

Assignment-5 (Quiz) - Results



Attempt 1 of 2

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Attempt Score **1.2 / 2 - 60 %**

Overall Grade (Highest Attempt) **1.6 / 2 - 80 %**

Question 1

The number of hidden layers in a 5-layer neural network is _____.

- ☒ 4
☐ 5
☐ 3
☐ 6

Question 2

The local gradient of an activation layer with layer index 3 of a deep neural network is _____.

- ☒ $\nabla_{\mathbf{z}^{[3]}} (\mathbf{a}^{[3]})$
☐ $\nabla_{\mathbf{a}^{[3]}} (\mathbf{z}^{[3]})$
☐ $\nabla_{\mathbf{z}^{[2]}} (\mathbf{a}^{[3]})$
☐ $\nabla_{\mathbf{a}^{[3]}} (\mathbf{z}^{[2]})$

Question 3

The local gradient of an activation layer (ReLU) with layer index 3 of a deep neural

network with $\mathbf{z}^{[3]} = \begin{bmatrix} -1 \\ -10 \\ 10 \\ 4 \end{bmatrix}$ is _____.

- ✓ ☒ $\begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$
- ☐ $\begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$
- ☐ $\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$
- ☐ $\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}$

Question 4

The gradient flowing backward from the output direction through an activation layer with layer index 3 of a deep neural network is _____.

- ✗ ☐ $\nabla_{\mathbf{z}^{[3]}}(L)$
- ☐ $\nabla_{\mathbf{z}^{[3]}}(\mathbf{a}^{[3]})$
- ☐ $\nabla_{\mathbf{a}^{[2]}}(L)$
- ☒ $\nabla_{\mathbf{a}^{[3]}}(L)$

Question 5

What does $z_5^{[3]}$ represent in a 6-layer deep neural network (layer indexing starts from 0 and node indexing starts from 1)?

- ☐ The raw score calculated by the 5th neuron in hidden layer 2
- ✓ ☒ The raw score calculated by the 5th neuron in hidden layer 3
- ☐ The raw score calculated by the 3rd neuron in hidden layer 5
- ☐ The raw score calculated by the 4th neuron in hidden layer 5

Done