Slash Mark Machine Learning Internship Theoretical Assessment Test

Total points 100/100

The respondent's email (**dwishanthbolla@gmail.com**) was recorded on submission of this form.

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Slash Mark Internship | LinkedIn Offer Letter Post Link *

https://www.linkedin.com/posts/dwishanth-bolla-235440202_machine-learning-intern-activity-7151944329077383168-k4Zh?utm_source=share&utm_medium=member_desktop

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20 basic multiple-choice questions (MCQs) 25 of 25 points

Answer all Questions below !

PART 1

✓ **Question:** Which evaluation metric is commonly used for classification problems? *5/5

- ○ A. Mean Squared Error (MSE)
- ◉ B. Precision ✓
- ○ C. R-squared
- ○ D. Mean Absolute Error (MAE)

✓ **Question:** What is the purpose of the activation function in a neural network? *5/5

- ○ A. Normalize input data
- ◉ B. Introduce non-linearity ✓
- ○ C. Regularize the model
- ○ D. Initialize weights

✓ **Question:** What is overfitting in machine learning? * 5/5

- ◉ A. Model fits the training data too closely ✓
- ○ B. Model fails to learn from the training data
- ○ C. Model has too few parameters
- ○ D. Model is too simple

✓ **Question:** Which of the following is an unsupervised learning algorithm? * 5/5

- A. Decision Trees
- B. K-Means ✓
- C. Support Vector Machines
- D. Naive Bayes

✓ **Question:** What is the primary goal of machine learning? 5/5

- A. Automation
- B. Repetition
- C. Pattern recognition ✓
- D. Data storage

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✓ **Question:** What is the curse of dimensionality in machine learning? * 5/5

- A. High-dimensional data is difficult to visualize
- B. High-dimensional data requires more computing resources
- C. The increase in volume as the dimensionality increases ✓
- D. The decrease in model complexity with more features

✓ **Question:** What is the purpose of regularization in machine learning? * 5/5

- ○ A. Increase model complexity
- ◉ B. Reduce model complexity ✓
- ○ C. Speed up model training
- ○ D. Improve model interpretability

✓ **Question:** What is the purpose of cross-validation in machine learning? * 5/5

- ○ A. Prevent overfitting
- ○ B. Test the model on unseen data
- ○ C. Optimize hyperparameters
- ◉ D. All of the above ✓

✓ **Question:** What is the role of the gradient descent algorithm in machine learning? *5/5

- ○ A. Feature selection
- ◉ B. Model training ✓
- ○ C. Model evaluation
- ○ D. Hyperparameter tuning

✓ **Question:** Which algorithm is suitable for regression problems? * 5/5

- A. K-Means
- B. Random Forest
- C. Support Vector Machines
- D. Linear Regression ✓

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✓ **Question:** Which algorithm is suitable for handling imbalanced datasets? * 5/5

- A. Naive Bayes
- B. Decision Trees
- C. Support Vector Machines
- D. SMOTE (Synthetic Minority Over-sampling Technique) ✓

✓ **Question:** In a confusion matrix, which metric represents the ratio of correctly predicted positive observations to the total predicted positives? *5/5

- A. Accuracy
- B. Precision ✓
- C. Recall
- D. F1 Score

✓ **Question:** Which type of machine learning algorithm is used for labeling data into discrete classes? *5/5

- A. Regression
- B. Clustering
- C. Classification ✓
- D. Reinforcement Learning

✓ **Question:** What is the purpose of the bias term in a linear regression model? *5/5

- A. Reduce overfitting
- B. Introduce non-linearity
- C. Account for errors in the model
- D. Shift the regression line vertically ✓

✓ **Question:** What does the term "bagging" refer to in the context of machine learning? *5/5

- A. Bootstrap aggregating ✓
- B. Feature scaling
- C. Model stacking
- D. Gradient boosting

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✓ **Question:** What is the purpose of a confusion matrix in classification problems? *5/5

- A. Evaluate the performance of a regression model.
- B. Visualize the distribution of data.
- (●) C. Assess the performance of a classification model. ✓
- D. Determine feature importance.

✓ **Question:** What is the difference between precision and recall? * 5/5

- A. Precision measures false positives, while recall measures false negatives.
- B. Precision measures false negatives, while recall measures false positives.
- (●) C. Precision measures the accuracy of positive predictions, while recall measures the ability to capture all positives. ✓
- D. Precision and recall are the same concept.

✓ **Question:** What is the purpose of dropout in neural networks? * 5/5

- A. Reduce model complexity
- (●) B. Prevent overfitting ✓
- C. Speed up training
- D. Increase learning rate

✓ **Question:** What is the purpose of the learning rate in gradient descent optimization? *5/5

- (●) A. Control the step size during optimization ✓
- ( ) B. Define the number of iterations
- ( ) C. Determine the number of layers in a neural network
- ( ) D. Set the threshold for feature selection

✓ **Question:** What is the difference between validation set and test set in machine learning? *5/5

- ( ) A. They are used interchangeably.
- (●) B. Validation set is used for hyperparameter tuning, while the test set is used for evaluating the final model performance. ✓
- ( ) C. Test set is used for hyperparameter tuning, while the validation set is used for evaluating the final model performance.
- ( ) D. There is no difference between them.