

## MLS-C01 Dumps

### AWS Certified Machine Learning - Specialty

<https://www.certleader.com/MLS-C01-dumps.html>



**NEW QUESTION 1**

Example Corp has an annual sale event from October to December. The company has sequential sales data from the past 15 years and wants to use Amazon ML to predict the sales for this year's upcoming event. Which method should Example Corp use to split the data into a training dataset and evaluation dataset?

- A. Pre-split the data before uploading to Amazon S3
- B. Have Amazon ML split the data randomly.
- C. Have Amazon ML split the data sequentially.
- D. Perform custom cross-validation on the data

**Answer: C**

**NEW QUESTION 2**

A Data Science team is designing a dataset repository where it will store a large amount of training data commonly used in its machine learning models. As Data Scientists may create an arbitrary number of new datasets every day the solution has to scale automatically and be cost-effective. Also, it must be possible to explore the data using SQL.

Which storage scheme is MOST adapted to this scenario?

- A. Store datasets as files in Amazon S3.
- B. Store datasets as files in an Amazon EBS volume attached to an Amazon EC2 instance.
- C. Store datasets as tables in a multi-node Amazon Redshift cluster.
- D. Store datasets as global tables in Amazon DynamoDB.

**Answer: A**

**NEW QUESTION 3**

A city wants to monitor its air quality to address the consequences of air pollution A Machine Learning Specialist needs to forecast the air quality in parts per million of contaminates for the next 2 days in the city As this is a prototype, only daily data from the last year is available

Which model is MOST likely to provide the best results in Amazon SageMaker?

- A. Use the Amazon SageMaker k-Nearest-Neighbors (kNN) algorithm on the single time series consisting of the full year of data with a predictor\_type of regressor.
- B. Use Amazon SageMaker Random Cut Forest (RCF) on the single time series consisting of the full year of data.
- C. Use the Amazon SageMaker Linear Learner algorithm on the single time series consisting of the full year of data with a predictor\_type of regressor.
- D. Use the Amazon SageMaker Linear Learner algorithm on the single time series consisting of the full year of data with a predictor\_type of classifier.

**Answer: C**

**NEW QUESTION 4**

An Machine Learning Specialist discover the following statistics while experimenting on a model.

Experiment 1  
Baseline model  
Train error = 5%  
Test error = 16%

Experiment 2  
The Specialist added more layers and neurons to the model and received the following results:  
Train error = 5.2%  
Test error = 15.7%

Experiment 3  
The Specialist reverted back to the original number of neurons from Experiment 1 and implemented regularization in the neural network, which yielded the following results:  
Train error = 4.7%  
Test error = 9.5%

What can the Specialist learn from the experiments?

- A. The model in Experiment 1 had a high variance error that was reduced in Experiment 3 by regularization Experiment 2 shows that there is minimal bias error in Experiment 1
- B. The model in Experiment 1 had a high bias error that was reduced in Experiment 3 by regularization Experiment 2 shows that there is minimal variance error in Experiment 1
- C. The model in Experiment 1 had a high bias error and a high variance error that were reduced in Experiment 3 by regularization Experiment 2 shows that high bias cannot be reduced by increasing layers and neurons in the model
- D. The model in Experiment 1 had a high random noise error that was reduced in Experiment 3 by regularization Experiment 2 shows that random noise cannot be reduced by increasing layers and neurons in the model

**Answer: C**

**NEW QUESTION 5**

A Machine Learning team uses Amazon SageMaker to train an Apache MXNet handwritten digit classifier model using a research dataset. The team wants to receive a notification when the model is overfitting. Auditors want to view the Amazon SageMaker log activity report to ensure there are no unauthorized API calls. What should the Machine Learning team do to address the requirements with the least amount of code and fewest steps?

- A. Implement an AWS Lambda function to log Amazon SageMaker API calls to Amazon S3. Add code to push a custom metric to Amazon CloudWatch
- B. Create an alarm in CloudWatch with Amazon SNS to receive a notification when the model is overfitting.
- C. Use AWS CloudTrail to log Amazon SageMaker API calls to Amazon S3. Add code to push a custom metric to Amazon CloudWatch
- D. Create an alarm in CloudWatch with Amazon SNS to receive a notification when the model is overfitting.
- E. Implement an AWS Lambda function to log Amazon SageMaker API calls to AWS CloudTrail

- F. Add code to push a custom metric to Amazon CloudWatc
- G. Create an alarm in CloudWatch with Amazon SNS to receive a notification when the model is overfitting.
- H. Use AWS CloudTrail to log Amazon SageMaker API calls to Amazon S3. Set up Amazon SNS to receive a notification when the model is overfitting.

**Answer: C**

#### NEW QUESTION 6

A gaming company has launched an online game where people can start playing for free but they need to pay if they choose to use certain features The company needs to build an automated system to predict whether or not a new user will become a paid user within 1 year The company has gathered a labeled dataset from 1 million users

The training dataset consists of 1.000 positive samples (from users who ended up paying within 1 year) and 999.1 negative samples (from users who did not use any paid features) Each data sample consists of 200 features including user age, device, location, and play patterns

Using this dataset for training, the Data Science team trained a random forest model that converged with over 99% accuracy on the training set However, the prediction results on a test dataset were not satisfactory.

Which of the following approaches should the Data Science team take to mitigate this issue? (Select TWO.)

- A. Add more deep trees to the random forest to enable the model to learn more features.
- B. indicate a copy of the samples in the test database in the training dataset
- C. Generate more positive samples by duplicating the positive samples and adding a small amount of noise to the duplicated data.
- D. Change the cost function so that false negatives have a higher impact on the cost value than false positives
- E. Change the cost function so that false positives have a higher impact on the cost value than false negatives

**Answer: BD**

#### NEW QUESTION 7

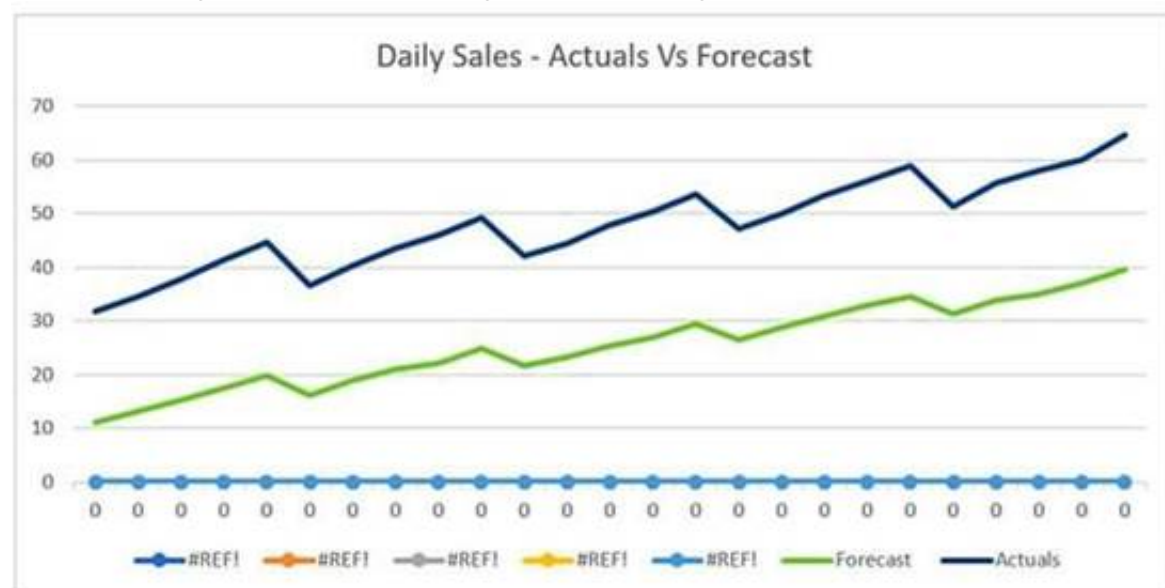
A Machine Learning Specialist was given a dataset consisting of unlabeled data The Specialist must create a model that can help the team classify the data into different buckets What model should be used to complete this work?

- A. K-means clustering
- B. Random Cut Forest (RCF)
- C. XGBoost
- D. BlazingText

**Answer: A**

#### NEW QUESTION 8

The displayed graph is from a forecasting model for testing a time series.



Considering the graph only, which conclusion should a Machine Learning Specialist make about the behavior of the model?

- A. The model predicts both the trend and the seasonality well.
- B. The model predicts the trend well, but not the seasonality.
- C. The model predicts the seasonality well, but not the trend.
- D. The model does not predict the trend or the seasonality well.

**Answer: D**

#### NEW QUESTION 9

A Machine Learning Specialist observes several performance problems with the training portion of a machine learning solution on Amazon SageMaker The solution uses a large training dataset 2 TB in size and is using the SageMaker k-means algorithm The observed issues include the unacceptable length of time it takes before the training job launches and poor I/O throughput while training the model

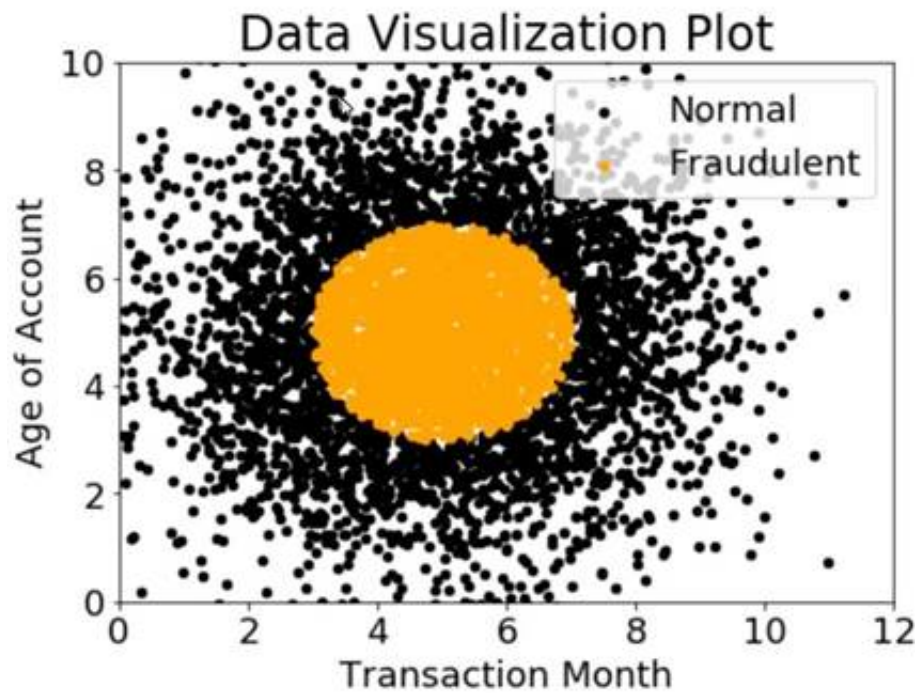
What should the Specialist do to address the performance issues with the current solution?

- A. Use the SageMaker batch transform feature
- B. Compress the training data into Apache Parquet format.
- C. Ensure that the input mode for the training job is set to Pipe.
- D. Copy the training dataset to an Amazon EFS volume mounted on the SageMaker instance.

**Answer: B**

#### NEW QUESTION 10

A company wants to classify user behavior as either fraudulent or normal. Based on internal research, a Machine Learning Specialist would like to build a binary classifier based on two features: age of account and transaction month. The class distribution for these features is illustrated in the figure provided.



Based on this information, which model would have the HIGHEST recall with respect to the fraudulent class?

- A. Decision tree
- B. Linear support vector machine (SVM)
- C. Naive Bayesian classifier
- D. Single Perceptron with sigmoidal activation function

**Answer: C**

#### NEW QUESTION 10

An agency collects census information within a country to determine healthcare and social program needs by province and city. The census form collects responses for approximately 500 questions from each citizen

Which combination of algorithms would provide the appropriate insights? (Select TWO )

- A. The factorization machines (FM) algorithm
- B. The Latent Dirichlet Allocation (LDA) algorithm
- C. The principal component analysis (PCA) algorithm
- D. The k-means algorithm
- E. The Random Cut Forest (RCF) algorithm

**Answer: CD**

#### Explanation:

The PCA and K-means algorithms are useful in collection of data using census form.

#### NEW QUESTION 15

A Machine Learning Specialist working for an online fashion company wants to build a data ingestion solution for the company's Amazon S3-based data lake. The Specialist wants to create a set of ingestion mechanisms that will enable future capabilities comprised of:

- Real-time analytics
- Interactive analytics of historical data
- Clickstream analytics
- Product recommendations

Which services should the Specialist use?

- A. AWS Glue as the data catalog; Amazon Kinesis Data Streams and Amazon Kinesis Data Analytics for real-time data insights; Amazon Kinesis Data Firehose for delivery to Amazon ES for clickstream analytics; Amazon EMR to generate personalized product recommendations
- B. Amazon Athena as the data catalog; Amazon Kinesis Data Streams and Amazon Kinesis Data Analytics for near-realtime data insights; Amazon Kinesis Data Firehose for clickstream analytics; AWS Glue to generate personalized product recommendations
- C. AWS Glue as the data catalog; Amazon Kinesis Data Streams and Amazon Kinesis Data Analytics for historical data insights; Amazon Kinesis Data Firehose for delivery to Amazon ES for clickstream analytics; Amazon EMR to generate personalized product recommendations
- D. Amazon Athena as the data catalog; Amazon Kinesis Data Streams and Amazon Kinesis Data Analytics for historical data insights; Amazon DynamoDB streams for clickstream analytics; AWS Glue to generate personalized product recommendations

**Answer: A**

#### NEW QUESTION 19

A large consumer goods manufacturer has the following products on sale

- 34 different toothpaste variants
- 48 different toothbrush variants
- 43 different mouthwash variants

The entire sales history of all these products is available in Amazon S3. Currently, the company is using custom-built autoregressive integrated moving average (ARIMA) models to forecast demand for these products. The company wants to predict the demand for a new product that will soon be launched.

Which solution should a Machine Learning Specialist apply?

- A. Train a custom ARIMA model to forecast demand for the new product.
- B. Train an Amazon SageMaker DeepAR algorithm to forecast demand for the new product.
- C. Train an Amazon SageMaker k-means clustering algorithm to forecast demand for the new product.



D. Train a custom XGBoost model to forecast demand for the new product

**Answer: B**

**Explanation:**

The Amazon SageMaker DeepAR forecasting algorithm is a supervised learning algorithm for forecasting scalar (one-dimensional) time series using recurrent neural networks (RNN). Classical forecasting methods, such as autoregressive integrated moving average (ARIMA) or exponential smoothing (ETS), fit a single model to each individual time series. They then use that model to extrapolate the time series into the future.

**NEW QUESTION 22**

A large mobile network operating company is building a machine learning model to predict customers who are likely to unsubscribe from the service. The company plans to offer an incentive for these customers as the cost of churn is far greater than the cost of the incentive.

The model produces the following confusion matrix after evaluating on a test dataset of 100 customers: Based on the model evaluation results, why is this a viable model for production?

n = 100	PREDICTED CHURN	PREDICTED CHURN
	Yes	No
ACTUAL Churn Yes	10	4
Actual No	10	76

- A. The model is 86% accurate and the cost incurred by the company as a result of false negatives is less than the false positives.
- B. The precision of the model is 86%, which is less than the accuracy of the model.
- C. The model is 86% accurate and the cost incurred by the company as a result of false positives is less than the false negatives.
- D. The precision of the model is 86%, which is greater than the accuracy of the model.

**Answer: B**

**NEW QUESTION 23**

An office security agency conducted a successful pilot using 100 cameras installed at key locations within the main office. Images from the cameras were uploaded to Amazon S3 and tagged using Amazon Rekognition, and the results were stored in Amazon ES. The agency is now looking to expand the pilot into a full production system using thousands of video cameras in its office locations globally. The goal is to identify activities performed by non-employees in real time. Which solution should the agency consider?

- A. Use a proxy server at each local office and for each camera, and stream the RTSP feed to a unique Amazon Kinesis Video Streams video stream
- B. On each stream, use Amazon Rekognition Video and create a stream processor to detect faces from a collection of known employees, and alert when non-employees are detected.
- C. Use a proxy server at each local office and for each camera, and stream the RTSP feed to a unique Amazon Kinesis Video Streams video stream
- D. On each stream, use Amazon Rekognition Image to detect faces from a collection of known employees and alert when non-employees are detected.
- E. Install AWS DeepLens cameras and use the DeepLens\_Kinesis\_Video module to stream video to Amazon Kinesis Video Streams for each camera
- F. On each stream, use Amazon Rekognition Video and create a stream processor to detect faces from a collection on each stream, and alert when nonemployees are detected.
- G. Install AWS DeepLens cameras and use the DeepLens\_Kinesis\_Video module to stream video to Amazon Kinesis Video Streams for each camera
- H. On each stream, run an AWS Lambda function to capture image fragments and then call Amazon Rekognition Image to detect faces from a collection of known employees, and alert when non-employees are detected.

**Answer: D**

**NEW QUESTION 28**

A retail company intends to use machine learning to categorize new products. A labeled dataset of current products was provided to the Data Science team. The dataset includes 1,200 products. The labeled dataset has 15 features for each product such as title, dimensions, weight, and price. Each product is labeled as belonging to one of six categories such as books, games, electronics, and movies.

Which model should be used for categorizing new products using the provided dataset for training?

- A. An XGBoost model where the objective parameter is set to multi: softmax
- B. A deep convolutional neural network (CNN) with a softmax activation function for the last layer
- C. A regression forest where the number of trees is set equal to the number of product categories
- D. A DeepAR forecasting model based on a recurrent neural network (RNN)

**Answer: B**

**NEW QUESTION 31**

A Machine Learning Specialist is building a model to predict future employment rates based on a wide range of economic factors. While exploring the data, the Specialist notices that the magnitude of the input features vary greatly. The Specialist does not want variables with a larger magnitude to dominate the model. What should the Specialist do to prepare the data for model training?

- A. Apply quantile binning to group the data into categorical bins to keep any relationships in the data by replacing the magnitude with distribution
- B. Apply the Cartesian product transformation to create new combinations of fields that are independent of the magnitude
- C. Apply normalization to ensure each field will have a mean of 0 and a variance of 1 to remove any significant magnitude
- D. Apply the orthogonal sparse Diagram (OSD) transformation to apply a fixed-size sliding window to generate new features of a similar magnitude.

**Answer: C**

**NEW QUESTION 33**

A Machine Learning Specialist is developing a custom video recommendation model for an application. The dataset used to train this model is very large with millions of data points and is hosted in an Amazon S3 bucket. The Specialist wants to avoid loading all of this data onto an Amazon SageMaker notebook instance.

because it would take hours to move and will exceed the attached 5 GB Amazon EBS volume on the notebook instance. Which approach allows the Specialist to use all the data to train the model?

- A. Load a smaller subset of the data into the SageMaker notebook and train locally
- B. Confirm that the training code is executing and the model parameters seem reasonable
- C. Initiate a SageMaker training job using the full dataset from the S3 bucket using Pipe input mode.
- D. Launch an Amazon EC2 instance with an AWS Deep Learning AMI and attach the S3 bucket to the instance
- E. Train on a small amount of the data to verify the training code and hyperparameter
- F. Go back to Amazon SageMaker and train using the full dataset
- G. Use AWS Glue to train a model using a small subset of the data to confirm that the data will be compatible with Amazon SageMaker
- H. Initiate a SageMaker training job using the full dataset from the S3 bucket using Pipe input mode.
- I. Load a smaller subset of the data into the SageMaker notebook and train locally
- J. Confirm that the training code is executing and the model parameters seem reasonable
- K. Launch an Amazon EC2 instance with an AWS Deep Learning AMI and attach the S3 bucket to train the full dataset.

**Answer: A**

#### NEW QUESTION 35

A retail chain has been ingesting purchasing records from its network of 20,000 stores to Amazon S3 using Amazon Kinesis Data Firehose. To support training an improved machine learning model, training records will require new but simple transformations, and some attributes will be combined. The model needs to be retrained daily.

Given the large number of stores and the legacy data ingestion, which change will require the LEAST amount of development effort?

- A. Require that the stores switch to capturing their data locally on AWS Storage Gateway for loading into Amazon S3, then use AWS Glue to do the transformation.
- B. Deploy an Amazon EMR cluster running Apache Spark with the transformation logic, and have the cluster run each day on the accumulating records in Amazon S3, outputting new/transformed records to Amazon S3.
- C. Spin up a fleet of Amazon EC2 instances with the transformation logic, have them transform the data records accumulating on Amazon S3, and output the transformed records to Amazon S3.
- D. Insert an Amazon Kinesis Data Analytics stream downstream of the Kinesis Data Firehose stream that transforms raw record attributes into simple transformed values using SQL.

**Answer: D**

#### NEW QUESTION 40

A manufacturing company has structured and unstructured data stored in an Amazon S3 bucket. A Machine Learning Specialist wants to use SQL to run queries on this data.

Which solution requires the LEAST effort to be able to query this data?

- A. Use AWS Data Pipeline to transform the data and Amazon RDS to run queries.
- B. Use AWS Glue to catalogue the data and Amazon Athena to run queries.
- C. Use AWS Batch to run ETL on the data and Amazon Aurora to run the queries.
- D. Use AWS Lambda to transform the data and Amazon Kinesis Data Analytics to run queries.

**Answer: B**

#### NEW QUESTION 44

A Machine Learning Specialist is building a supervised model that will evaluate customers' satisfaction with their mobile phone service based on recent usage. The model's output should infer whether or not a customer is likely to switch to a competitor in the next 30 days.

Which of the following modeling techniques should the Specialist use?

- A. Time-series prediction
- B. Anomaly detection
- C. Binary classification
- D. Regression

**Answer: D**

#### NEW QUESTION 49

A Data Scientist is developing a machine learning model to classify whether a financial transaction is fraudulent. The labeled data available for training consists of 100,000 non-fraudulent observations and 1,000 fraudulent observations.

The Data Scientist applies the XGBoost algorithm to the data, resulting in the following confusion matrix when the trained model is applied to a previously unseen validation dataset. The accuracy of the model is 99.1%, but the Data Scientist has been asked to reduce the number of false negatives.

Predicted	0	1
Actual	99,966	34
	1	877

Which combination of steps should the Data Scientist take to reduce the number of false positive predictions by the model? (Select TWO.)

- A. Change the XGBoost eval\_metric parameter to optimize based on rmse instead of error.
- B. Increase the XGBoost scale\_pos\_weight parameter to adjust the balance of positive and negative weights.
- C. Increase the XGBoost max\_depth parameter because the model is currently underfitting the data.
- D. Change the XGBoost eval\_metric parameter to optimize based on AUC instead of error.
- E. Decrease the XGBoost max\_depth parameter because the model is currently overfitting the data.

**Answer: DE**

**NEW QUESTION 50**

A Machine Learning Specialist is working with multiple data sources containing billions of records that need to be joined. What feature engineering and model development approach should the Specialist take with a dataset this large?

- A. Use an Amazon SageMaker notebook for both feature engineering and model development
- B. Use an Amazon SageMaker notebook for feature engineering and Amazon ML for model development
- C. Use Amazon EMR for feature engineering and Amazon SageMaker SDK for model development
- D. Use Amazon ML for both feature engineering and model development.

**Answer: B**

**NEW QUESTION 54**

A Data Scientist wants to gain real-time insights into a data stream of GZIP files. Which solution would allow the use of SQL to query the stream with the LEAST latency?

- A. Amazon Kinesis Data Analytics with an AWS Lambda function to transform the data.
- B. AWS Glue with a custom ETL script to transform the data.
- C. An Amazon Kinesis Client Library to transform the data and save it to an Amazon ES cluster.
- D. Amazon Kinesis Data Firehose to transform the data and put it into an Amazon S3 bucket.

**Answer: A**

**NEW QUESTION 56**

A Machine Learning Specialist is building a model that will perform time series forecasting using Amazon SageMaker. The Specialist has finished training the model and is now planning to perform load testing on the endpoint so they can configure Auto Scaling for the model variant. Which approach will allow the Specialist to review the latency, memory utilization, and CPU utilization during the load test?"

- A. Review SageMaker logs that have been written to Amazon S3 by leveraging Amazon Athena and Amazon QuickSight to visualize logs as they are being produced
- B. Generate an Amazon CloudWatch dashboard to create a single view for the latency, memory utilization, and CPU utilization metrics that are outputted by Amazon SageMaker
- C. Build custom Amazon CloudWatch Logs and then leverage Amazon ES and Kibana to query and visualize the data as it is generated by Amazon SageMaker
- D. Send Amazon CloudWatch Logs that were generated by Amazon SageMaker to Amazon ES and use Kibana to query and visualize the log data.

**Answer: B**

**NEW QUESTION 61**

A financial services company is building a robust serverless data lake on Amazon S3. The data lake should be flexible and meet the following requirements:

- \* Support querying old and new data on Amazon S3 through Amazon Athena and Amazon Redshift Spectrum.
- \* Support event-driven ETL pipelines.
- \* Provide a quick and easy way to understand metadata. Which approach meets these requirements?

- A. Use an AWS Glue crawler to crawl S3 data, an AWS Lambda function to trigger an AWS Glue ETL job, and an AWS Glue Data catalog to search and discover metadata.
- B. Use an AWS Glue crawler to crawl S3 data, an AWS Lambda function to trigger an AWS Batch job, and an external Apache Hive metastore to search and discover metadata.
- C. Use an AWS Glue crawler to crawl S3 data, an Amazon CloudWatch alarm to trigger an AWS Batch job, and an AWS Glue Data Catalog to search and discover metadata.
- D. Use an AWS Glue crawler to crawl S3 data, an Amazon CloudWatch alarm to trigger an AWS Glue ETL job, and an external Apache Hive metastore to search and discover metadata.

**Answer: B**

**NEW QUESTION 66**

An online reseller has a large, multi-column dataset with one column missing 30% of its data. A Machine Learning Specialist believes that certain columns in the dataset could be used to reconstruct the missing data.

Which reconstruction approach should the Specialist use to preserve the integrity of the dataset?

- A. Listwise deletion
- B. Last observation carried forward
- C. Multiple imputation
- D. Mean substitution

**Answer: C**

**NEW QUESTION 69**

A manufacturing company asks its Machine Learning Specialist to develop a model that classifies defective parts into one of eight defect types. The company has provided roughly 100,000 images per defect type for training. During the initial training of the image classification model, the Specialist notices that the validation accuracy is 80%, while the training accuracy is 90%. It is known that human-level performance for this type of image classification is around 90%. What should the Specialist consider to fix this issue?

- A. A longer training time
- B. Making the network larger
- C. Using a different optimizer
- D. Using some form of regularization

**Answer: D**

**NEW QUESTION 71**

A Machine Learning Specialist works for a credit card processing company and needs to predict which transactions may be fraudulent in near-real time. Specifically, the Specialist must train a model that returns the probability that a given transaction may be fraudulent. How should the Specialist frame this business problem'?

- A. Streaming classification
- B. Binary classification
- C. Multi-category classification
- D. Regression classification

**Answer:** A

**NEW QUESTION 74**

An e-commerce company needs a customized training model to classify images of its shirts and pants products. The company needs a proof of concept in 2 to 3 days with good accuracy. Which compute choice should the Machine Learning Specialist select to train and achieve good accuracy on the model quickly?

- A. . m5 4xlarge (general purpose)
- B. r5.2xlarge (memory optimized)
- C. p3.2xlarge (GPU accelerated computing)
- D. p3 8xlarge (GPU accelerated computing)

**Answer:** C

**NEW QUESTION 77**

A Machine Learning Specialist trained a regression model, but the first iteration needs optimizing. The Specialist needs to understand whether the model is more frequently overestimating or underestimating the target.

What option can the Specialist use to determine whether it is overestimating or underestimating the target value?

- A. Root Mean Square Error (RMSE)
- B. Residual plots
- C. Area under the curve
- D. Confusion matrix

**Answer:** C

**NEW QUESTION 82**

A Marketing Manager at a pet insurance company plans to launch a targeted marketing campaign on social media to acquire new customers. Currently, the company has the following data in Amazon Aurora:

- Profiles for all past and existing customers
- Profiles for all past and existing insured pets
- Policy-level information
- Premiums received
- Claims paid

What steps should be taken to implement a machine learning model to identify potential new customers on social media?

- A. Use regression on customer profile data to understand key characteristics of consumer segments. Find similar profiles on social media.
- B. Use clustering on customer profile data to understand key characteristics of consumer segments. Find similar profiles on social media.
- C. Use a recommendation engine on customer profile data to understand key characteristics of consumer segment.
- D. Find similar profiles on social media.
- E. Use a decision tree classifier engine on customer profile data to understand key characteristics of consumer segment.
- F. Find similar profiles on social media.

**Answer:** C

**NEW QUESTION 86**

A Machine Learning Specialist is configuring Amazon SageMaker so multiple Data Scientists can access notebooks, train models, and deploy endpoints. To ensure the best operational performance, the Specialist needs to be able to track how often the Scientists are deploying models, GPU and CPU utilization on the deployed SageMaker endpoints, and all errors that are generated when an endpoint is invoked.

Which services are integrated with Amazon SageMaker to track this information? (Select TWO.)

- A. AWS CloudTrail
- B. AWS Health
- C. AWS Trusted Advisor
- D. Amazon CloudWatch
- E. AWS Config

**Answer:** AD

**NEW QUESTION 91**

During mini-batch training of a neural network for a classification problem, a Data Scientist notices that training accuracy oscillates. What is the MOST likely cause of this issue?

- A. The class distribution in the dataset is imbalanced
- B. Dataset shuffling is disabled
- C. The batch size is too big
- D. The learning rate is very high



**Answer:** D

#### NEW QUESTION 95

A Data Scientist needs to create a serverless ingestion and analytics solution for high-velocity, real-time streaming data.

The ingestion process must buffer and convert incoming records from JSON to a query-optimized, columnar format without data loss. The output datastore must be highly available, and Analysts must be able to run SQL queries against the data and connect to existing business intelligence dashboards.

Which solution should the Data Scientist build to satisfy the requirements?

- A. Create a schema in the AWS Glue Data Catalog of the incoming data format.
- B. Use an Amazon Kinesis Data Firehose delivery stream to stream the data and transform the data to Apache Parquet or ORC format using the AWS Glue Data Catalog before delivering to Amazon S3. Have the Analysts query the data directly from Amazon S3 using Amazon Athena, and connect to BI tools using the Athena Java Database Connectivity (JDBC) connector.
- C. Write each JSON record to a staging location in Amazon S3. Use the S3 Put event to trigger an AWS Lambda function that transforms the data into Apache Parquet or ORC format and writes the data to a processed data location in Amazon S3. Have the Analysts query the data directly from Amazon S3 using Amazon Athena, and connect to BI tools using the Athena Java Database Connectivity (JDBC) connector.
- D. Write each JSON record to a staging location in Amazon S3. Use the S3 Put event to trigger an AWS Lambda function that transforms the data into Apache Parquet or ORC format and inserts it into an Amazon RDS PostgreSQL database.
- E. Have the Analysts query and run dashboards from the RDS database.
- F. Use Amazon Kinesis Data Analytics to ingest the streaming data and perform real-time SQL queries to convert the records to Apache Parquet before delivering to Amazon S3. Have the Analysts query the data directly from Amazon S3 using Amazon Athena and connect to BI tools using the Athena Java Database Connectivity (JDBC) connector.

**Answer:** A

#### NEW QUESTION 97

A manufacturer of car engines collects data from cars as they are being driven. The data collected includes timestamp, engine temperature, rotations per minute (RPM), and other sensor readings. The company wants to predict when an engine is going to have a problem so it can notify drivers in advance to get engine maintenance. The engine data is loaded into a data lake for training.

Which is the MOST suitable predictive model that can be deployed into production?

- A. Add labels over time to indicate which engine faults occur at what time in the future to turn this into a supervised learning problem. Use a recurrent neural network (RNN) to train the model to recognize when an engine might need maintenance for a certain fault.
- B. This data requires an unsupervised learning algorithm. Use Amazon SageMaker k-means to cluster the data.
- C. Add labels over time to indicate which engine faults occur at what time in the future to turn this into a supervised learning problem. Use a convolutional neural network (CNN) to train the model to recognize when an engine might need maintenance for a certain fault.
- D. This data is already formulated as a time series. Use Amazon SageMaker seq2seq to model the time series.

**Answer:** B

#### NEW QUESTION 99

A Machine Learning Specialist has built a model using Amazon SageMaker built-in algorithms and is not getting expected accurate results. The Specialist wants to use hyperparameter optimization to increase the model's accuracy.

Which method is the MOST repeatable and requires the LEAST amount of effort to achieve this?

- A. Launch multiple training jobs in parallel with different hyperparameters.
- B. Create an AWS Step Functions workflow that monitors the accuracy in Amazon CloudWatch Logs and relaunches the training job with a defined list of hyperparameters.
- C. Create a hyperparameter tuning job and set the accuracy as an objective metric.
- D. Create a random walk in the parameter space to iterate through a range of values that should be used for each individual hyperparameter.

**Answer:** B

#### NEW QUESTION 104

A Data Scientist is developing a machine learning model to predict future patient outcomes based on information collected about each patient and their treatment plans. The model should output a continuous value as its prediction. The data available includes labeled outcomes for a set of 4,000 patients. The study was conducted on a group of individuals over the age of 65 who have a particular disease that is known to worsen with age.

Initial models have performed poorly. While reviewing the underlying data, the Data Scientist notices that, out of 4,000 patient observations, there are 450 where the patient age has been input as 0. The other features for these observations appear normal compared to the rest of the sample population.

How should the Data Scientist correct this issue?

- A. Drop all records from the dataset where age has been set to 0.
- B. Replace the age field value for records with a value of 0 with the mean or median value from the dataset.
- C. Drop the age feature from the dataset and train the model using the rest of the features.
- D. Use k-means clustering to handle missing features.

**Answer:** A

#### NEW QUESTION 108

A Machine Learning Specialist is assigned a TensorFlow project using Amazon SageMaker for training, and needs to continue working for an extended period with no Wi-Fi access.

Which approach should the Specialist use to continue working?

- A. Install Python 3 and boto3 on their laptop and continue the code development using that environment.
- B. Download the TensorFlow Docker container used in Amazon SageMaker from GitHub to their local environment, and use the Amazon SageMaker Python SDK to test the code.
- C. Download TensorFlow from tensorflow.org to emulate the TensorFlow kernel in the SageMaker environment.
- D. Download the SageMaker notebook to their local environment, then install Jupyter Notebooks on their laptop and continue the development in a local notebook.

**Answer:** A

**NEW QUESTION 112**

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