Logistics Regression quiz

6 out of 6 correct

1. Which of the following is an appropriate scenario for using logistic regression?

- ◯ Predicting a continuous output variable
- ◯ Identifying the relationship between two categorical variables
- ◯ Estimating the value of a dependent variable given independent variables
- ◉ Classifying observations into two or more categories

Explanation: Logistic regression is a classification technique used to predict the probability of an event occurring or not occurring, based on a set of independent variables.

2. What is the Sigmoid function used for in logistic regression?

- ◯ To normalize the data
- ◯ To transform the dependent variable
- ◯ To transform the independent variables
- ◉ To convert the predicted values into probabilities

Explanation: The Sigmoid function is used to map any real-valued number into a probability value between 0 and 1, which is the predicted probability of an observation belonging to a particular class.

3. What is the ROC curve used for in logistic regression?

- ◯ To evaluate the accuracy of the model
- ◉ To visualize the trade-off between sensitivity and specificity
- ◯ To compare the performance of two or more models
- ◯ To identify outliers in the data

Explanation: The ROC (receiver operating characteristic) curve is a graphical representation of the trade-off between the true positive rate (sensitivity) and false positive rate (1 - specificity) for different probability thresholds of the logistic regression model.

4. What is regularization used for in logistic regression?

- ◯ To increase the complexity of the model
- ◯ To decrease the complexity of the model
- ◉ To prevent overfitting of the model
- ◯ To identify outliers in the data

Explanation: Regularization is a technique used to prevent overfitting of the model by adding a penalty term to the cost function that shrinks the coefficients towards zero.

5. How can imbalanced datasets be handled in logistic regression?

- ◯ By oversampling the minority class
- ◯ By undersampling the majority class
- ◯ By using cost-sensitive learning
- ◉ All of the above

Explanation: Imbalanced datasets can be handled in logistic regression by oversampling the minority class, undersampling the majority class, or using cost-sensitive learning techniques that assign different misclassification costs to the different classes.

6. Which of the following techniques can be used for feature selection in logistic regression?

- ◯ Lasso regularization
- ◯ Principal component analysis (PCA)
- ◯ Recursive feature elimination (RFE)
- ◉ All of the above

Explanation: Lasso regularization, PCA, and RFE are all techniques that can be used for feature selection in logistic regression to reduce the number of independent variables and improve the model's performance

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