

Submission - 1 | Neural Networks Quiz

There are 11 multiple choice questions. The maximum time allotted is 15 mins. This will count for 5 marks out of the total allotted for this project (the rest are code assignments). The deadline to complete this is September 22nd, 2024, 11:59 PM.

Points: 10/11

✗ **Incorrect** 0/1 Points

1. Which of the following play a major role to achieve a very high level of performance with Deep Learning algorithms?

* 

Multiple choice

- ☒ More data
- ☒ Larger models
- ☐ Smaller models
- ☐ Better designed features

✓ **Correct** 1/1 Points

2. What is the vanishing gradient problem in neural networks?

* 

Single correct

- ☒ Gradients become very small, making learning difficult
- ☐ Gradients become very large, causing instability

- ☐ The network stops training
- ☐ The network overfits the training data

✓ **Correct** 1/1 Points

3. Which of the following are activation functions commonly used in neural networks?

* 

Multiple Choice

- ☒ ReLU
- ☒ Sigmoid
- ☒ Tanh
- ☐ Linear Regression

✓ **Correct** 1/1 Points

4. What is the purpose of an activation function in a neural network? * 

Single choice

- ☒ To introduce non-linearity into the model
- ☐ To initialise weights
- ☐ To normalise input data
- ☐ To reduce overfitting

✓ **Correct** 1/1 Points

5. What is the significance of the learning rate in backpropagation?



Single correct

- ☒ It controls the size of the steps taken to reach the minimum of the loss function
- ☐ It determines the number of layers in the network
- ☐ It initializes the weights of the network
- ☐ It normalizes the input data

✓ **Correct** 1/1 Points


6. Which of the following statements about neural networks is true?



Multiple choice

- ☒ They can approximate any continuous function given sufficient neurons and layers
- ☒ They can be used for both supervised and unsupervised learning tasks
- ☐ They are not used for image recognition tasks

✓ **Correct** 1/1 Points

7. Which of the following are steps involved in backpropagation? * 

Multiple choice

- ☒ Forward pass
- ☒ Backward pass
- ☒ Update parameters

☐ Data normalization

✓ **Correct** 1/1 Points

8. Which of the following are advantages of using transfer learning in neural networks?

* 

Multiple choice

- ☒ Reduced training time
- ☒ Improved performance with limited data
- ☒ Leveraging pre-trained models
- ☐ Eliminates the need for backpropagation

✓ **Correct** 1/1 Points

9. What is the primary purpose of backpropagation in neural networks?

* 

Single Correct

- ☐ To initialise the parameters (weights & bias terms)
- ☐ To add more layers to the NN
- ☐ To prevent overfitting
- ☒ To update the parameters

✓ **Correct** 1/1 Points

10. What is the role of the softmax function in a neural network?

* 

Single choice

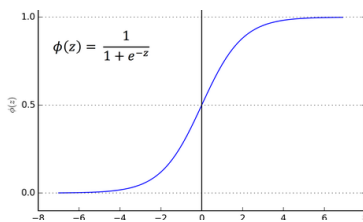
- ☐ To normalize the input values to be between -1 and 1
- ☐ To reduce the dimensionality of the input features
- ☐ To minimise the loss function
- ☒ To convert logits into probabilities

✓ **Correct** 1/1 Points

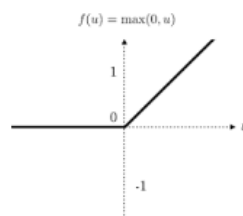
11. Which of the following depicts a ReLU activation function? *



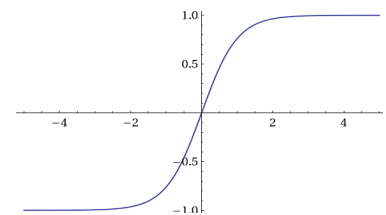
Single choice



☐ Option 1



☒ Option 2



☐ Option 3



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