



Logistics Regression-3 quiz

6 out of 6 correct

1. What is the F1 score, and how is it calculated?

- ☒ A metric that measures the balance between precision and recall
- ☐ The ratio of true positives to false positives
- ☐ A metric that measures the ratio of true positives to false negatives
- ☐ The average of precision and recall

Explanation: The F1 score is a harmonic mean of precision and recall, and it measures the balance between the two metrics. It is calculated as $2 * (\text{precision} * \text{recall}) / (\text{precision} + \text{recall})$.

2. What is the ROC curve, and how is it used to evaluate a classification model?

- ☒ A graphical representation of the relationship between true positive rate and false positive rate
- ☐ A metric that measures the balance between precision and recall
- ☐ A metric that measures the ratio of true positives to false negatives
- ☐ A graphical representation of the relationship between precision and recall

Explanation: The ROC curve is a graphical representation of the relationship between the true positive rate and the false positive rate for different thresholds of a classification model. It is used to evaluate the model's performance by calculating the area under the curve (AUC).



3. What is the best metric to use when evaluating a classification model with imbalanced classes?

- ☐ Accuracy
- ☐ Precision
- ☐ Recall
- ☒ F1 score

Explanation: The F1 score is the best metric to use when evaluating a classification model with imbalanced classes because it balances precision and recall, and it is less affected by class imbalance than other metrics like accuracy.

4. What is the difference between binary classification and multiclass classification?

- ☒ Binary classification has only two possible classes, while multiclass classification has more than two possible classes.
- ☐ Binary classification is used for regression problems, while multiclass classification is used for classification problems.
- ☐ Binary classification is a simpler problem than multiclass classification.
- ☐ Binary classification uses different evaluation metrics than multiclass classification.

Explanation: Binary classification involves predicting one of two possible classes, while multiclass classification involves predicting one of three or more possible classes.

5. How is logistic regression used for multiclass classification?

- ☐ By training a separate binary logistic regression model for each class
- ☒ By training a single multinomial logistic regression model for all classes
- ☐ By training a decision tree model with logistic regression as the base learner

- ☐ By training a support vector machine model with a logistic loss f

Explanation: Multinomial logistic regression is a technique for modeling the relationship between a dependent variable with three or more categories and one or more independent variables. It is commonly used for multiclass classification problems.

6. What is model deployment, and why is it important?

- ☐ The process of training a machine learning model and evaluating its performance
- ☒ The process of integrating a machine learning model into a production environment
- ☐ The process of selecting the best machine learning algorithm for a given problem
- ☐ The process of preprocessing and cleaning data for use in a machine learning model

Explanation: Model deployment is the process of integrating a machine learning model into a production environment so that it can be used to make predictions on new data. It is important because it allows the model to be used in real-world applications and can provide significant value to businesses and organizations.

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