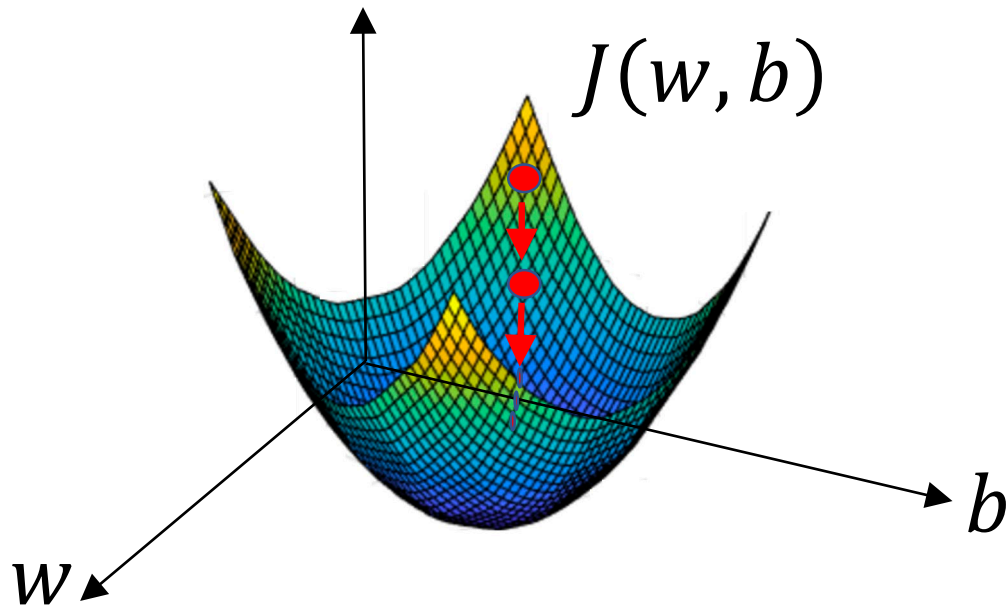
## Gradient Descent

# Gradient Descent

$$\text{Recap: } \hat{y} = \sigma(w^T x + b), \quad \sigma(z) = \frac{1}{1 + e^{-z}}$$

$$J(w, b) = \frac{1}{m} \sum_{i=1}^m \mathcal{L}(\hat{y}^{(i)}, y^{(i)}) = -\frac{1}{m} \sum_{i=1}^m y^{(i)} \log \hat{y}^{(i)} + (1 - y^{(i)}) \log(1 - \hat{y}^{(i)})$$

Want to find  $w, b$  that minimize  $J(w, b)$



# Gradient Descent

