

# Exam Questions AWS-Certified-Machine-Learning-Specialty

AWS Certified Machine Learning - Specialty

<https://www.2passeasy.com/dumps/AWS-Certified-Machine-Learning-Specialty/>



### NEW QUESTION 1

A Machine Learning Specialist is working with a media company to perform classification on popular articles from the company's website. The company is using random forests to classify how popular an article will be before it is published. A sample of the data being used is below.

Given the dataset, the Specialist wants to convert the Day-Of-Week column to binary values. What technique should be used to convert this column to binary values.

Article_Title	Author	Top_Keywords	Day_Of_Week	URL_of_Article	Page_Views
Building a Big Data Platform	Jane Doe	Big Data, Spark, Hadoop	Tuesday	<a href="http://examplecorp.com/data_platform.html">http://examplecorp.com/data_platform.html</a>	1300456
Getting Started with Deep Learning	John Doe	Deep Learning, Machine Learning, Spark	Tuesday	<a href="http://examplecorp.com/started_deep_learning.html">http://examplecorp.com/started_deep_learning.html</a>	1230661
MXNet ML Guide	Jane Doe	Machine Learning, MXNet, Logistic Regression	Thursday	<a href="http://examplecorp.com/mxnet_guide.html">http://examplecorp.com/mxnet_guide.html</a>	937291
Intro to NoSQL Databases	Mary Major	NoSQL, Operations, Database	Monday	<a href="http://examplecorp.com/nosql_intro_guide.html">http://examplecorp.com/nosql_intro_guide.html</a>	407812

- A. Binarization
- B. One-hot encoding
- C. Tokenization
- D. Normalization transformation

**Answer: B**

### NEW QUESTION 2

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 3

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 4

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 5

A medical imaging company wants to train a computer vision model to detect areas of concern on patients' CT scans. The company has a large collection of unlabeled CT scans that are linked to each patient and stored in an Amazon S3 bucket. The scans must be accessible to authorized users only. A machine learning engineer needs to build a labeling pipeline.

Which set of steps should the engineer take to build the labeling pipeline with the LEAST effort?

- A. Create a workforce with AWS Identity and Access Management (IAM). Build a labeling tool on Amazon EC2 Queue images for labeling by using Amazon Simple Queue Service (Amazon SQS). Write the labeling instructions.
- B. Create an Amazon Mechanical Turk workforce and manifest fil
- C. Create a labeling job by using the built-in image classification task type in Amazon SageMaker Ground Trut
- D. Write the labeling instructions.
- E. Create a private workforce and manifest fil
- F. Create a labeling job by using the built-in bounding box task type in Amazon SageMaker Ground Trut
- G. Write the labeling instructions.
- H. Create a workforce with Amazon Cognit
- I. Build a labeling web application with AWS Amplif
- J. Build a labeling workflow backend using AWS Lambd
- K. Write the labeling instructions.

Answer: C

#### Explanation:

<https://docs.aws.amazon.com/sagemaker/latest/dg/sms-workforce-private.html>

#### NEW QUESTION 6

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: A

#### 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

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	
	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: A

#### NEW QUESTION 9

A Machine Learning Specialist is using Apache Spark for pre-processing training data As part of the Spark pipeline, the Specialist wants to use Amazon SageMaker for training a model and hosting it Which of the following would the Specialist do to integrate the Spark application with SageMaker? (Select THREE )

- A. Download the AWS SDK for the Spark environment
- B. Install the SageMaker Spark library in the Spark environment.

- C. Use the appropriate estimator from the SageMaker Spark Library to train a model.
- D. Compress the training data into a ZIP file and upload it to a pre-defined Amazon S3 bucket.
- E. Use the `sageMakerMode`
- F. `transform` method to get inferences from the model hosted in SageMaker
- G. Convert the `DataFrame` object to a CSV file, and use the CSV file as input for obtaining inferences from SageMaker.

**Answer:** DEF

#### NEW QUESTION 10

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 CloudWatch.
- 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 10

A bank wants to launch a low-rate credit promotion. The bank is located in a town that recently experienced economic hardship. Only some of the bank's customers were affected by the crisis, so the bank's credit team must identify which customers to target with the promotion. However, the credit team wants to make sure that loyal customers' full credit history is considered when the decision is made.

The bank's data science team developed a model that classifies account transactions and understands credit eligibility. The data science team used the XGBoost algorithm to train the model. The team used 7 years of bank transaction historical data for training and hyperparameter tuning over the course of several days. The accuracy of the model is sufficient, but the credit team is struggling to explain accurately why the model denies credit to some customers. The credit team has almost no skill in data science.

What should the data science team do to address this issue in the MOST operationally efficient manner?

- A. Use Amazon SageMaker Studio to rebuild the model.
- B. Create a notebook that uses the XGBoost training container to perform model training.
- C. Deploy the model at an endpoint.
- D. Enable Amazon SageMaker Model Monitor to store inference.
- E. Use the inferences to create Shapley values that help explain model behavior.
- F. Create a chart that shows features and SHapley Additive explanation (SHAP) values to explain to the credit team how the features affect the model outcomes.
- G. Use Amazon SageMaker Studio to rebuild the model.
- H. Create a notebook that uses the XGBoost training container to perform model training.
- I. Activate Amazon SageMaker Debugger, and configure it to calculate and collect Shapley values.
- J. Create a chart that shows features and SHapley Additive explanation (SHAP) values to explain to the credit team how the features affect the model outcomes.
- K. Create an Amazon SageMaker notebook instance.
- L. Use the notebook instance and the XGBoost library to locally retrain the model.
- M. Use the `plot_importance()` method in the Python XGBoost interface to create a feature importance chart.
- N. Use that chart to explain to the credit team how the features affect the model outcomes.
- O. Use Amazon SageMaker Studio to rebuild the model.
- P. Create a notebook that uses the XGBoost training container to perform model training.
- Q. Deploy the model at an endpoint.
- R. Use Amazon SageMaker Processing to post-analyze the model and create a feature importance explainability chart automatically for the credit team.

**Answer:** C

#### NEW QUESTION 14

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 16

A Machine Learning Specialist deployed a model that provides product recommendations on a company's website. Initially, the model was performing very well and resulted in customers buying more products on average. However, within the past few months, the Specialist has noticed that the effect of product recommendations has diminished and customers are starting to return to their original habits of spending less. The Specialist is unsure of what happened, as the model has not changed from its initial deployment over a year ago.

Which method should the Specialist try to improve model performance?

- A. The model needs to be completely re-engineered because it is unable to handle product inventory changes.
- B. The model's hyperparameters should be periodically updated to prevent drift.
- C. The model should be periodically retrained from scratch using the original data while adding a regularization term to handle product inventory changes.
- D. The model should be periodically retrained using the original training data plus new data as product inventory changes.

**Answer:** D



#### NEW QUESTION 21

A company is setting up an Amazon SageMaker environment. The corporate data security policy does not allow communication over the internet. How can the company enable the Amazon SageMaker service without enabling direct internet access to Amazon SageMaker notebook instances?

- A. Create a NAT gateway within the corporate VPC.
- B. Route Amazon SageMaker traffic through an on-premises network.
- C. Create Amazon SageMaker VPC interface endpoints within the corporate VPC.
- D. Create VPC peering with Amazon VPC hosting Amazon SageMaker.

**Answer:** A

#### NEW QUESTION 24

A Machine Learning team runs its own training algorithm on Amazon SageMaker. The training algorithm requires external assets. The team needs to submit both its own algorithm code and algorithm-specific parameters to Amazon SageMaker.

What combination of services should the team use to build a custom algorithm in Amazon SageMaker? (Choose two.)

- A. AWS Secrets Manager
- B. AWS CodeStar
- C. Amazon ECR
- D. Amazon ECS
- E. Amazon S3

**Answer:** CE

#### NEW QUESTION 25

A company wants to use automatic speech recognition (ASR) to transcribe messages that are less than 60 seconds long from a voicemail-style application. The company requires the correct identification of 200 unique product names, some of which have unique spellings or pronunciations.

The company has 4,000 words of Amazon SageMaker Ground Truth voicemail transcripts it can use to customize the chosen ASR model. The company needs to ensure that everyone can update their customizations multiple times each hour.

Which approach will maximize transcription accuracy during the development phase?

- A. Use a voice-driven Amazon Lex bot to perform the ASR customizatio
- B. Create customer slots within the bot that specifically identify each of the required product name
- C. Use the Amazon Lex synonym mechanism to provide additional variations of each product name as mis-transcriptions are identified in development.
- D. Use Amazon Transcribe to perform the ASR customizatio
- E. Analyze the word confidence scores in the transcript, and automatically create or update a custom vocabulary file with any word that has a confidence score below an acceptable threshold valu
- F. Use this updated custom vocabulary file in all future transcription tasks.
- G. Create a custom vocabulary file containing each product name with phonetic pronunciations, and use it with Amazon Transcribe to perform the ASR customizatio
- H. Analyze the transcripts and manually update the custom vocabulary file to include updated or additional entries for those names that are not being correctly identified.
- I. Use the audio transcripts to create a training dataset and build an Amazon Transcribe custom language mode
- J. Analyze the transcripts and update the training dataset with a manually corrected version of transcripts where product names are not being transcribed correctl
- K. Create an updated custom language model.

**Answer:** A

#### NEW QUESTION 28

A Data Scientist needs to migrate an existing on-premises ETL process to the cloud The current process runs at regular time intervals and uses PySpark to combine and format multiple large data sources into a single consolidated output for downstream processing

The Data Scientist has been given the following requirements for the cloud solution

- \* Combine multiple data sources
- \* Reuse existing PySpark logic
- \* Run the solution on the existing schedule
- \* Minimize the number of servers that will need to be managed

Which architecture should the Data Scientist use to build this solution?

- A. Write the raw data to Amazon S3 Schedule an AWS Lambda function to submit a Spark step to a persistent Amazon EMR cluster based on the existing schedule Use the existing PySpark logic to run the ETL job on the EMR cluster Output the results to a "processed" location m Amazon S3 that is accessible tor downstream use
- B. Write the raw data to Amazon S3 Create an AWS Glue ETL job to perform the ETL processing against the input data Write the ETL job in PySpark to leverage the existing logic Create a new AWS Glue trigger to trigger the ETL job based on the existing schedule Configure the output target of the ETL job to write to a "processed" location in Amazon S3 that is accessible for downstream use.
- C. Write the raw data to Amazon S3 Schedule an AWS Lambda function to run on the existing schedule and process the input data from Amazon S3 Write the Lambda logic in Python and implement the existing PySpartc logic to perform the ETL process Have the Lambda function output the results to a "processed" location in Amazon S3 that is accessible for downstream use
- D. Use Amazon Kinesis Data Analytics to stream the input data and perform realtime SQL queries against the stream to carry out the required transformations within the stream Deliver the output results to a "processed" location in Amazon S3 that is accessible for downstream use

**Answer:** A

#### NEW QUESTION 30

A large company has developed a B1 application that generates reports and dashboards using data collected from various operational metrics The company wants to provide executives with an enhanced experience so they can use natural language to get data from the reports The company wants the executives to be able ask questions using written and spoken interlaces

Which combination of services can be used to build this conversational interface? (Select THREE )

- A. Alexa for Business
- B. Amazon Connect
- C. Amazon Lex
- D. Amazon Poly
- E. Amazon Comprehend
- F. Amazon Transcribe

**Answer:** BEF

#### NEW QUESTION 31

A data scientist is developing a pipeline to ingest streaming web traffic data. The data scientist needs to implement a process to identify unusual web traffic patterns as part of the pipeline. The patterns will be used downstream for alerting and incident response. The data scientist has access to unlabeled historic data to use, if needed.

The solution needs to do the following:

- > Calculate an anomaly score for each web traffic entry.
- > Adapt unusual event identification to changing web patterns over time. Which approach should the data scientist implement to meet these requirements?

- A. Use historic web traffic data to train an anomaly detection model using the Amazon SageMaker Random Cut Forest (RCF) built-in mode
- B. Use an Amazon Kinesis Data Stream to process the incoming webtrafficdat
- C. Attach a preprocessing AWS Lambda function to perform data enrichment by calling the RCF modelto calculate the anomaly score for each record.
- D. Use historic web traffic data to train an anomaly detection model using the Amazon SageMaker built-inXGBoost mode
- E. Use an Amazon Kinesis Data Stream to process the incoming web traffic dat
- F. Attach apreprocessing AWS Lambda function to perform data enrichment by calling the XGBoost model to calculate the anomaly score for each record.
- G. Collect the streaming data using Amazon Kinesis Data Firehos
- H. Map the delivery stream as an inputsource for Amazon Kinesis Data Analytic
- I. Write a SQL query to run in real time against the streaming datawith the k-Nearest Neighbors (kNN) SQL extension to calculate anomaly scores for each record using a tumbling window.
- J. Collect the streaming data using Amazon Kinesis Data Firehos
- K. Map the delivery stream as an inputsource for Amazon Kinesis Data Analytic
- L. Write a SQL query to run in real time against the streaming datawith the Amazon Random Cut Forest (RCF) SQL extension to calculate anomaly scores for each record using a sliding window.

**Answer:** D

#### NEW QUESTION 36

A Machine Learning Specialist is configuring automatic model tuning in Amazon SageMaker

When using the hyperparameter optimization feature, which of the following guidelines should be followed to improve optimization?

Choose the maximum number of hyperparameters supported by

- A. Amazon SageMaker to search the largest number of combinations possible
- B. Specify a very large hyperparameter range to allow Amazon SageMaker to cover every possible value.
- C. Use log-scaled hyperparameters to allow the hyperparameter space to be searched as quickly as possible
- D. Execute only one hyperparameter tuning job at a time and improve tuning through successive rounds of experiments

**Answer:** C

#### NEW QUESTION 41

A Machine Learning Specialist is packaging a custom ResNet model into a Docker container so the company can leverage Amazon SageMaker for training The Specialist is using Amazon EC2 P3 instances to train the model and needs to properly configure the Docker container to leverage the NVIDIA GPUs What does the Specialist need to do1?

- A. Bundle the NVIDIA drivers with the Docker image
- B. Build the Docker container to be NVIDIA-Docker compatible
- C. Organize the Docker container's file structure to execute on GPU instances.
- D. Set the GPU flag in the Amazon SageMaker Create TrainingJob request body

**Answer:** A

#### NEW QUESTION 42

A machine learning (ML) specialist wants to secure calls to the Amazon SageMaker Service API. The specialist has configured Amazon VPC with a VPC interface endpoint for the Amazon SageMaker Service API and is attempting to secure traffic from specific sets of instances and IAM users. The VPC is configured with a single public subnet.

Which combination of steps should the ML specialist take to secure the traffic? (Choose two.)

- A. Add a VPC endpoint policy to allow access to the IAM users.
- B. Modify the users' IAM policy to allow access to Amazon SageMaker Service API calls only.
- C. Modify the security group on the endpoint network interface to restrict access to the instances.
- D. Modify the ACL on the endpoint network interface to restrict access to the instances.
- E. Add a SageMaker Runtime VPC endpoint interface to the VPC.

**Answer:** AC

#### NEW QUESTION 45

A Data Scientist received a set of insurance records, each consisting of a record ID, the final outcome among 200 categories, and the date of the final outcome. Some partial information on claim contents is also provided, but only for a few of the 200 categories. For each outcome category, there are hundreds of records distributed over the past 3 years. The Data Scientist wants to predict how many claims to expect in each category from month to month, a few months in advance. What type of machine learning model should be used?

- A. Classification month-to-month using supervised learning of the 200 categories based on claim contents.
- B. Reinforcement learning using claim IDs and timestamps where the agent will identify how many claims in each category to expect from month to month.
- C. Forecasting using claim IDs and timestamps to identify how many claims in each category to expect from month to month.
- D. Classification with supervised learning of the categories for which partial information on claim contents is provided, and forecasting using claim IDs and timestamps for all other categories.

**Answer:** C

#### NEW QUESTION 48

An ecommerce company is automating the categorization of its products based on images. A data scientist has trained a computer vision model using the Amazon SageMaker image classification algorithm. The images for each product are classified according to specific product lines. The accuracy of the model is too low when categorizing new products. All of the product images have the same dimensions and are stored within an Amazon S3 bucket. The company wants to improve the model so it can be used for new products as soon as possible.

Which steps would improve the accuracy of the solution? (Choose three.)

- A. Use the SageMaker semantic segmentation algorithm to train a new model to achieve improved accuracy.
- B. Use the Amazon Rekognition DetectLabels API to classify the products in the dataset.
- C. Augment the images in the dataset
- D. Use open source libraries to crop, resize, flip, rotate, and adjust the brightness and contrast of the images.
- E. Use a SageMaker notebook to implement the normalization of pixels and scaling of the image
- F. Store the new dataset in Amazon S3.
- G. Use Amazon Rekognition Custom Labels to train a new model.
- H. Check whether there are class imbalances in the product categories, and apply oversampling or undersampling as require
- I. Store the new dataset in Amazon S3.

**Answer:** BCE

#### NEW QUESTION 52

A Data Scientist is working on an application that performs sentiment analysis. The validation accuracy is poor and the Data Scientist thinks that the cause may be a rich vocabulary and a low average frequency of words in the dataset

Which tool should be used to improve the validation accuracy?

- A. Amazon Comprehend syntax analysts and entity detection
- B. Amazon SageMaker BlazingText allow mode
- C. Natural Language Toolkit (NLTK) stemming and stop word removal
- D. Scikit-learn term frequency-inverse document frequency (TF-IDF) vectorizers

**Answer:** A

#### NEW QUESTION 55

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 58

A Machine Learning Specialist is building a convolutional neural network (CNN) that will classify 10 types of animals. The Specialist has built a series of layers in a neural network that will take an input image of an animal, pass it through a series of convolutional and pooling layers, and then finally pass it through a dense and fully connected layer with 10 nodes. The Specialist would like to get an output from the neural network that is a probability distribution of how likely it is that the input image belongs to each of the 10 classes.

Which function will produce the desired output?

- A. Dropout
- B. Smooth L1 loss
- C. Softmax
- D. Rectified linear units (ReLU)

**Answer:** C

#### NEW QUESTION 59

A machine learning (ML) specialist must develop a classification model for a financial services company. A domain expert provides the dataset, which is tabular with 10,000 rows and 1,020 features. During exploratory data analysis, the specialist finds no missing values and a small percentage of duplicate rows. There are correlation scores of  $> 0.9$  for 200 feature pairs. The mean value of each feature is similar to its 50th percentile.

Which feature engineering strategy should the ML specialist use with Amazon SageMaker?

- A. Apply dimensionality reduction by using the principal component analysis (PCA) algorithm.
- B. Drop the features with low correlation scores by using a Jupyter notebook.
- C. Apply anomaly detection by using the Random Cut Forest (RCF) algorithm.
- D. Concatenate the features with high correlation scores by using a Jupyter notebook.

**Answer:** C

#### NEW QUESTION 62

A real estate company wants to create a machine learning model for predicting housing prices based on a historical dataset. The dataset contains 32 features. Which model will meet the business requirement?

- A. Logistic regression
- B. Linear regression
- C. K-means
- D. Principal component analysis (PCA)

**Answer:** B

#### NEW QUESTION 65

A large JSON dataset for a project has been uploaded to a private Amazon S3 bucket. The Machine Learning Specialist wants to securely access and explore the data from an Amazon SageMaker notebook instance. A new VPC was created and assigned to the Specialist. How can the privacy and integrity of the data stored in Amazon S3 be maintained while granting access to the Specialist for analysis?

- A. Launch the SageMaker notebook instance within the VPC with SageMaker-provided internet access enabled. Use an S3 ACL to open read privileges to the everyone group.
- B. Launch the SageMaker notebook instance within the VPC and create an S3 VPC endpoint for the notebook to access the data. Copy the JSON dataset from Amazon S3 into the ML storage volume on the SageMaker notebook instance and work against the local dataset.
- C. Launch the SageMaker notebook instance within the VPC and create an S3 VPC endpoint for the notebook to access the data. Define a custom S3 bucket policy to only allow requests from your VPC to access the S3 bucket.
- D. Launch the SageMaker notebook instance within the VPC with SageMaker-provided internet access enabled.
- E. Generate an S3 pre-signed URL for access to data in the bucket.

**Answer:** B

#### NEW QUESTION 66

A Machine Learning Specialist is deciding between building a naive Bayesian model or a full Bayesian network for a classification problem. The Specialist computes the Pearson correlation coefficients between each feature and finds that their absolute values range between 0.1 to 0.95. Which model describes the underlying data in this situation?

- A. A naive Bayesian model, since the features are all conditionally independent.
- B. A full Bayesian network, since the features are all conditionally independent.
- C. A naive Bayesian model, since some of the features are statistically dependent.
- D. A full Bayesian network, since some of the features are statistically dependent.

**Answer:** C

#### NEW QUESTION 67

A Machine Learning Specialist needs to create a data repository to hold a large amount of time-based training data for a new model. In the source system, new files are added every hour. Throughout a single 24-hour period, the volume of hourly updates will change significantly. The Specialist always wants to train on the last 24 hours of the data.

Which type of data repository is the MOST cost-effective solution?

- A. An Amazon EBS-backed Amazon EC2 instance with hourly directories.
- B. An Amazon RDS database with hourly table partitions.
- C. An Amazon S3 data lake with hourly object prefixes.
- D. An Amazon EMR cluster with hourly hive partitions on Amazon EBS volumes.

**Answer:** C

#### NEW QUESTION 70

A machine learning (ML) specialist needs to extract embedding vectors from a text series. The goal is to provide a ready-to-ingest feature space for a data scientist to develop downstream ML predictive models. The text consists of curated sentences in English. Many sentences use similar words but in different contexts. There are questions and answers among the sentences, and the embedding space must differentiate between them.

Which options can produce the required embedding vectors that capture word context and sequential QA information? (Choose two.)

- A. Amazon SageMaker seq2seq algorithm
- B. Amazon SageMaker BlazingText algorithm in Skip-gram mode
- C. Amazon SageMaker Object2Vec algorithm
- D. Amazon SageMaker BlazingText algorithm in continuous bag-of-words (CBOW) mode
- E. Combination of the Amazon SageMaker BlazingText algorithm in Batch Skip-gram mode with a custom recurrent neural network (RNN)

**Answer:** AC

#### NEW QUESTION 73

Amazon Connect has recently been tolled out across a company as a contact call center. The solution has been configured to store voice call recordings on Amazon S3.

The content of the voice calls are being analyzed for the incidents being discussed by the call operators. Amazon Transcribe is being used to convert the audio to text, and the output is stored on Amazon S3.

Which approach will provide the information required for further analysis?

- A. Use Amazon Comprehend with the transcribed files to build the key topics.
- B. Use Amazon Translate with the transcribed files to train and build a model for the key topics.



- C. Use the AWS Deep Learning AMI with Gluon Semantic Segmentation on the transcribed files to train and build a model for the key topics
- D. Use the Amazon SageMaker k-Nearest-Neighbors (kNN) algorithm on the transcribed files to generate a word embeddings dictionary for the key topics

**Answer:** B

#### NEW QUESTION 77

A financial company is trying to detect credit card fraud. The company observed that, on average, 2% of credit card transactions were fraudulent. A data scientist trained a classifier on a year's worth of credit card transactions data. The model needs to identify the fraudulent transactions (positives) from the regular ones (negatives). The company's goal is to accurately capture as many positives as possible. Which metrics should the data scientist use to optimize the model? (Choose two.)

- A. Specificity
- B. False positive rate
- C. Accuracy
- D. Area under the precision-recall curve
- E. True positive rate

**Answer:** DE

#### NEW QUESTION 80

A company supplies wholesale clothing to thousands of retail stores. A data scientist must create a model that predicts the daily sales volume for each item for each store. The data scientist discovers that more than half of the stores have been in business for less than 6 months. Sales data is highly consistent from week to week. Daily data from the database has been aggregated weekly, and weeks with no sales are omitted from the current dataset. Five years (100 MB) of sales data is available in Amazon S3.

Which factors will adversely impact the performance of the forecast model to be developed, and which actions should the data scientist take to mitigate them? (Choose two.)

- A. Detecting seasonality for the majority of stores will be an issue
- B. Request categorical data to relate new stores with similar stores that have more historical data.
- C. The sales data does not have enough variance
- D. Request external sales data from other industries to improve the model's ability to generalize.
- E. Sales data is aggregated by week
- F. Request daily sales data from the source database to enable building a daily model.
- G. The sales data is missing zero entries for item sale
- H. Request that item sales data from the source database include zero entries to enable building the model.
- I. Only 100 MB of sales data is available in Amazon S3. Request 10 years of sales data, which would provide 200 MB of training data for the model.

**Answer:** AB

#### NEW QUESTION 83

A Machine Learning Specialist is working for a credit card processing company and receives an unbalanced dataset containing credit card transactions. It contains 99,000 valid transactions and 1,000 fraudulent transactions. The Specialist is asked to score a model that was run against the dataset. The Specialist has been advised that identifying valid transactions is equally as important as identifying fraudulent transactions. What metric is BEST suited to score the model?

- A. Precision
- B. Recall
- C. Area Under the ROC Curve (AUC)
- D. Root Mean Square Error (RMSE)

**Answer:** A

#### NEW QUESTION 86

A data engineer at a bank is evaluating a new tabular dataset that includes customer data. The data engineer will use the customer data to create a new model to predict customer behavior. After creating a correlation matrix for the variables, the data engineer notices that many of the 100 features are highly correlated with each other.

Which steps should the data engineer take to address this issue? (Choose two.)

- A. Use a linear-based algorithm to train the model.
- B. Apply principal component analysis (PCA).
- C. Remove a portion of highly correlated features from the dataset.
- D. Apply min-max feature scaling to the dataset.
- E. Apply one-hot encoding category-based variables.

**Answer:** BD

#### NEW QUESTION 87

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 90**

A company is building a demand forecasting model based on machine learning (ML). In the development stage, an ML specialist uses an Amazon SageMaker notebook to perform feature engineering during work hours that consumes low amounts of CPU and memory resources. A data engineer uses the same notebook to perform data preprocessing once a day on average that requires very high memory and completes in only 2 hours. The data preprocessing is not configured to use GPU. All the processes are running well on an ml.m5.4xlarge notebook instance.

The company receives an AWS Budgets alert that the billing for this month exceeds the allocated budget. Which solution will result in the MOST cost savings?

- A. Change the notebook instance type to a memory optimized instance with the same vCPU number as the ml.m5.4xlarge instance ha
- B. Stop the notebook when it is not in use
- C. Run both data preprocessing and feature engineering development on that instance.
- D. Keep the notebook instance type and size the same
- E. Stop the notebook when it is not in use
- F. Run data preprocessing on a P3 instance type with the same memory as the ml.m5.4xlarge instance by using Amazon SageMaker Processing.
- G. Change the notebook instance type to a smaller general purpose instance
- H. Stop the notebook when it is not in use
- I. Run data preprocessing on an ml.r5 instance with the same memory size as the ml.m5.4xlarge instance by using Amazon SageMaker Processing.
- J. Change the notebook instance type to a smaller general purpose instance
- K. Stop the notebook when it is not in use
- L. Run data preprocessing on an R5 instance with the same memory size as the ml.m5.4xlarge instance by using the Reserved Instance option.

**Answer: B**

**NEW QUESTION 94**

A Machine Learning Specialist is attempting to build a linear regression model.

Given the displayed residual plot only, what is the MOST likely problem with the model?

- A. Linear regression is inappropriate
- B. The residuals do not have constant variance.
- C. Linear regression is inappropriate
- D. The underlying data has outliers.
- E. Linear regression is appropriate
- F. The residuals have a zero mean.
- G. Linear regression is appropriate
- H. The residuals have constant variance.

**Answer: D**

**NEW QUESTION 95**

A Data Science team within a large company uses Amazon SageMaker notebooks to access data stored in Amazon S3 buckets. The IT Security team is concerned that internet-enabled notebook instances create a security vulnerability where malicious code running on the instances could compromise data privacy. The company mandates that all instances stay within a secured VPC with no internet access, and data communication traffic must stay within the AWS network. How should the Data Science team configure the notebook instance placement to meet these requirements?

- A. Associate the Amazon SageMaker notebook with a private subnet in a VPC
- B. Place the Amazon SageMaker endpoint and S3 buckets within the same VPC.
- C. Associate the Amazon SageMaker notebook with a private subnet in a VPC
- D. Use IAM policies to grant access to Amazon S3 and Amazon SageMaker.
- E. Associate the Amazon SageMaker notebook with a private subnet in a VPC
- F. Ensure the VPC has S3 VPC endpoints and Amazon SageMaker VPC endpoints attached to it.
- G. Associate the Amazon SageMaker notebook with a private subnet in a VPC
- H. Ensure the VPC has a NAT gateway and an associated security group allowing only outbound connections to Amazon S3 and Amazon SageMaker

**Answer: D**

**NEW QUESTION 100**

A company wants to create a data repository in the AWS Cloud for machine learning (ML) projects. The company wants to use AWS to perform complete ML lifecycles and wants to use Amazon S3 for the data storage. All of the company's data currently resides on premises and is 40 TB in size.

The company wants a solution that can transfer and automatically update data between the on-premises object storage and Amazon S3. The solution must support encryption, scheduling, monitoring, and data integrity validation.

Which solution meets these requirements?

- A. Use the S3 sync command to compare the source S3 bucket and the destination S3 bucket
- B. Determine which source files do not exist in the destination S3 bucket and which source files were modified.
- C. Use AWS Transfer for FTPS to transfer the files from the on-premises storage to Amazon S3.
- D. Use AWS DataSync to make an initial copy of the entire dataset
- E. Schedule subsequent incremental transfers of changing data until the final cutover from on premises to AWS.
- F. Use S3 Batch Operations to pull data periodically from the on-premises storage
- G. Enable S3 Versioning on the S3 bucket to protect against accidental overwrites.

**Answer: C**

**Explanation:**

Configure DataSync to make an initial copy of your entire dataset, and schedule subsequent incremental transfers of changing data until the final cut-over from on-premises to AWS.

**NEW QUESTION 102**

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 issue1?

- 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 106

A machine learning specialist is running an Amazon SageMaker endpoint using the built-in object detection algorithm on a P3 instance for real-time predictions in a company's production application. When evaluating the model's resource utilization, the specialist notices that the model is using only a fraction of the GPU. Which architecture changes would ensure that provisioned resources are being utilized effectively?

- A. Redeploy the model as a batch transform job on an M5 instance.
- B. Redeploy the model on an M5 instanc
- C. Attach Amazon Elastic Inference to the instance.
- D. Redeploy the model on a P3dn instance.
- E. Deploy the model onto an Amazon Elastic Container Service (Amazon ECS) cluster using a P3 instance.

**Answer:** B

#### Explanation:

<https://aws.amazon.com/machine-learning/elastic-inference/>

#### NEW QUESTION 109

A credit card company wants to build a credit scoring model to help predict whether a new credit card applicant will default on a credit card payment. The company has collected data from a large number of sources with thousands of raw attributes. Early experiments to train a classification model revealed that many attributes are highly correlated, the large number of features slows down the training speed significantly, and that there are some overfitting issues. The Data Scientist on this project would like to speed up the model training time without losing a lot of information from the original dataset. Which feature engineering technique should the Data Scientist use to meet the objectives?

- A. Run self-correlation on all features and remove highly correlated features
- B. Normalize all numerical values to be between 0 and 1
- C. Use an autoencoder or principal component analysis (PCA) to replace original features with new features
- D. Cluster raw data using k-means and use sample data from each cluster to build a new dataset

**Answer:** B

#### NEW QUESTION 112

A Machine Learning Specialist is using an Amazon SageMaker notebook instance in a private subnet of a corporate VPC. The ML Specialist has important data stored on the Amazon SageMaker notebook instance's Amazon EBS volume, and needs to take a snapshot of that EBS volume. However the ML Specialist cannot find the Amazon SageMaker notebook instance's EBS volume or Amazon EC2 instance within the VPC. Why is the ML Specialist not seeing the instance visible in the VPC?

- A. Amazon SageMaker notebook instances are based on the EC2 instances within the customer account, but they run outside of VPCs.
- B. Amazon SageMaker notebook instances are based on the Amazon ECS service within customer accounts.
- C. Amazon SageMaker notebook instances are based on EC2 instances running within AWS serviceaccounts.
- D. Amazon SageMaker notebook instances are based on AWS ECS instances running within AWS service accounts.

**Answer:** C

#### NEW QUESTION 116

A manufacturing company uses machine learning (ML) models to detect quality issues. The models use images that are taken of the company's product at the end of each production step. The company has thousands of machines at the production site that generate one image per second on average. The company ran a successful pilot with a single manufacturing machine. For the pilot, ML specialists used an industrial PC that ran AWS IoT Greengrass with a long-running AWS Lambda function that uploaded the images to Amazon S3. The uploaded images invoked a Lambda function that was written in Python to perform inference by using an Amazon SageMaker endpoint that ran a custom model. The inference results were forwarded back to a web service that was hosted at the production site to prevent faulty products from being shipped. The company scaled the solution out to all manufacturing machines by installing similarly configured industrial PCs on each production machine. However, latency for predictions increased beyond acceptable limits. Analysis shows that the internet connection is at its capacity limit. How can the company resolve this issue MOST cost-effectively?

- A. Set up a 10 Gbps AWS Direct Connect connection between the production site and the nearest AWS Region
- B. Use the Direct Connect connection to upload the image
- C. Increase the size of the instances and the number of instances that are used by the SageMaker endpoint.
- D. Extend the long-running Lambda function that runs on AWS IoT Greengrass to compress the images and upload the compressed files to Amazon S3. Decompress the files by using a separate Lambda function that invokes the existing Lambda function to run the inference pipeline.
- E. Use auto scaling for SageMake
- F. Set up an AWS Direct Connect connection between the production site and the nearest AWS Region
- G. Use the Direct Connect connection to upload the images.
- H. Deploy the Lambda function and the ML models onto the AWS IoT Greengrass core that is running on the industrial PCs that are installed on each machin
- I. Extend the long-running Lambda function that runs on AWS IoT Greengrass to invoke the Lambda function with the captured images and run the inference on the edge component that forwards the results directly to the web service.

**Answer:** D

#### NEW QUESTION 121

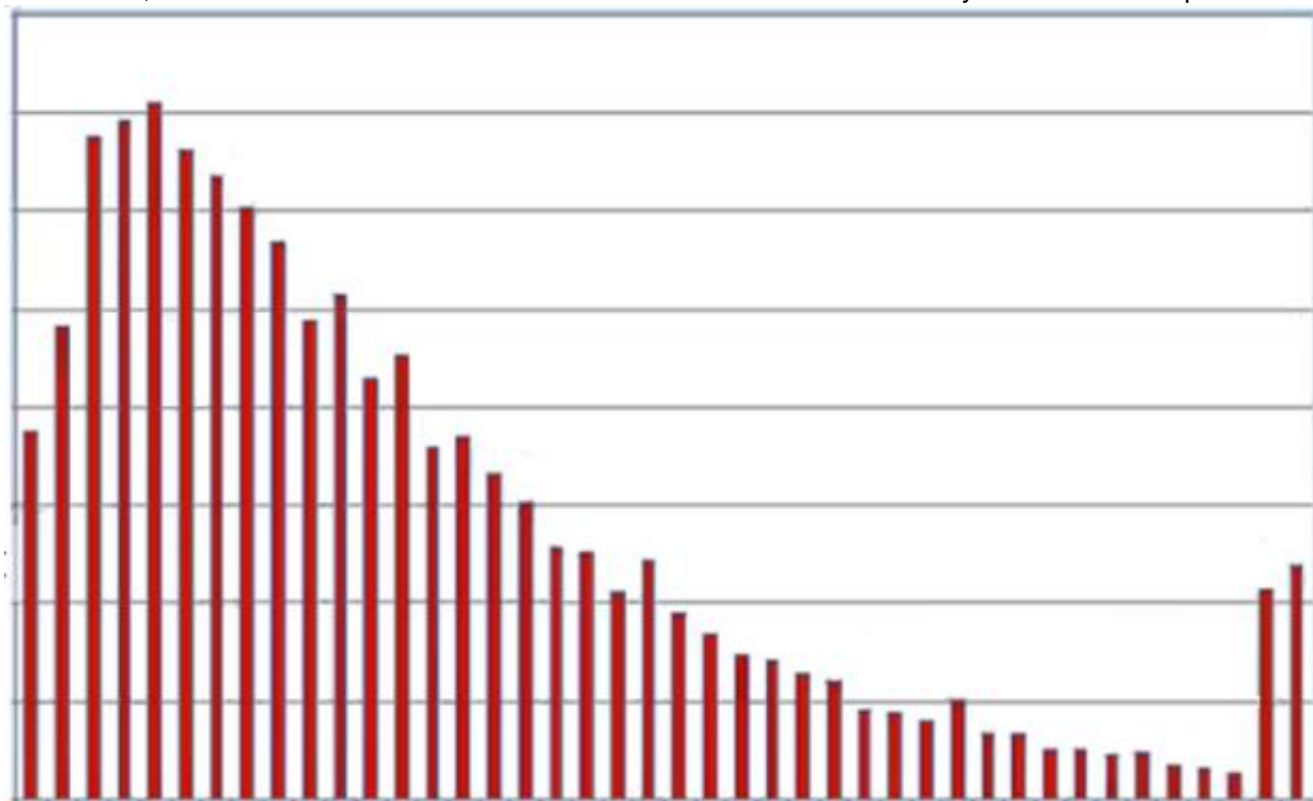
A company provisions Amazon SageMaker notebook instances for its data science team and creates Amazon VPC interface endpoints to ensure communication between the VPC and the notebook instances. All connections to the Amazon SageMaker API are contained entirely and securely using the AWS network. However, the data science team realizes that individuals outside the VPC can still connect to the notebook instances across the internet. Which set of actions should the data science team take to fix the issue?

- A. Modify the notebook instances' security group to allow traffic only from the CIDR ranges of the VP
- B. Apply this security group to all of the notebook instances' VPC interfaces.
- C. Create an IAM policy that allows the sagemaker:CreatePresignedNotebookInstanceUrl and sagemaker:DescribeNotebookInstance actions from only the VPC endpoint
- D. Apply this policy to all IAM users, groups, and roles used to access the notebook instances.
- E. Add a NAT gateway to the VP
- F. Convert all of the subnets where the Amazon SageMaker notebook instances are hosted to private subnet
- G. Stop and start all of the notebook instances to reassign only private IP addresses.
- H. Change the network ACL of the subnet the notebook is hosted in to restrict access to anyone outside the VPC.

**Answer: B**

#### NEW QUESTION 125

A Data Scientist is building a linear regression model and will use resulting p-values to evaluate the statistical significance of each coefficient. Upon inspection of the dataset, the Data Scientist discovers that most of the features are normally distributed. The plot of one feature in the dataset is shown in the graphic.



What transformation should the Data Scientist apply to satisfy the statistical assumptions of the linear regression model?

- A. Exponential transformation
- B. Logarithmic transformation
- C. Polynomial transformation
- D. Sinusoidal transformation

**Answer: A**

#### NEW QUESTION 128

A monitoring service generates 1 TB of scale metrics record data every minute A Research team performs queries on this data using Amazon Athena The queries run slowly due to the large volume of data, and the team requires better performance How should the records be stored in Amazon S3 to improve query performance?

- A. CSV files
- B. Parquet files
- C. Compressed JSON
- D. RecordIO

**Answer: D**

#### NEW QUESTION 131

A Machine Learning Specialist is working with a large company to leverage machine learning within its products. The company wants to group its customers into categories based on which customers will and will not churn within the next 6 months. The company has labeled the data available to the Specialist. Which machine learning model type should the Specialist use to accomplish this task?

- A. Linear regression
- B. Classification
- C. Clustering
- D. Reinforcement learning

**Answer: B**

#### Explanation:

The goal of classification is to determine to which class or category a data point (customer in our case) belongs to. For classification problems, data scientists would use historical data with predefined target variables AKA labels (churner/non-churner) – answers that need to be predicted – to train an algorithm. With



classification, businesses can answer the following questions:

- Will this customer churn or not?
- Will a customer renew their subscription?
- Will a user downgrade a pricing plan?
- Are there any signs of unusual customer behavior?

#### NEW QUESTION 132

A Machine Learning Specialist is building a prediction model for a large number of features using linear models, such as linear regression and logistic regression. During exploratory data analysis the Specialist observes that many features are highly correlated with each other. This may make the model unstable. What should be done to reduce the impact of having such a large number of features?

- A. Perform one-hot encoding on highly correlated features.
- B. Use matrix multiplication on highly correlated features.
- C. Create a new feature space using principal component analysis (PCA).
- D. Apply the Pearson correlation coefficient.

**Answer:** B

#### NEW QUESTION 137

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:** A

#### NEW QUESTION 142

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:** C

#### NEW QUESTION 145

A company uses camera images of the tops of items displayed on store shelves to determine which items were removed and which ones still remain. After several hours of data labeling, the company has a total of 1,000 hand-labeled images covering 10 distinct items. The training results were poor. Which machine learning approach fulfills the company's long-term needs?

- A. Convert the images to grayscale and retrain the model.
- B. Reduce the number of distinct items from 10 to 2, build the model, and iterate.
- C. Attach different colored labels to each item, take the images again, and build the model.
- D. Augment training data for each item using image variants like inversions and translations, build the model, and iterate.

**Answer:** A

#### NEW QUESTION 146

A company that manufactures mobile devices wants to determine and calibrate the appropriate sales price for its devices. The company is collecting the relevant data and is determining data features that it can use to train machine learning (ML) models. There are more than 1,000 features, and the company wants to determine the primary features that contribute to the sales price. Which techniques should the company use for feature selection? (Choose three.)

- A. Data scaling with standardization and normalization
- B. Correlation plot with heat maps
- C. Data binning
- D. Univariate selection
- E. Feature importance with a tree-based classifier
- F. Data augmentation

**Answer:** CDE

#### NEW QUESTION 148

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:** B

#### NEW QUESTION 153

A Machine Learning Specialist has completed a proof of concept for a company using a small data sample and now the Specialist is ready to implement an end-to-end solution in AWS using Amazon SageMaker. The historical training data is stored in Amazon RDS.  
Which approach should the Specialist use for training a model using that data?

- A. Write a direct connection to the SQL database within the notebook and pull data in
- B. Push the data from Microsoft SQL Server to Amazon S3 using an AWS Data Pipeline and provide the S3 location within the notebook.
- C. Move the data to Amazon DynamoDB and set up a connection to DynamoDB within the notebook to pull data in
- D. Move the data to Amazon ElastiCache using AWS DMS and set up a connection within the notebook to pull data in for fast access.

**Answer:** B

#### NEW QUESTION 154

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 156

A Machine Learning Specialist receives customer data for an online shopping website. The data includes demographics, past visits, and locality information. The Specialist must develop a machine learning approach to identify the customer shopping patterns, preferences and trends to enhance the website for better service and smart recommendations.  
Which solution should the Specialist recommend?

- A. Latent Dirichlet Allocation (LDA) for the given collection of discrete data to identify patterns in the customer database.
- B. A neural network with a minimum of three layers and random initial weights to identify patterns in the customer database
- C. Collaborative filtering based on user interactions and correlations to identify patterns in the customer database
- D. Random Cut Forest (RCF) over random subsamples to identify patterns in the customer database

**Answer:** C

#### NEW QUESTION 158

A telecommunications company is developing a mobile app for its customers. The company is using an Amazon SageMaker hosted endpoint for machine learning model inferences.

Developers want to introduce a new version of the model for a limited number of users who subscribed to a preview feature of the app. After the new version of the model is tested as a preview, developers will evaluate its accuracy. If a new version of the model has better accuracy, developers need to be able to gradually release the new version for all users over a fixed period of time.

How can the company implement the testing model with the LEAST amount of operational overhead?

- A. Update the ProductionVariant data type with the new version of the model by using the CreateEndpointConfig operation with the InitialVariantWeight parameter set to 0. Specify the TargetVariant parameter for InvokeEndpoint calls for users who subscribed to the preview feature
- B. When the new version of the model is ready for release, gradually increase InitialVariantWeight until all users have the updated version.
- C. Configure two SageMaker hosted endpoints that serve the different versions of the model
- D. Create an Application Load Balancer (ALB) to route traffic to both endpoints based on the TargetVariant query string parameter
- E. Reconfigure the app to send the TargetVariant query string parameter for users who subscribed to the preview feature
- F. When the new version of the model is ready for release, change the ALB's routing algorithm to weighted until all users have the updated version.
- G. Update the DesiredWeightsAndCapacity data type with the new version of the model by using the UpdateEndpointWeightsAndCapacities operation with the DesiredWeight parameter set to 0. Specify the TargetVariant parameter for InvokeEndpoint calls for users who subscribed to the preview feature
- H. When the new version of the model is ready for release, gradually increase DesiredWeight until all users have the updated version.
- I. Configure two SageMaker hosted endpoints that serve the different versions of the model
- J. Create an Amazon Route 53 record that is configured with a simple routing policy and that points to the current version of the model
- K. Configure the mobile app to use the endpoint URL for users who subscribed to the preview feature and to use the Route 53 record for other users
- L. When the new version of the model is ready for release, add a new model version endpoint to Route 53, and switch the policy to weighted until all users have

the updated version.

**Answer:** D

#### NEW QUESTION 159

A company has raw user and transaction data stored in AmazonS3 a MySQL database, and Amazon RedShift A Data Scientist needs to perform an analysis by joining the three datasets from Amazon S3, MySQL, and Amazon RedShift, and then calculating the average-of a few selected columns from the joined data Which AWS service should the Data Scientist use?

- A. Amazon Athena
- B. Amazon Redshift Spectrum
- C. AWS Glue
- D. Amazon QuickSight

**Answer:** A

#### NEW QUESTION 164

A Machine Learning Specialist is given a structured dataset on the shopping habits of a company's customer base. The dataset contains thousands of columns of data and hundreds of numerical columns for each customer. The Specialist wants to identify whether there are natural groupings for these columns across all customers and visualize the results as quickly as possible.

What approach should the Specialist take to accomplish these tasks?

- A. Embed the numerical features using the t-distributed stochastic neighbor embedding (t-SNE) algorithm and create a scatter plot.
- B. Run k-means using the Euclidean distance measure for different values of k and create an elbow plot.
- C. Embed the numerical features using the t-distributed stochastic neighbor embedding (t-SNE) algorithm and create a line graph.
- D. Run k-means using the Euclidean distance measure for different values of k and create box plots for each numerical column within each cluster.

**Answer:** B

#### NEW QUESTION 167

A Machine Learning Specialist is using Amazon SageMaker to host a model for a highly available customer-facing application .

The Specialist has trained a new version of the model, validated it with historical data, and now wants to deploy it to production To limit any risk of a negative customer experience, the Specialist wants to be able to monitor the model and roll it back, if needed

What is the SIMPLEST approach with the LEAST risk to deploy the model and roll it back, if needed?

- A. Create a SageMaker endpoint and configuration for the new model versio
- B. Redirect production traffic to the new endpoint by updating the client configuratio
- C. Revert traffic to the last version if the model does not perform as expected.
- D. Create a SageMaker endpoint and configuration for the new model versio
- E. Redirect production traffic to the new endpoint by using a load balancer Revert traffic to the last version if the model does not perform as expected.
- F. Update the existing SageMaker endpoint to use a new configuration that is weighted to send 5% of the traffic to the new varian
- G. Revert traffic to the last version by resetting the weights if the model does not perform as expected.
- H. Update the existing SageMaker endpoint to use a new configuration that is weighted to send 100% of the traffic to the new variant Revert traffic to the last version by resetting the weights if the model does not perform as expected.

**Answer:** A

#### NEW QUESTION 171

A Machine Learning Specialist is working with a large cybersecurity company that manages security events in real time for companies around the world The cybersecurity company wants to design a solution that will allow it to use machine learning to score malicious events as anomalies on the data as it is being ingested The company also wants be able to save the results in its data lake for later processing and analysis

What is the MOST efficient way to accomplish these tasks'?

- A. Ingest the data using Amazon Kinesis Data Firehose, and use Amazon Kinesis Data Analytics Random Cut Forest (RCF) for anomaly detection Then use Kinesis Data Firehose to stream the results to Amazon S3
- B. Ingest the data into Apache Spark Streaming using Amazon EM
- C. and use Spark MLlib with k-means to perform anomaly detection Then store the results in an Apache Hadoop Distributed File System (HDFS) using Amazon EMR with a replication factor of three as the data lake
- D. Ingest the data and store it in Amazon S3 Use AWS Batch along with the AWS Deep Learning AMLs to train a k-means model using TensorFlow on the data in Amazon S3.
- E. Ingest the data and store it in Amazon S3. Have an AWS Glue job that is triggered on demand transform the new data Then use the built-in Random Cut Forest (RCF) model within Amazon SageMaker to detect anomalies in the data

**Answer:** A

#### NEW QUESTION 176

A bank's Machine Learning team is developing an approach for credit card fraud detection The company has a large dataset of historical data labeled as fraudulent The goal is to build a model to take the information from new transactions and predict whether each transaction is fraudulent or not

Which built-in Amazon SageMaker machine learning algorithm should be used for modeling this problem?

- A. Seq2seq
- B. XGBoost
- C. K-means
- D. Random Cut Forest (RCF)

**Answer:** C

#### NEW QUESTION 178

A machine learning specialist works for a fruit processing company and needs to build a system that categorizes apples into three types. The specialist has collected a dataset that contains 150 images for each type of apple and applied transfer learning on a neural network that was pretrained on ImageNet with this dataset.

The company requires at least 85% accuracy to make use of the model.

After an exhaustive grid search, the optimal hyperparameters produced the following: 68% accuracy on the training set 67% accuracy on the validation set

What can the machine learning specialist do to improve the system's accuracy?

- A. Upload the model to an Amazon SageMaker notebook instance and use the Amazon SageMaker HPO feature to optimize the model's hyperparameters.
- B. Add more data to the training set and retrain the model using transfer learning to reduce the bias.
- C. Use a neural network model with more layers that are pretrained on ImageNet and apply transfer learning to increase the variance.
- D. Train a new model using the current neural network architecture.

**Answer: B**

#### NEW QUESTION 182

Which of the following metrics should a Machine Learning Specialist generally use to compare/evaluate machine learning classification models against each other?

- A. Recall
- B. Misclassification rate
- C. Mean absolute percentage error (MAPE)
- D. Area Under the ROC Curve (AUC)

**Answer: D**

#### NEW QUESTION 185

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: D**

#### NEW QUESTION 186

A machine learning specialist stores IoT soil sensor data in Amazon DynamoDB table and stores weather event data as JSON files in Amazon S3. The dataset in DynamoDB is 10 GB in size and the dataset in Amazon S3 is 5 GB in size. The specialist wants to train a model on this data to help predict soil moisture levels as a function of weather events using Amazon SageMaker.

Which solution will accomplish the necessary transformation to train the Amazon SageMaker model with the LEAST amount of administrative overhead?

- A. Launch an Amazon EMR cluster
- B. Create an Apache Hive external table for the DynamoDB table and S3 data
- C. Join the Hive tables and write the results out to Amazon S3.
- D. Crawl the data using AWS Glue crawler
- E. Write an AWS Glue ETL job that merges the two tables and writes the output to an Amazon Redshift cluster.
- F. Enable Amazon DynamoDB Streams on the sensor table
- G. Write an AWS Lambda function that consumes the stream and appends the results to the existing weather files in Amazon S3.
- H. Crawl the data using AWS Glue crawler
- I. Write an AWS Glue ETL job that merges the two tables and writes the output in CSV format to Amazon S3.

**Answer: C**

#### NEW QUESTION 187

A company's Machine Learning Specialist needs to improve the training speed of a time-series forecasting model using TensorFlow. The training is currently implemented on a single-GPU machine and takes approximately 23 hours to complete. The training needs to be run daily.

The model accuracy is acceptable, but the company anticipates a continuous increase in the size of the training data and a need to update the model on an hourly, rather than a daily, basis. The company also wants to minimize coding effort and infrastructure changes

What should the Machine Learning Specialist do to the training solution to allow it to scale for future demand?

- A. Do not change the TensorFlow code
- B. Change the machine to one with a more powerful GPU to speed up the training.
- C. Change the TensorFlow code to implement a Horovod distributed framework supported by Amazon SageMaker
- D. Parallelize the training to as many machines as needed to achieve the business goals.
- E. Switch to using a built-in AWS SageMaker DeepAR mode
- F. Parallelize the training to as many machines as needed to achieve the business goals.
- G. Move the training to Amazon EMR and distribute the workload to as many machines as needed to achieve the business goals.

**Answer: B**

#### NEW QUESTION 191

A data scientist wants to use Amazon Forecast to build a forecasting model for inventory demand for a retail company. The company has provided a dataset of historic inventory demand for its products as a .csv file stored in an Amazon S3 bucket. The table below shows a sample of the dataset.



timestamp	item_id	demand	category	lead_time
2019-12-14	uni_000736	120	hardware	90
2020-01-31	uni_003429	98	hardware	30
2020-03-04	uni_000211	234	accessories	10

How should the data scientist transform the data?

- A. Use ETL jobs in AWS Glue to separate the dataset into a target time series dataset and an item metadata dataset
- B. Upload both datasets as .csv files to Amazon S3.
- C. Use a Jupyter notebook in Amazon SageMaker to separate the dataset into a related time series dataset and an item metadata dataset
- D. Upload both datasets as tables in Amazon Aurora.
- E. Use AWS Batch jobs to separate the dataset into a target time series dataset, a related time series dataset, and an item metadata dataset
- F. Upload them directly to Forecast from a local machine.
- G. Use a Jupyter notebook in Amazon SageMaker to transform the data into the optimized protobuf recordIO format
- H. Upload the dataset in this format to Amazon S3.

**Answer:** A

**Explanation:**

<https://docs.aws.amazon.com/forecast/latest/dg/dataset-import-guidelines-troubleshooting.html>

### NEW QUESTION 193

A manufacturing company wants to use machine learning (ML) to automate quality control in its facilities. The facilities are in remote locations and have limited internet connectivity. The company has 20 of training data that consists of labeled images of defective product parts. The training data is in the corporate on-premises data center.

The company will use this data to train a model for real-time defect detection in new parts as the parts move on a conveyor belt in the facilities. The company needs a solution that minimizes costs for compute infrastructure and that maximizes the scalability of resources for training. The solution also must facilitate the company's use of an ML model in the low-connectivity environments.

Which solution will meet these requirements?

- A. Move the training data to an Amazon S3 bucket
- B. Train and evaluate the model by using Amazon SageMaker
- C. Optimize the model by using SageMaker Ne
- D. Deploy the model on a SageMaker hosting services endpoint.
- E. Train and evaluate the model on premise
- F. Upload the model to an Amazon S3 bucket
- G. Deploy the model on an Amazon SageMaker hosting services endpoint.
- H. Move the training data to an Amazon S3 bucket
- I. Train and evaluate the model by using Amazon SageMaker
- J. Optimize the model by using SageMaker Ne
- K. Set up an edge device in the manufacturing facilities with AWS IoT Greengrass
- L. Deploy the model on the edge device.
- M. Train the model on premise
- N. Upload the model to an Amazon S3 bucket
- O. Set up an edge device in the manufacturing facilities with AWS IoT Greengrass
- P. Deploy the model on the edge device.

**Answer:** A

### NEW QUESTION 196

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	0 99,966   34	1 877   123

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 198

A Machine Learning Specialist kicks off a hyperparameter tuning job for a tree-based ensemble model using Amazon SageMaker with Area Under the ROC Curve (AUC) as the objective metric. This workflow will eventually be deployed in a pipeline that retrains and tunes hyperparameters each night to model click-through on data that goes stale every 24 hours.

With the goal of decreasing the amount of time it takes to train these models, and ultimately to decrease costs, the Specialist wants to reconfigure the input hyperparameter range(s).

Which visualization will accomplish this?

- A. A histogram showing whether the most important input feature is Gaussian.
- B. A scatter plot with points colored by target variable that uses (-Distributed Stochastic Neighbor Embedding (I-SNE) to visualize the large number of input variables in an easier-to-read dimension.
- C. A scatter plot showing the performance of the objective metric over each training iteration
- D. A scatter plot showing the correlation between maximum tree depth and the objective metric.

**Answer:** D

#### NEW QUESTION 202

An interactive online dictionary wants to add a widget that displays words used in similar contexts. A Machine Learning Specialist is asked to provide word features for the downstream nearest neighbor model powering the widget.

What should the Specialist do to meet these requirements?

- A. Create one-hot word encoding vectors.
- B. Produce a set of synonyms for every word using Amazon Mechanical Turk.
- C. Create word embedding factors that store edit distance with every other word.
- D. Download word embedding's pre-trained on a large corpus.

**Answer:** D

#### NEW QUESTION 203

A Data Scientist is training a multilayer perception (MLP) on a dataset with multiple classes. The target class of interest is unique compared to the other classes within the dataset, but it does not achieve an acceptable recall metric. The Data Scientist has already tried varying the number and size of the MLP's hidden layers, which has not significantly improved the results. A solution to improve recall must be implemented as quickly as possible.

Which techniques should be used to meet these requirements?

- A. Gather more data using Amazon Mechanical Turk and then retrain
- B. Train an anomaly detection model instead of an MLP
- C. Train an XGBoost model instead of an MLP
- D. Add class weights to the MLP's loss function and then retrain

**Answer:** C

#### NEW QUESTION 205

A logistics company needs a forecast model to predict next month's inventory requirements for a single item in 10 warehouses. A machine learning specialist uses Amazon Forecast to develop a forecast model from 3 years of monthly data. There is no missing data. The specialist selects the DeepAR+ algorithm to train a predictor. The predictor means absolute percentage error (MAPE) is much larger than the MAPE produced by the current human forecasters.

Which changes to the CreatePredictor API call could improve the MAPE? (Choose two.)

- A. Set PerformAutoML to true.
- B. Set ForecastHorizon to 4.
- C. Set ForecastFrequency to W for weekly.
- D. Set PerformHPO to true.
- E. Set FeaturizationMethodName to filling.

**Answer:** CD

#### NEW QUESTION 210

A Machine Learning Specialist is applying a linear least squares regression model to a dataset with 1 000 records and 50 features. Prior to training, the ML Specialist notices that two features are perfectly linearly dependent.

Why could this be an issue for the linear least squares regression model?

- A. It could cause the backpropagation algorithm to fail during training.
- B. It could create a singular matrix during optimization which fails to define a unique solution.
- C. It could modify the loss function during optimization causing it to fail during training.
- D. It could introduce non-linear dependencies within the data which could invalidate the linear assumptions of the model.

**Answer:** C

#### NEW QUESTION 214

A company is building a predictive maintenance model based on machine learning (ML). The data is stored in a fully private Amazon S3 bucket that is encrypted at rest with AWS Key Management Service (AWS KMS) CMKs. An ML specialist must run data preprocessing by using an Amazon SageMaker Processing job that is triggered from code in an Amazon SageMaker notebook. The job should read data from Amazon S3, process it, and upload it back to the same S3 bucket. The preprocessing code is stored in a container image in Amazon Elastic Container Registry (Amazon ECR). The ML specialist needs to grant permissions to ensure a smooth data preprocessing workflow.

Which set of actions should the ML specialist take to meet these requirements?

- A. Create an IAM role that has permissions to create Amazon SageMaker Processing jobs, S3 read and write access to the relevant S3 bucket, and appropriate KMS and ECR permission.
- B. Attach the role to the SageMaker notebook instance.
- C. Create an Amazon SageMaker Processing job from the notebook.
- D. Create an IAM role that has permissions to create Amazon SageMaker Processing jobs.
- E. Attach the role to the SageMaker notebook instance.
- F. Create an Amazon SageMaker Processing job with an IAM role that has read and write permissions to the relevant S3 bucket, and appropriate KMS and ECR permissions.
- G. Create an IAM role that has permissions to create Amazon SageMaker Processing jobs and to access Amazon ECR.
- H. Attach the role to the SageMaker notebook instance.
- I. Set up both an S3 endpoint and a KMS endpoint in the default VPC.

- J. Create Amazon SageMaker Processing jobs from the notebook.
- K. Create an IAM role that has permissions to create Amazon SageMaker Processing job
- L. Attach the role to the SageMaker notebook instance
- M. Set up an S3 endpoint in the default VPC
- N. Create Amazon SageMaker Processing jobs with the access key and secret key of the IAM user with appropriate KMS and ECR permissions.

**Answer:** D

#### NEW QUESTION 219

An insurance company is developing a new device for vehicles that uses a camera to observe drivers' behavior and alert them when they appear distracted. The company created approximately 10,000 training images in a controlled environment that a Machine Learning Specialist will use to train and evaluate machine learning models. During the model evaluation, the Specialist notices that the training error rate diminishes faster as the number of epochs increases and the model is not accurately inferring on the unseen test images. Which of the following should be used to resolve this issue? (Select TWO)

- A. Add vanishing gradient to the model
- B. Perform data augmentation on the training data
- C. Make the neural network architecture complex.
- D. Use gradient checking in the model
- E. Add L2 regularization to the model

**Answer:** BD

#### NEW QUESTION 222

A data scientist is using the Amazon SageMaker Neural Topic Model (NTM) algorithm to build a model that recommends tags from blog posts. The raw blog post data is stored in an Amazon S3 bucket in JSON format. During model evaluation, the data scientist discovered that the model recommends certain stopwords such as "a," "an," and "the" as tags to certain blog posts, along with a few rare words that are present only in certain blog entries. After a few iterations of tag review with the content team, the data scientist notices that the rare words are unusual but feasible. The data scientist also must ensure that the tag recommendations of the generated model do not include the stopwords. What should the data scientist do to meet these requirements?

- A. Use the Amazon Comprehend entity recognition API operation
- B. Remove the detected words from the blog post data
- C. Replace the blog post data source in the S3 bucket.
- D. Run the SageMaker built-in principal component analysis (PCA) algorithm with the blog post data from the S3 bucket as the data source
- E. Replace the blog post data in the S3 bucket with the results of the training job.
- F. Use the SageMaker built-in Object Detection algorithm instead of the NTM algorithm for the training job to process the blog post data.
- G. Remove the stopwords from the blog post data by using the Count Vectorizer function in the scikit-learn library
- H. Replace the blog post data in the S3 bucket with the results of the vectorizer.

**Answer:** D

#### NEW QUESTION 224

A manufacturer is operating a large number of factories with a complex supply chain relationship where unexpected downtime of a machine can cause production to stop at several factories. A data scientist wants to analyze sensor data from the factories to identify equipment in need of preemptive maintenance and then dispatch a service team to prevent unplanned downtime. The sensor readings from a single machine can include up to 200 data points including temperatures, voltages, vibrations, RPMs, and pressure readings. To collect this sensor data, the manufacturer deployed Wi-Fi and LANs across the factories. Even though many factory locations do not have reliable or high-speed internet connectivity, the manufacturer would like to maintain near-real-time inference capabilities. Which deployment architecture for the model will address these business requirements?

- A. Deploy the model in Amazon SageMaker
- B. Run sensor data through this model to predict which machines need maintenance.
- C. Deploy the model on AWS IoT Greengrass in each factory
- D. Run sensor data through this model to infer which machines need maintenance.
- E. Deploy the model to an Amazon SageMaker batch transformation job
- F. Generate inferences in a daily batch report to identify machines that need maintenance.
- G. Deploy the model in Amazon SageMaker and use an IoT rule to write data to an Amazon DynamoDB table. Consume a DynamoDB stream from the table with an AWS Lambda function to invoke the endpoint.

**Answer:** B

#### Explanation:

<https://aws.amazon.com/blogs/iot/industrial-iot-from-condition-based-monitoring-to-predictive-quality-to-digitization/> <https://aws.amazon.com/blogs/iot/using-aws-iot-for-predictive-maintenance/>

#### NEW QUESTION 228

A Machine Learning Specialist is required to build a supervised image-recognition model to identify a cat. The ML Specialist performs some tests and records the following results for a neural network-based image classifier:  
Total number of images available = 1,000  
Test set images = 100 (constant test set)  
The ML Specialist notices that, in over 75% of the misclassified images, the cats were held upside down by their owners. Which techniques can be used by the ML Specialist to improve this specific test error?

- A. Increase the training data by adding variation in rotation for training images.
- B. Increase the number of epochs for model training.
- C. Increase the number of layers for the neural network.
- D. Increase the dropout rate for the second-to-last layer.

**Answer:** A

#### NEW QUESTION 231

A data scientist is using an Amazon SageMaker notebook instance and needs to securely access data stored in a specific Amazon S3 bucket. How should the data scientist accomplish this?

- A. Add an S3 bucket policy allowing GetObject, PutObject, and ListBucket permissions to the AmazonSageMaker notebook ARN as principal.
- B. Encrypt the objects in the S3 bucket with a custom AWS Key Management Service (AWS KMS) key that only the notebook owner has access to.
- C. Attach the policy to the IAM role associated with the notebook that allows GetObject, PutObject, and ListBucket operations to the specific S3 bucket.
- D. Use a script in a lifecycle configuration to configure the AWS CLI on the instance with an access key ID and secret.

**Answer:** C

#### NEW QUESTION 233

A Machine Learning Specialist is developing recommendation engine for a photography blog. Given a picture, the recommendation engine should show a picture that captures similar objects. The Specialist would like to create a numerical representation feature to perform nearest-neighbor searches. What actions would allow the Specialist to get relevant numerical representations?

- A. Reduce image resolution and use reduced resolution pixel values as features.
- B. Use Amazon Mechanical Turk to label image content and create a one-hot representation indicating the presence of specific labels.
- C. Run images through a neural network pre-trained on ImageNet, and collect the feature vectors from the penultimate layer.
- D. Average colors by channel to obtain three-dimensional representations of images.

**Answer:** A

#### NEW QUESTION 235

A Machine Learning Specialist is planning to create a long-running Amazon EMR cluster. The EMR cluster will have 1 master node, 10 core nodes, and 20 task nodes. To save on costs, the Specialist will use Spot Instances in the EMR cluster. Which nodes should the Specialist launch on Spot Instances?

- A. Master node
- B. Any of the core nodes
- C. Any of the task nodes
- D. Both core and task nodes

**Answer:** A

#### NEW QUESTION 236

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 contaminants 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 237

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 238

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