



## Deep Neural Network

- ✓ **Video:** Deep L-layer Neural Network  
5 min
- ✓ **Video:** Forward Propagation in a Deep Network  
7 min
- ✓ **Video:** Getting your Matrix Dimensions Right  
11 min
- ✓ **Video:** Why Deep Representations?  
10 min
- ✓ **Video:** Building Blocks of Deep Neural Networks  
8 min
- ✓ **Video:** Forward and Backward Propagation  
10 min
- ✓ **Video:** Parameters vs Hyperparameters  
7 min
- 📖 **Reading:** Clarification For: What does this have to do with the brain?  
1 min
- ▶ **Video:** What does this have to do with the brain?  
4 min

## Lecture Notes (Optional)

### Quiz

### Programming Assignments

### References & Acknowledgments



# Clarification For: What does this have to do with the brain?

Note that the formulas shown in the next video have a few typos. Here is the correct set of formulas.

$$dZ^{[L]} = A^{[L]} - Y$$

$$dW^{[L]} = \frac{1}{m} dZ^{[L]} A^{[L-1]T}$$

$$db^{[L]} = \frac{1}{m} np.sum(dZ^{[L]}, axis = 1, keepdims = True)$$

$$dZ^{[L-1]} = W^{[L]T} dZ^{[L]} * g'^{[L-1]}(Z^{[L-1]})$$

Note that \* denotes element-wise multiplication)

⋮

$$dZ^{[1]} = W^{[2]T} dZ^{[2]} * g'^{[1]}(Z^{[1]})$$

$$dW^{[1]} = \frac{1}{m} dZ^{[1]} A^{[0]T}$$

Note that  $A^{[0]T}$  is another way to denote the input features, which is also written as  $X^T$

$$db^{[1]} = \frac{1}{m} np.sum(dZ^{[1]}, axis = 1, keepdims = True)$$

Mark as completed

