Neural Networks: Learning

4/5 points earned (80%)

Quiz passed!

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1 / 1 points

1.
You are training a three layer neural network and would like to use backpropagation to compute the gradient of the cost function. In the backpropagation algorithm, one of the steps is to update

$$\Delta_{ij}^{(2)} := \Delta_{ij}^{(2)} + \delta_i^{(3)} * (a^{(2)})_j$$

for every i, j. Which of the following is a correct vectorization of this step?

0 / 1 points

points

2.

Suppose `Theta1` is a 5x3 matrix, and `Theta2` is a 4x6 matrix. You set `thetaVec = [Theta1(:); Theta2(:)]`. Which of the following correctly recovers `Theta2`?

1 / 1 points

3.

Let $J(\theta) = 3\theta^3 + 2$. Let $\theta = 1$, and $\epsilon = 0.01$. Use the formula $\frac{J(\theta+\epsilon)-J(\theta-\epsilon)}{2\epsilon}$ to numerically compute an approximation to the derivative at $\theta = 1$. What value do you get? (When $\theta = 1$, the true/exact derivative is $\frac{dJ(\theta)}{d\theta} = 9$.)

1 / 1 points

4.

Which of the following statements are true? Check all that apply.

1 / 1 points

5.

Which of the following statements are true? Check all that apply.