Mock Test Report

Student: Saima Zainab Shroff

Score: 15 / 50

Suggestions to Improve

- Take your time to understand each concept thoroughly.
- Review related lecture materials before attempting again.
- Try practicing similar problems for better understanding.
- Focus on understanding the reasoning behind each correct answer.

Correct Answers

Question	Correct Answer
What will be the output of the following code? ```python import numpy as np from sklearn.preprocessing import StandardScaler data = np.array([[1, 2], [3, 4], [5, 6]]) scaler = StandardScaler() scaled_data = scaler.fit_transform(data) print(scaled_data) ```	A NumPy array with zero mean and unit variance for each feature
Which statement best describes the purpose of the `return_sequences=True` parameter in a Keras RNN layer?	It outputs the hidden state for each time step in the input sequence.
Consider the following code snippet for hyperparameter tuning using GridSearchCV. What is the primary purpose of the `param_grid` parameter? ```python from sklearn.model_selection import GridSearchCV from sklearn.linear_model import LogisticRegression model = LogisticRegression() param_grid = {'C': [0.1, 1, 10], 'penalty': ['l1', 'l2']} grid = GridSearchCV(model, param_grid, cv=5) ```	To specify the range of hyperparameters to search
The following code trains a simple neural network. What is the likely outcome if the learning rate is set too high? ```python import tensorflow as tf model = tf.keras.Sequential([...]) model.compile(optimizer=tf.keras.optimizers.Adam(learning_rate=0.1), loss='mse') model.fit(X_train, y_train, epochs=10) ```	The model will fail to converge, possibly oscillating or diverging.
What does the following code segment do? ```python import pandas as pd data = {'col1': [1, 2, np.nan, 4], 'col2': [5, np.nan, 7, 8]} df = pd.DataFrame(data) df.fillna(df.mean(), inplace=True) ```	It replaces missing values with the mean of each column.
You're using a sequence-to-sequence RNN for time series forecasting. The input sequence has a length of 30 and you want to predict the next 7 days. What should the shape of your target variable be for a single training example?	(30, 7)
Which of the following is NOT a common method for handling class imbalance in a classification problem?	Increasing the number of epochs during training
What is the primary purpose of the `discount_factor` in the `discount_rewards` function (as described in the context)?	To give more weight to immediate rewards than future rewards
In the provided Deep Q-Learning example, what is the role of the replay buffer?	To store the agent's experiences (state, action, reward, next state) for training
The `play_one_step` function uses `tf.GradientTape`. What is the main purpose of using `tf.GradientTape` in this context?	To compute the gradients of the loss function with respect to the model's trainable variables