

Neural Networks: Learning ourserd

**Due** Jan 27, 1:59 AM CST

Graded Quiz • 10 min



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**GRADE** 100%

Neural Networks: Learning

## **Neural Networks: Learning**

LATEST SUBMISSION GRADE



Try again

**DUE** Jan 27, 1:59 AM CST **ATTEMPTS** 3 every 8 hours

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

TO PASS 80% or higher 100% 100%

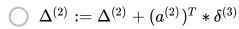
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1/1 point

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

We keep your highest score

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









$$oldsymbol{\Delta}^{(2)} := \Delta^{(2)} + \delta^{(3)} * (a^{(2)})^T$$

$$igtriangledown \Delta^{(2)} := \Delta^{(2)} + (a^{(3)})^T * \delta^{(2)}$$

$$igcap \Delta^{(2)} := \Delta^{(2)} + \delta^{(3)} * (a^{(3)})^T$$





Correct

This version is correct, as it takes the "outer product" of the two vectors  $\delta^{(3)}$ and  $a^{(2)}$  which is a matrix such that the (i,j)-th entry is  $\delta_i^{(3)}*(a^{(2)})_j$  as desired.

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 point

reshape(thetaVec(16:39),4,6)