

### deeplearning.ai

# Basics of Neural Network Programming

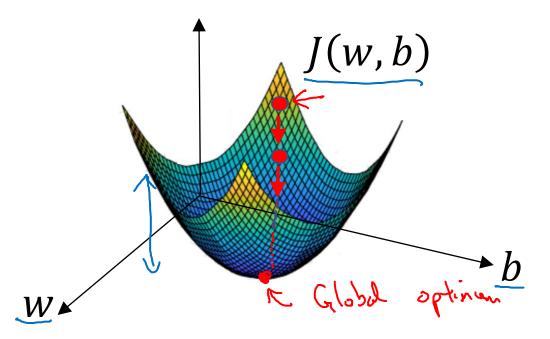
## **Gradient Descent**

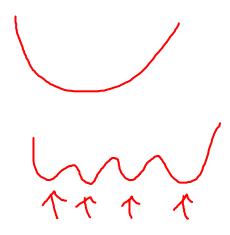
### Gradient Descent

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

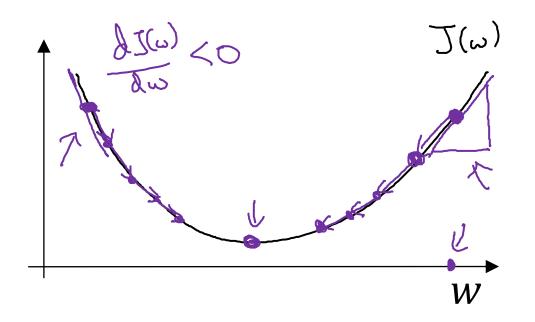
$$\underline{J(w,b)} = \frac{1}{m} \sum_{i=1}^{m} \mathcal{L}(\hat{y}^{(i)}, y^{(i)}) = -\frac{1}{m} \sum_{i=1}^{m} y^{(i)} \log \hat{y}^{(i)} + (1 - y^{(i)}) \log(1 - \hat{y}^{(i)})$$

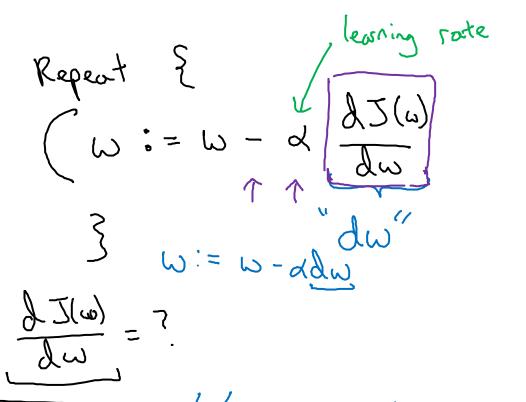
Want to find w, b that minimize J(w, b)





## Gradient Descent





Andrew Ng