Machine Learning Quiz

Score: 3 out of 5

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Question 1 of 5 (Multiple Choice)

Which of the following is NOT a common activation function used in neural networks?

A. ReLU (Rectified Linear Unit)

B. Sigmoid

' C. Quantum Activation Function

D. Tanh

Explanation:

Quantum Activation Function is not an actual activation function used in neural networks. The common ones are ReLU, Sigmoid, Tanh, Leaky ReLU, and others.

Question 2 of 5 (True/False)

Convolutional Neural Networks (CNNs) are primarily used for processing sequential data like text.

A. True

' B. False

Explanation:

False. CNNs are primarily used for processing grid-like data such as images. For sequential data like text, RNNs or Transformers are more commonly used.

Question 3 of 5 (Multiple Choice)

Which of these is a technique to prevent overfitting in neural networks?

A. Increasing model complexity

' B. Dropout

' C. Using smaller training datasets

D. Removing all hidden layers

Explanation:

Dropout is a regularization technique that prevents overfitting by randomly deactivating neurons during training.

Question 4 of 5 (Multiple Choice)

What is the purpose of the softmax function in neural networks?

A. To introduce non-linearity

' B. To normalize input data

' C. To convert outputs to probabilities that sum to 1

D. To speed up training

Explanation:

The softmax function is used to convert the network's output into a probability distribution, ensuring all values are between 0 and 1 and sum to 1.

Question 5 of 5 (True/False)

A higher learning rate always leads to better model performance.

A. True

' B. False

Explanation:

False. A higher learning rate may cause the model to converge too quickly to a suboptimal solution or even diverge. The optimal learning rate depends on the specific problem.