



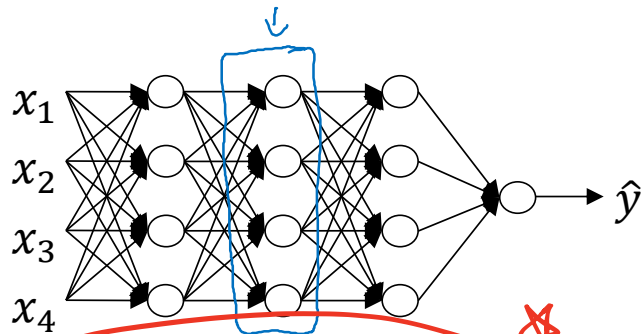
deeplearning.ai

# Deep Neural Networks

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Building blocks of  
deep neural networks

# Forward and backward functions



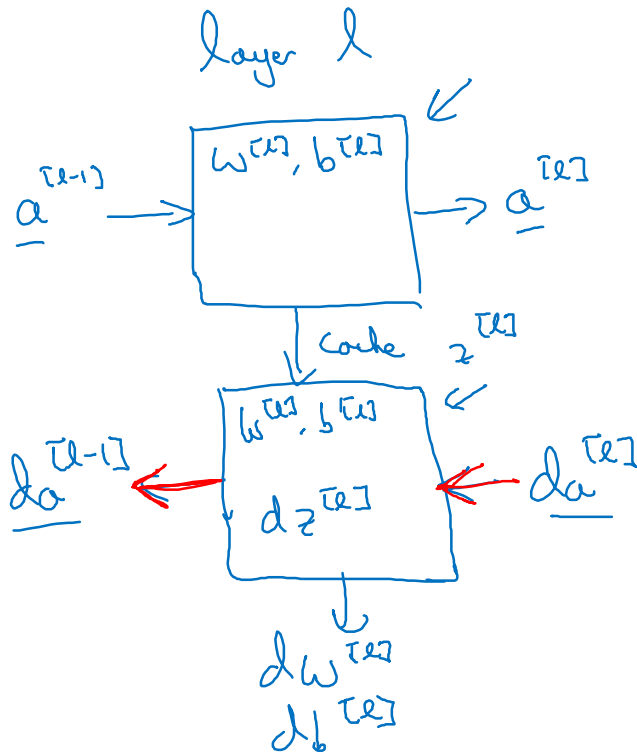
layer  $l$ :  $W^{[l]}, b^{[l]}$

→ Forward: Input  $a^{[l-1]}$ , output  $a^{[l]}$

$$z^{[l]} = W^{[l]} a^{[l-1]} + b^{[l]} \quad \text{cache } z^{[l]}$$

$$a^{[l]} = g^{[l]}(z^{[l]})$$

→ Backward: Input  $da^{[l]}$ , output  $da^{[l-1]}$   
cache  $(z^{[l]})$   
 $\frac{dL}{dz^{[l]}}$   
 $\frac{dL}{db^{[l]}}$



# Forward and backward functions

