

Microsoft

Exam Questions DP-100

Designing and Implementing a Data Science Solution on Azure



NEW QUESTION 1

- (Exam Topic 3)

You use the Two-Class Neural Network module in Azure Machine Learning Studio to build a binary classification model. You use the Tune Model Hyperparameters module to tune accuracy for the model.

You need to select the hyperparameters that should be tuned using the Tune Model Hyperparameters module. Which two hyperparameters should you use? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Number of hidden nodes
- B. Learning Rate
- C. The type of the normalizer
- D. Number of learning iterations
- E. Hidden layer specification

Answer: DE

Explanation:

D: For Number of learning iterations, specify the maximum number of times the algorithm should process the training cases.

E: For Hidden layer specification, select the type of network architecture to create.

Between the input and output layers you can insert multiple hidden layers. Most predictive tasks can be accomplished easily with only one or a few hidden layers.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/two-class-neural-network>

NEW QUESTION 2

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You are analyzing a numerical dataset which contains missing values in several columns.

You must clean the missing values using an appropriate operation without affecting the dimensionality of the feature set.

You need to analyze a full dataset to include all values.

Solution: Calculate the column median value and use the median value as the replacement for any missing value in the column.

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Use the Multiple Imputation by Chained Equations (MICE) method. References: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3074241/>

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/clean-missing-data>

NEW QUESTION 3

- (Exam Topic 3)

You are with a time series dataset in Azure Machine Learning Studio.

You need to split your dataset into training and testing subsets by using the Split Data module. Which splitting mode should you use?

- A. Regular Expression Split
- B. Split Rows with the Randomized split parameter set to true
- C. Relative Expression Split
- D. Recommender Split

Answer: B

Explanation:

Split Rows: Use this option if you just want to divide the data into two parts. You can specify the percentage of data to put in each split, but by default, the data is divided 50-50.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/split-data>

NEW QUESTION 4

- (Exam Topic 3)

You are building a binary classification model by using a supplied training set. The training set is imbalanced between two classes.

You need to resolve the data imbalance.

What are three possible ways to achieve this goal? Each correct answer presents a complete solution NOTE: Each correct selection is worth one point.

- A. Penalize the classification
- B. Resample the data set using under sampling or oversampling
- C. Generate synthetic samples in the minority class.
- D. Use accuracy as the evaluation metric of the model.
- E. Normalize the training feature set.

Answer: BCD

NEW QUESTION 5

- (Exam Topic 3)

You are building a regression model tot estimating the number of calls during an event.

You need to determine whether the feature values achieve the conditions to build a Poisson regression model. Which two conditions must the feature set contain?

Each correct answer presents part of the solution. NOTE:

Each correct selection is worth one point.

- A. The label data must be a negative value.
- B. The label data can be positive or negative,
- C. The label data must be a positive value
- D. The label data must be non discrete.
- E. The data must be whole numbers.

Answer: CE

Explanation:

Poisson regression is intended for use in regression models that are used to predict numeric values, typically counts. Therefore, you should use this module to create your regression model only if the values you are trying to predict fit the following conditions:

The response variable has a Poisson distribution.

Counts cannot be negative. The method will fail outright if you attempt to use it with negative labels.

A Poisson distribution is a discrete distribution; therefore, it is not meaningful to use this method with non-whole numbers.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/poisson-regression>

NEW QUESTION 6

- (Exam Topic 2)

You need to select a feature extraction method. Which method should you use?

- A. Mutual information
- B. Mood's median test
- C. Kendall correlation
- D. Permutation Feature Importance

Answer: C

Explanation:

In statistics, the Kendall rank correlation coefficient, commonly referred to as Kendall's tau coefficient (after the Greek letter τ), is a statistic used to measure the ordinal association between two measured quantities.

It is a supported method of the Azure Machine Learning Feature selection.

Scenario: When you train a Linear Regression module using a property dataset that shows data for property prices for a large city, you need to determine the best features to use in a model. You can choose standard metrics provided to measure performance before and after the feature importance process completes. You must ensure that the distribution of the features across multiple training models is consistent.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/feature-selection-modules>

NEW QUESTION 7

- (Exam Topic 3)

You configure a Deep Learning Virtual Machine for Windows.

You need to recommend tools and frameworks to perform the following: Build deep rwur.il network (DNN) models.

Perform interactive data exploration and visualization.

Which tools and frameworks should you recommend? To answer, drag the appropriate tools to the correct tasks. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

NEW QUESTION 8

- (Exam Topic 3)

You use Azure Machine Learning Studio to build a machine learning experiment. You need to divide data into two distinct datasets. Which module should you use?

- A. Partition and Sample
- B. Assign Data to Clusters
- C. Group Data into Bins
- D. Test Hypothesis Using t-Test

Answer: A

Explanation:

Partition and Sample with the Stratified split option outputs multiple datasets, partitioned using the rules you specified.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/partition-and-sample>

NEW QUESTION 9

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You are a data scientist using Azure Machine Learning Studio.

You need to normalize values to produce an output column into bins to predict a target column. Solution: Apply an Equal Width with Custom Start and Stop binning mode.

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Use the Entropy MDL binning mode which has a target column.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/group-data-into-bins>

NEW QUESTION 10

- (Exam Topic 2)

You need to produce a visualization for the diagnostic test evaluation according to the data visualization requirements.

Which three modules should you recommend be used in sequence? To answer, move the appropriate modules from the list of modules to the answer area and arrange them in the correct order.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Step 1: Sweep Clustering

Start by using the "Tune Model Hyperparameters" module to select the best sets of parameters for each of the models we're considering.

One of the interesting things about the "Tune Model Hyperparameters" module is that it not only outputs the results from the Tuning, it also outputs the Trained Model.

Step 2: Train Model Step 3: Evaluate Model

Scenario: You need to provide the test results to the Fabrikam Residences team. You create data visualizations to aid in presenting the results.

You must produce a Receiver Operating Characteristic (ROC) curve to conduct a diagnostic test evaluation of the model. You need to select appropriate methods for producing the ROC curve in Azure Machine Learning Studio to compare the Two-Class Decision Forest and the Two-Class Decision Jungle modules with one another.

References:

<http://breaking-bi.blogspot.com/2017/01/azure-machine-learning-model-evaluation.html>

NEW QUESTION 10

- (Exam Topic 2)

You need to identify the methods for dividing the data according, to the testing requirements.

Which properties should you select? To answer, select the appropriate option-, m the answer area. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

NEW QUESTION 13

- (Exam Topic 2)

You need to configure the Feature Based Feature Selection module based on the experiment requirements and datasets.

How should you configure the module properties? To answer, select the appropriate options in the dialog box in the answer area.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Mutual Information.

The mutual information score is particularly useful in feature selection because it maximizes the mutual information between the joint distribution and target variables in datasets with many dimensions.

Box 2: MedianValue

MedianValue is the feature column, it is the predictor of the dataset.

Scenario: The MedianValue and AvgRoomsInHouse columns both hold data in numeric format. You need to select a feature selection algorithm to analyze the relationship between the two columns in more detail.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/filter-based-feature-selection>

NEW QUESTION 14

- (Exam Topic 1)

You need to resolve the local machine learning pipeline performance issue. What should you do?

- A. Increase Graphic Processing Units (GPUs).
- B. Increase the learning rate.
- C. Increase the training iterations.
- D. Increase Central Processing Units (CPUs).

Answer: A

NEW QUESTION 16

- (Exam Topic 1)

You need to define an evaluation strategy for the crowd sentiment models.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Scenario:

Experiments for local crowd sentiment models must combine local penalty detection data.

Crowd sentiment models must identify known sounds such as cheers and known catch phrases. Individual crowd sentiment models will detect similar sounds.

Note: Evaluate the changed in correlation between model error rate and centroid distance

In machine learning, a nearest centroid classifier or nearest prototype classifier is a classification model that assigns to observations the label of the class of training samples whose mean (centroid) is closest to the observation.

References: https://en.wikipedia.org/wiki/Nearest_centroid_classifier

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/sweep-clustering>

NEW QUESTION 19

- (Exam Topic 1)

You need to implement a model development strategy to determine a user's tendency to respond to an ad. Which technique should you use?

- A. Use a Relative Expression Split module to partition the data based on centroid distance.
- B. Use a Relative Expression Split module to partition the data based on distance travelled to the event.
- C. Use a Split Rows module to partition the data based on distance travelled to the event.
- D. Use a Split Rows module to partition the data based on centroid distance.

Answer: A

Explanation:

Split Data partitions the rows of a dataset into two distinct sets.

The Relative Expression Split option in the Split Data module of Azure Machine Learning Studio is helpful when you need to divide a dataset into training and testing datasets using a numerical expression.

Relative Expression Split: Use this option whenever you want to apply a condition to a number column. The number could be a date/time field, a column containing age or dollar amounts, or even a percentage. For example, you might want to divide your data set depending on the cost of the items, group people by age ranges, or separate data by a calendar date.

Scenario:

Local market segmentation models will be applied before determining a user's propensity to respond to an advertisement.

The distribution of features across training and production data are not consistent References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/split-data>

NEW QUESTION 21

- (Exam Topic 1)

You need to implement a feature engineering strategy for the crowd sentiment local models. What should you do?

- A. Apply an analysis of variance (ANOVA).
- B. Apply a Pearson correlation coefficient.

- C. Apply a Spearman correlation coefficient.
- D. Apply a linear discriminant analysis.

Answer: D

Explanation:

The linear discriminant analysis method works only on continuous variables, not categorical or ordinal variables.

Linear discriminant analysis is similar to analysis of variance (ANOVA) in that it works by comparing the means of the variables.

Scenario:

Data scientists must build notebooks in a local environment using automatic feature engineering and model building in machine learning pipelines.

Experiments for local crowd sentiment models must combine local penalty detection data. All shared features for local models are continuous variables.

NEW QUESTION 25

- (Exam Topic 1)

You need to build a feature extraction strategy for the local models.

How should you complete the code segment? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

NEW QUESTION 28

- (Exam Topic 1)

You need to implement a new cost factor scenario for the ad response models as illustrated in the performance curve exhibit.

Which technique should you use?

- A. Set the threshold to 0.5 and retrain if weighted Kappa deviates +/- 5% from 0.45.
- B. Set the threshold to 0.05 and retrain if weighted Kappa deviates +/- 5% from 0.5.
- C. Set the threshold to 0.2 and retrain if weighted Kappa deviates +/- 5% from 0.6.
- D. Set the threshold to 0.75 and retrain if weighted Kappa deviates +/- 5% from 0.15.

Answer: A

Explanation:

Scenario:

Performance curves of current and proposed cost factor scenarios are shown in the following diagram:

The ad propensity model uses a cut threshold is 0.45 and retrains occur if weighted Kappa deviated from 0.1 +/- 5%.

NEW QUESTION 31

- (Exam Topic 3)

You plan to create a speech recognition deep learning model. The model must support the latest version of Python.

You need to recommend a deep learning framework for speech recognition to include in the Data Science Virtual Machine (DSVM).

What should you recommend?

- A. Apache Drill
- B. Tensorflow
- C. Rattle

D. Weka

Answer: B

Explanation:

TensorFlow is an open source library for numerical computation and large-scale machine learning. It uses Python to provide a convenient front-end API for building applications with the framework

TensorFlow can train and run deep neural networks for handwritten digit classification, image recognition, word embeddings, recurrent neural networks, sequence-to-sequence models for machine translation, natural language processing, and PDE (partial differential equation) based simulations.

References:

<https://www.infoworld.com/article/3278008/what-is-tensorflow-the-machine-learning-library-explained.html>

NEW QUESTION 34

- (Exam Topic 3)

You are developing a hands-on workshop to introduce Docker for Windows to attendees. You need to ensure that workshop attendees can install Docker on their devices.

Which two prerequisite components should attendees install on the devices? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Microsoft Hardware-Assisted Virtualization Detection Tool
- B. Kitematic
- C. BIOS-enabled virtualization
- D. VirtualBox
- E. Windows 10 64-bit Professional

Answer: E

Explanation:

C: Make sure your Windows system supports Hardware Virtualization Technology and that virtualization is enabled.

Ensure that hardware virtualization support is turned on in the BIOS settings. For example:

E: To run Docker, your machine must have a 64-bit operating system running Windows 7 or higher. References:

https://docs.docker.com/toolbox/toolbox_install_windows/ <https://blogs.technet.microsoft.com/canitpro/2015/09/08/step-by-step-enabling-hyper-v-for-use-on-windows-10/>

NEW QUESTION 36

- (Exam Topic 3)

You create a binary classification model using Azure Machine Learning Studio.

You must use a Receiver Operating Characteristic (ROC) curve and an F1 score to evaluate the model. You need to create the required business metrics.

How should you complete the experiment? To answer, select the appropriate options in the dialog box in the answer area.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

NEW QUESTION 37

- (Exam Topic 3)

You are performing a classification task in Azure Machine Learning Studio.

You must prepare balanced testing and training samples based on a provided data set. You need to split the data with a 0.75:0.25 ratio.

Which value should you use for each parameter? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Split rows

Use the Split Rows option if you just want to divide the data into two parts. You can specify the percentage of data to put in each split, but by default, the data is divided 50-50.

You can also randomize the selection of rows in each group, and use stratified sampling. In stratified sampling, you must select a single column of data for which you want values to be apportioned equally among the two result datasets.

Box 2: 0.75

If you specify a number as a percentage, or if you use a string that contains the "%" character, the value is interpreted as a percentage. All percentage values must be within the range (0, 100), not including the values 0 and 100.

Box 3: Yes

To ensure splits are balanced. Box 4: No

If you use the option for a stratified split, the output datasets can be further divided by subgroups, by selecting a strata column.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/split-data>

NEW QUESTION 39

- (Exam Topic 3)

You are using C-Support Vector classification to do a multi-class classification with an unbalanced training dataset. The C-Support Vector classification using Python code shown below:

You need to evaluate the C-Support Vector classification code.

Which evaluation statement should you use? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Automatically adjust weights inversely proportional to class frequencies in the input data

The "balanced" mode uses the values of y to automatically adjust weights inversely proportional to class frequencies in the input data as $n_samples / (n_classes * np.bincount(y))$.

Box 2: Penalty parameter

Parameter: C : float, optional (default=1.0)

Penalty parameter C of the error term. References:

<https://scikit-learn.org/stable/modules/generated/sklearn.svm.SVC.html>

NEW QUESTION 43

- (Exam Topic 3)

You are developing a data science workspace that uses an Azure Machine Learning service. You need to select a compute target to deploy the workspace. What should you use?

- A. Azure Data Lake Analytics
- B. Azure Databrick .
- C. Apache Spark for HDInsight.
- D. Azure Container Service

Answer: D

Explanation:

Azure Container Instances can be used as compute target for testing or development. Use for low-scale CPU-based workloads that require less than 48 GB of RAM.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-deploy-and-where>

NEW QUESTION 48

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You are creating a new experiment in Azure Machine Learning Studio.

One class has a much smaller number of observations than the other classes in the training set. You need to select an appropriate data sampling strategy to compensate for the class imbalance. Solution: You use the Stratified split for the sampling mode.

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Instead use the Synthetic Minority Oversampling Technique (SMOTE) sampling mode.

Note: SMOTE is used to increase the number of underrepresented cases in a dataset used for machine learning. SMOTE is a better way of increasing the number of rare cases than simply duplicating existing cases.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/smote>

NEW QUESTION 50

- (Exam Topic 3)

Your team is building a data engineering and data science development environment. The environment must support the following requirements:

- support Python and Scala
 - compose data storage, movement, and processing services into automated data pipelines
 - the same tool should be used for the orchestration of both data engineering and data science
 - support workload isolation and interactive workloads
 - enable scaling across a cluster of machines
- You need to create the environment.

What should you do?

- A. Build the environment in Apache Hive for HDInsight and use Azure Data Factory for orchestration.
- B. Build the environment in Azure Databricks and use Azure Data Factory for orchestration.
- C. Build the environment in Apache Spark for HDInsight and use Azure Container Instances for orchestration.
- D. Build the environment in Azure Databricks and use Azure Container Instances for orchestration.

Answer: B

Explanation:

In Azure Databricks, we can create two different types of clusters.

Standard, these are the default clusters and can be used with Python, R, Scala and SQL

High-concurrency

Azure Databricks is fully integrated with Azure Data Factory.

NEW QUESTION 54

- (Exam Topic 3)

You are creating a machine learning model. You need to identify outliers in the data.
Which two visualizations can you use? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point. NOTE: Each correct selection is worth one point.

- A. box plot
- B. scatter
- C. random forest diagram
- D. Venn diagram
- E. ROC curve

Answer: AB

Explanation:

The box-plot algorithm can be used to display outliers.
One other way to quickly identify Outliers visually is to create scatter plots. References:
<https://blogs.msdn.microsoft.com/azuredev/2017/05/27/data-cleansing-tools-in-azure-machine-learning/>

NEW QUESTION 57

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You are creating a new experiment in Azure Machine Learning Studio.

One class has a much smaller number of observations than the other classes in the training set. You need to select an appropriate data sampling strategy to compensate for the class imbalance. Solution: You use the Principal Components Analysis (PCA) sampling mode.

Does the solution meet the goal?

- A. Yes
- B. No

Answer: B

NEW QUESTION 58

- (Exam Topic 3)

You are a data scientist creating a linear regression model.

You need to determine how closely the data fits the regression line. Which metric should you review?

- A. Coefficient of determination
- B. Recall
- C. Precision
- D. Mean absolute error
- E. Root Mean Square Error

Answer: A

Explanation:

Coefficient of determination, often referred to as R², represents the predictive power of the model as a value between 0 and 1. Zero means the model is random (explains nothing); 1 means there is a perfect fit. However, caution should be used in interpreting R² values, as low values can be entirely normal and high values can be suspect.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/evaluate-model>

NEW QUESTION 60

- (Exam Topic 3)

You are building an intelligent solution using machine learning models. The environment must support the following requirements:

Data scientists must build notebooks in a cloud environment

Data scientists must use automatic feature engineering and model building in machine learning pipelines.

Notebooks must be deployed to retrain using Spark instances with dynamic worker allocation.

Notebooks must be exportable to be version controlled locally.

You need to create the environment.

Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Step 1: Create an Azure HDInsight cluster to include the Apache Spark Mlib library Step 2: Install Microsoft Machine Learning for Apache Spark

You install AzureML on your Azure HDInsight cluster.

Microsoft Machine Learning for Apache Spark (MMLSpark) provides a number of deep learning and data science tools for Apache Spark, including seamless integration of Spark Machine Learning pipelines with Microsoft Cognitive Toolkit (CNTK) and OpenCV, enabling you to quickly create powerful, highly-scalable predictive and analytical models for large image and text datasets.

Step 3: Create and execute the Zeppelin notebooks on the cluster

Step 4: When the cluster is ready, export Zeppelin notebooks to a local environment. Notebooks must be exportable to be version controlled locally.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/spark/apache-spark-zeppelin-notebook> <https://azuremlbuild.blob.core.windows.net/pysparkapi/intro.html>

NEW QUESTION 63

- (Exam Topic 3)

You are analyzing a raw dataset that requires cleaning.

You must perform transformations and manipulations by using Azure Machine Learning Studio. You need to identify the correct modules to perform the transformations.

Which modules should you choose? To answer, drag the appropriate modules to the correct scenarios. Each module may be used once, more than once, or not at all.

You may need to drag the split bar between panes or scroll to view content. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Clean Missing Data

Box 2: SMOTE

Use the SMOTE module in Azure Machine Learning Studio to increase the number of underrepresented cases in a dataset used for machine learning. SMOTE is a better way of increasing the number of rare cases than simply duplicating existing cases.

Box 3: Convert to Indicator Values

Use the Convert to Indicator Values module in Azure Machine Learning Studio. The purpose of this module is to convert columns that contain categorical values into a series of binary indicator columns that can more easily be used as features in a machine learning model.

Box 4: Remove Duplicate Rows

References: <https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/smote> <https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/convert-to-indicator-values>

NEW QUESTION 66

- (Exam Topic 3) You are solving a classification task. The dataset is imbalanced.

You need to select an Azure Machine Learning Studio module to improve the classification accuracy. Which module should you use?

- A. Fisher Linear Discriminant Analysis.
- B. Filter Based Feature Selection
- C. Synthetic Minority Oversampling Technique (SMOTE)
- D. Permutation Feature Importance

Answer: C

Explanation:

Use the SMOTE module in Azure Machine Learning Studio (classic) to increase the number of underrepresented cases in a dataset used for machine learning. SMOTE is a better way of increasing the number of rare cases than simply duplicating existing cases.

You connect the SMOTE module to a dataset that is imbalanced. There are many reasons why a dataset might be imbalanced: the category you are targeting might be very rare in the population, or the data might simply be difficult to collect. Typically, you use SMOTE when the class you want to analyze is under-represented.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/smote>

NEW QUESTION 68

- (Exam Topic 3)

You are developing a linear regression model in Azure Machine Learning Studio. You run an experiment to compare different algorithms.

The following image displays the results dataset output:

Use the drop-down menus to select the answer choice that answers each question based on the information presented in the image.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Boosted Decision Tree Regression

Mean absolute error (MAE) measures how close the predictions are to the actual outcomes; thus, a lower score is better.

Box 2:

Online Gradient Descent: If you want the algorithm to find the best parameters for you, set Create trainer

mode option to Parameter Range. You can then specify multiple values for the algorithm to try. References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/evaluate-model> <https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/linear-regression>

NEW QUESTION 69

- (Exam Topic 3)

You are evaluating a Python NumPy array that contains six data points defined as follows: `data = [10, 20, 30, 40, 50, 60]`

You must generate the following output by using the k-fold algorithm implantation in the Python Scikit-learn machine learning library:

train: [10 40 50 60], test: [20 30]

train: [20 30 40 60], test: [10 50]

train: [10 20 30 50], test: [40 60]

You need to implement a cross-validation to generate the output.

How should you complete the code segment? To answer, select the appropriate code segment in the dialog box in the answer area.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: k-fold

Box 2: 3

K-F olds cross-validator provides train/test indices to split data in train/test sets. Split dataset into k consecutive folds (without shuffling by default).

The parameter n_splits (int, default=3) is the number of folds. Must be at least 2. Box 3: data

Example: Example:

```
>>>
```

```
>>> from sklearn.model_selection import KFold
```

```
>>> X = np.array([[1, 2], [3, 4], [1, 2], [3, 4]])
```

```
>>> y = np.array([1, 2, 3, 4])
```

```
>>> kf = KFold(n_splits=2)
```

```
>>> kf.get_n_splits(X) 2
```

```
>>> print(kf)
```

```
KFold(n_splits=2, random_state=None, shuffle=False)
```

```
>>> for train_index, test_index in kf.split(X): print("TRAIN:", train_index, "TEST:", test_index) X_train, X_test = X[train_index], X[test_index] y_train, y_test =
```

```
y[train_index], y[test_index] TRAIN: [2 3] TEST: [0 1]
```

```
TRAIN: [0 1] TEST: [2 3]
```

References:

https://scikit-learn.org/stable/modules/generated/sklearn.model_selection.KFold.html

NEW QUESTION 73

- (Exam Topic 3)

You plan to preprocess text from CSV files. You load the Azure Machine Learning Studio default stop words list.

You need to configure the Preprocess Text module to meet the following requirements:

Ensure that multiple related words from a single canonical form.

Remove pipe characters from text.

Remove words to optimize information retrieval.

Which three options should you select? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Remove stop words

Remove words to optimize information retrieval.

Remove stop words: Select this option if you want to apply a predefined stopword list to the text column. Stop word removal is performed before any other processes.

Box 2: Lemmatization

Ensure that multiple related words from a single canonical form. Lemmatization converts multiple related words to a single canonical form Box 3: Remove special characters

Remove special characters: Use this option to replace any non-alphanumeric special characters with the pipe | character.

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/preprocess-text>

NEW QUESTION 75

- (Exam Topic 3)

You are performing clustering by using the K-means algorithm. You need to define the possible termination conditions.

Which three conditions can you use? Each correct answer presents a complete solution. NOTE: Each correct selection is worth one point.

- A. A fixed number of iterations is executed.
- B. The residual sum of squares (RSS) rises above a threshold.
- C. The sum of distances between centroids reaches a maximum.
- D. The residual sum of squares (RSS) falls below a threshold.
- E. Centroids do not change between iterations.

Answer: ADE

Explanation:

References:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/k-means-clustering> <https://nlp.stanford.edu/IR-book/html/htmledition/k-means-1.html>

NEW QUESTION 79

- (Exam Topic 3)

You are building a machine learning model for translating English language textual content into French language textual content. You need to build and train the machine learning model to learn the sequence of the textual content. Which type of neural network should you use?

- A. Multilayer Perceptions (MLPs)
- B. Convolutional Neural Networks (CNNs)
- C. Recurrent Neural Networks (RNNs)
- D. Generative Adversarial Networks (GANs)

Answer: C

Explanation:

To translate a corpus of English text to French, we need to build a recurrent neural network (RNN).

Note: RNNs are designed to take sequences of text as inputs or return sequences of text as outputs, or both. They're called recurrent because the network's hidden layers have a loop in which the output and cell state from each time step become inputs at the next time step. This recurrence serves as a form of memory. It allows contextual information to flow through the network so that relevant outputs from previous time steps can be applied to network operations at the current time step.

References:

<https://towardsdatascience.com/language-translation-with-rnns-d84d43b40571>

NEW QUESTION 81

- (Exam Topic 3)

You plan to use a Deep Learning Virtual Machine (DLVM) to train deep learning models using Compute Unified Device Architecture (CUDA) computations. You need to configure the DLVM to support CUDA. What should you implement?

- A. Intel Software Guard Extensions (Intel SGX) technology
- B. Solid State Drives (SSD)
- C. Graphic Processing Unit (GPU)
- D. Computer Processing Unit (CPU) speed increase by using overclocking
- E. High Random Access Memory (RAM) configuration

Answer: C

Explanation:

A Deep Learning Virtual Machine is a pre-configured environment for deep learning using GPU instances. References:

<https://azuremarketplace.microsoft.com/en-au/marketplace/apps/microsoft-ads.dsvm-deep-learning>

NEW QUESTION 85

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