Quiz 4

Due No due date **Points** 4 **Questions** 4 **Time Limit** 30 Minutes
Allowed Attempts Unlimited

TAKE THE QUIZ AGAIN

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	5 minutes	3 out of 4

Correct answers are hidden.

Score for this attempt: **3** out of 4
Submitted Feb 4 at 7:03pm
This attempt took 5 minutes.

Question 1

1 / 1 pts

Which of the following statements are true with respect to Neural Networks? Check all that apply.

☐ Neural Network can be used to classify data with linear decision boundary only.

☑ By increasing the number of hidden layers, we can more closely approximate a function.

☑ Neural Network can be used to classify data with non-linear decision boundary.

☐ The number of nodes in the output layer of the Neural Network must be always one.

Question 2

1 / 1 pts

If you are using Neural Network to classify handwritten digits from 0 to 9, then how many nodes should be there in the output layer?

○ 1

○ 2

● 10

○ 9

Incorrect

Question 3

0 / 1 pts

Let a_i represents activation of layer i, a_{ij} represents activation of node j in layer i, Θ_i represents the weighing matrix from layer i to layer $i+1$ and $g(z)$ be the sigmoid activation function. For a two layer Neural Network with three nodes in the input layer(excluding the bias) and two nodes in the output layer, check all that apply.

The steps for forward propagation are:

Step1: Add bias a_{10} to a_1.

☐ Step2: $a_2 = g(\Theta_1 * a_1)$

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☐ The dimension of Θ_1 is 2 x 4.

☑ The dimension of Θ_1 is 2 x 3.

Question 4

1 / 1 pts

Suppose you have two training examples $(x_1, y_1), (x_2, y_2)$ where x_i represents the training sample and y_i represents the binary class(either 0 or 1). For example, if we are using images to train a neural network to classify cars from non-cars, then x_i represent the pixels of the image and y_i is 1 if the image is a car and 0 if it is not a car. Which of these is a correct sequence of operations for training the weights of the neural network? (BP = Back Propagation, FP = Forward Propagation)

○

FP using x_1 followed by BP using y_2. Then FP using x_2 followed by BP using y_1.

●

FP using x_1 followed by BP using y_1. Then FP using x_2 followed by BP using y_2.

○

BP using y_1 followed by FP using x_1. Then BP using y_2 followed by FP using x_2.

○

FP using x_1 followed by FP using x_2. Then BP using y_1 followed by BP using y_2.

Quiz Score: **3** out of 4