Amazon

Exam Questions AWS-Certified-Machine-Learning-Specialty

AWS Certified Machine Learning - Specialty

NEW QUESTION 1
A Data Scientist needs to create a serverless ingestion and analytics solution for high-velocity, real-time streaming data.
The ingestion process must buffer and convert incoming records from JSON to a query-optimized, columnar format without data loss. The output datastore must be highly available, and Analysts must be able to run SQL queries against the data and connect to existing business intelligence dashboards.
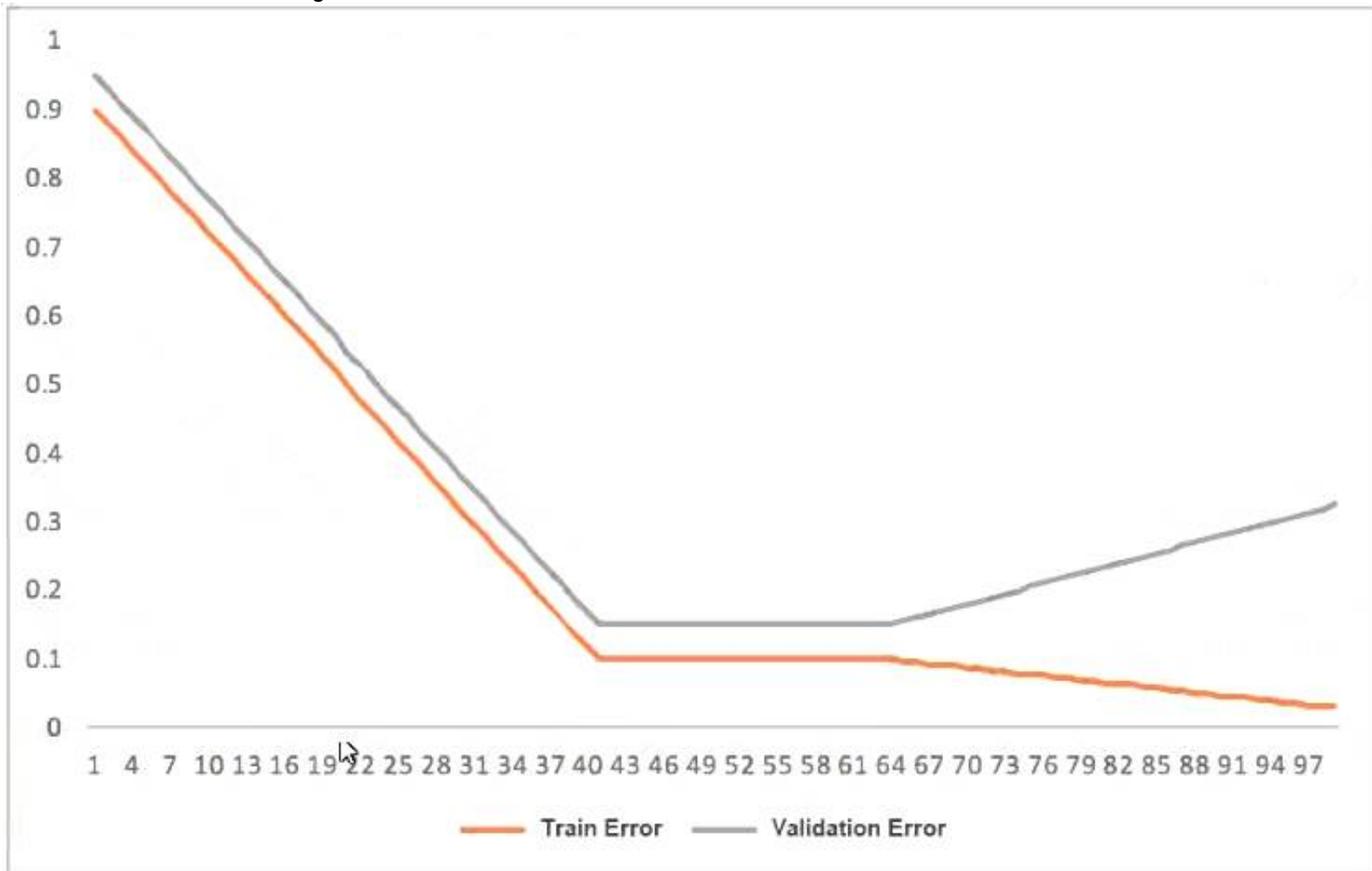Which solution should the Data Scientist build to satisfy the requirements?

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

Answer: A

NEW QUESTION 2
This graph shows the training and validation loss against the epochs for a neural network The network being trained is as follows
• Two dense layers one output neuron
• 100 neurons in each layer
• 100 epochs
• Random initialization of weights

Which technique can be used to improve model performance in terms of accuracy in the validation set?

A. Early stopping
B. Random initialization of weights with appropriate seed
C. Increasing the number of epochs
D. Adding another layer with the 100 neurons

Answer: D

NEW QUESTION 3
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 4
A company is building a new version of a recommendation engine. Machine learning (ML) specialists need to keep adding new data from users to improve personalized recommendations. The ML specialists gather data from the users' interactions on the platform and from sources such as external websites and social media.

The pipeline cleans, transforms, enriches, and compresses terabytes of data daily, and this data is stored in Amazon S3. A set of Python scripts was coded to do the job and is stored in a large Amazon EC2 instance. The whole process takes more than 20 hours to finish, with each script taking at least an hour. The company wants to move the scripts out of Amazon EC2 into a more managed solution that will eliminate the need to maintain servers.

Which approach will address all of these requirements with the LEAST development effort?

A. Load the data into an Amazon Redshift cluste
B. Execute the pipeline by using SQ
C. Store the results in Amazon S3.
D. Load the data into Amazon DynamoD
E. Convert the scripts to an AWS Lambda functio
F. Execute the pipeline by triggering Lambda execution
G. Store the results in Amazon S3.
H. Create an AWS Glue jo
I. Convert the scripts to PySpar
J. Execute the pipelin
K. Store the results in Amazon S3.
L. Create a set of individual AWS Lambda functions to execute each of the script
M. Build a step function by using the AWS Step Functions Data Science SD
N. Store the results in Amazon S3.

Answer: B

NEW QUESTION 5
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 6
An e commerce company wants to launch a new cloud-based product recommendation feature for its web application. Due to data localization regulations, any sensitive data must not leave its on-premises data center, and the product recommendation model must be trained and tested using nonsensitive data only. Data transfer to the cloud must use IPsec. The web application is hosted on premises with a PostgreSQL database that contains all the data. The company wants the data to be uploaded securely to Amazon S3 each day for model retraining.
How should a machine learning specialist meet these requirements?

A. Create an AWS Glue job to connect to the PostgreSQL DB instanc
B. Ingest tables without sensitive data through an AWS Site-to-Site VPN connection directly into Amazon S3.
C. Create an AWS Glue job to connect to the PostgreSQL DB instanc
D. Ingest all data through an AWS Site- to-Site VPN connection into Amazon S3 while removing sensitive data using a PySpark job.
E. Use AWS Database Migration Service (AWS DMS) with table mapping to select PostgreSQL tables with no sensitive data through an SSL connectio
F. Replicate data directly into Amazon S3.
G. Use PostgreSQL logical replication to replicate all data to PostgreSQL in Amazon EC2 through AWS Direct Connect with a VPN connectio
H. Use AWS Glue to move data from Amazon EC2 to Amazon S3.

Answer: C

NEW QUESTION 7
A company ingests machine learning (ML) data from web advertising clicks into an Amazon S3 data lake. Click data is added to an Amazon Kinesis data stream by using the Kinesis Producer Library (KPL). The data is loaded into the S3 data lake from the data stream by using an Amazon Kinesis Data Firehose delivery stream. As the data volume increases, an ML specialist notices that the rate of data ingested into Amazon S3 is relatively constant. There also is an increasing backlog of data for Kinesis Data Streams and Kinesis Data Firehose to ingest.
Which next step is MOST likely to improve the data ingestion rate into Amazon S3?

A. Increase the number of S3 prefixes for the delivery stream to write to.
B. Decrease the retention period for the data stream.
C. Increase the number of shards for the data stream.
D. Add more consumers using the Kinesis Client Library (KCL).

Answer: C

NEW QUESTION 8
An office security agency conducted a successful pilot using 100 cameras installed at key locations within the main office. Images from the cameras were uploaded to Amazon S3 and tagged using Amazon Rekognition, and the results were stored in Amazon ES. The agency is now looking to expand the pilot into a full production system using thousands of video cameras in its office locations globally. The goal is to identify activities performed by non-employees in real time.
Which solution should the agency consider?

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

Answer: C

NEW QUESTION 9
A web-based company wants to improve its conversion rate on its landing page Using a large historical dataset of customer visits, the company has repeatedly trained a multi-class deep learning network algorithm on Amazon SageMaker However there is an overfitting problem training data shows 90% accuracy in predictions, while test data shows 70% accuracy only
The company needs to boost the generalization of its model before deploying it into production to maximize conversions of visits to purchases
Which action is recommended to provide the HIGHEST accuracy model for the company's test and validation data?

A. Increase the randomization of training data in the mini-batches used in training.
B. Allocate a higher proportion of the overall data to the training dataset
C. Apply L1 or L2 regularization and dropouts to the training.
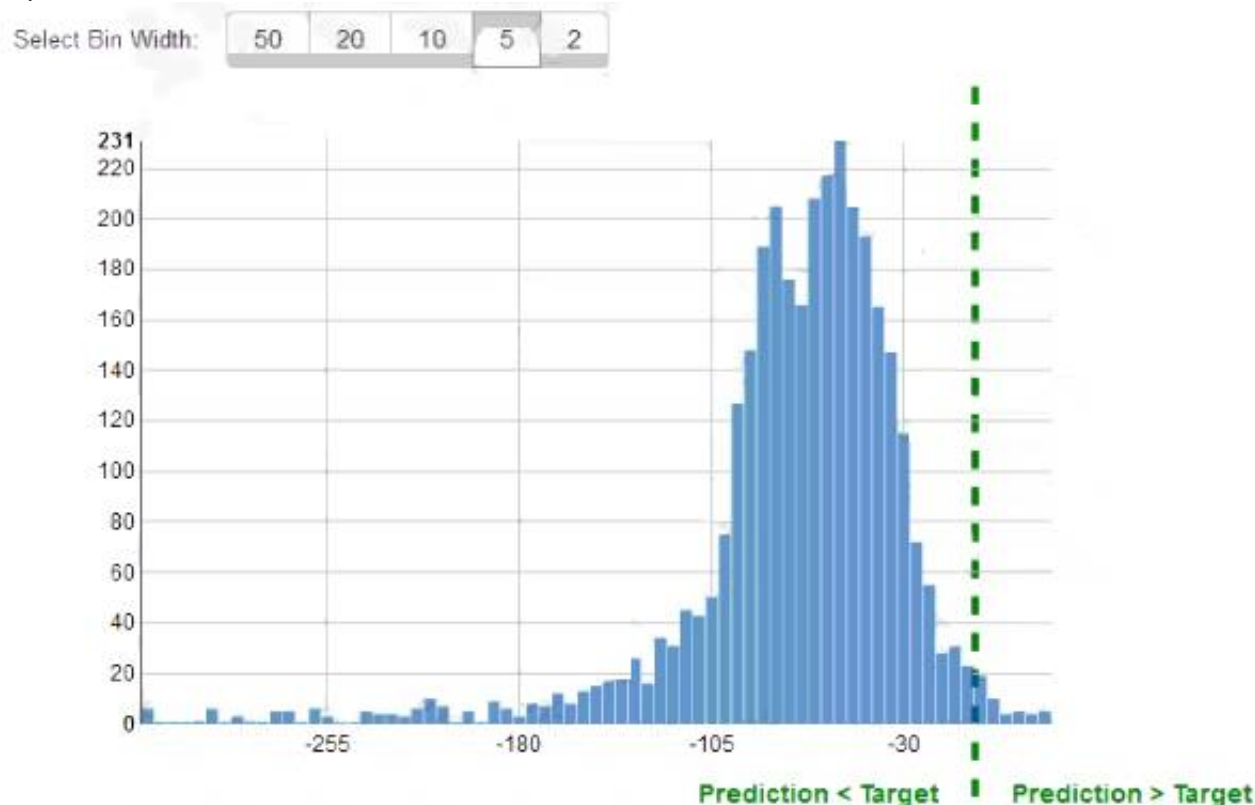D. Reduce the number of layers and units (or neurons) from the deep learning network.

Answer: C

Explanation:
If this is a ComputerVision problem augmentation can help and we may consider A an option. However in analyzing customer historic data, there is no easy way to increase randomization in training. If you go deep into modelling and coding. When you build model with tensorflow/pytorch, most of the time the trainloader is already sampling in data in random manner (with shuffle enable). What we usually do to reduce overfitting is by adding dropout.
https://docs.aws.amazon.com/machine-learning/latest/dg/model-fit-underfitting-vs-overfitting.html

NEW QUESTION 10
While reviewing the histogram for residuals on regression evaluation data a Machine Learning Specialist notices that the residuals do not form a zero-centered bell shape as shown What does this mean?

A. The model might have prediction errors over a range of target values.
B. The dataset cannot be accurately represented using the regression model
C. There are too many variables in the model
D. The model is predicting its target values perfectly.

Answer: D

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 long Amazon SageMaker API calls to Amazon S3. Add code to push a custom metric to Amazon CloudWatc
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 CloudWatc
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 CloudTrai

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

Answer: C

NEW QUESTION 11
A Machine Learning Specialist is preparing data for training on Amazon SageMaker The Specialist is transformed into a numpy .array, which appears to be negatively affecting the speed of the training
What should the Specialist do to optimize the data for training on SageMaker'?

A. Use the SageMaker batch transform feature to transform the training data into a DataFrame
B. Use AWS Glue to compress the data into the Apache Parquet format
C. Transform the dataset into the Recordio protobuf format
D. Use the SageMaker hyperparameter optimization feature to automatically optimize the data

Answer: C

NEW QUESTION 14
The Chief Editor for a product catalog wants the Research and Development team to build a machine learning system that can be used to detect whether or not individuals in a collection of images are wearing the company's retail brand The team has a set of training data
Which machine learning algorithm should the researchers use that BEST meets their requirements?

A. Latent Dirichlet Allocation (LDA)
B. Recurrent neural network (RNN)
C. K-means
D. Convolutional neural network (CNN)

Answer: C

NEW QUESTION 18
A manufacturer of car engines collects data from cars as they are being driven The data collected includes timestamp, engine temperature, rotations per minute (RPM), and other sensor readings The company wants to predict when an engine is going to have a problem so it can notify drivers in advance to get engine maintenance The engine data is loaded into a data lake for training
Which is the MOST suitable predictive model that can be deployed into production'?

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

Answer: B

NEW QUESTION 22
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 24
An online reseller has a large, multi-column dataset with one column missing 30% of its data A Machine Learning Specialist believes that certain columns in the dataset could be used to reconstruct the missing data.
Which reconstruction approach should the Specialist use to preserve the integrity of the dataset?

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

Answer: C

NEW QUESTION 29
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 32
An Machine Learning Specialist discover the following statistics while experimenting on a model.

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

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

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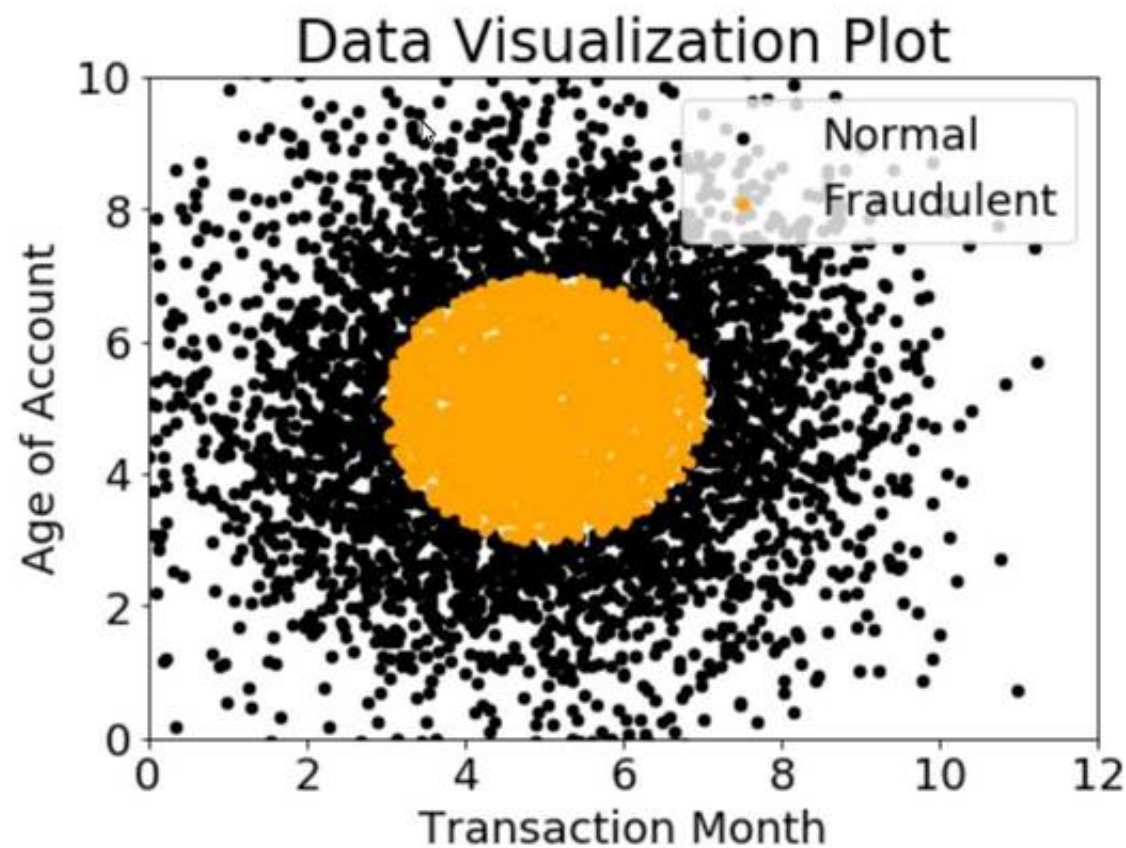Train error = 4.7%
Test error = 9.5%

What can the Specialist from the experiments?

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

Answer: C

NEW QUESTION 33
A company wants to classify user behavior as either fraudulent or normal. Based on internal research, a Machine Learning Specialist would like to build a binary classifier based on two features: age of account and transaction month. The class distribution for these features is illustrated in the figure provided.

Based on this information which model would have the HIGHEST accuracy?

A. Long short-term memory (LSTM) model with scaled exponential linear unit (SELL))
B. Logistic regression
C. Support vector machine (SVM) with non-linear kernel
D. Single perceptron with tanh activation function

Answer: C

NEW QUESTION 38
A Machine Learning Specialist at a company sensitive to security is preparing a dataset for model training. The dataset is stored in Amazon S3 and contains Personally Identifiable Information (PII). The dataset:
* Must be accessible from a VPC only.
* Must not traverse the public internet. How can these requirements be satisfied?

A. Create a VPC endpoint and apply a bucket access policy that restricts access to the given VPC endpoint and the VPC.

B. Create a VPC endpoint and apply a bucket access policy that allows access from the given VPC endpoint and an Amazon EC2 instance.
C. Create a VPC endpoint and use Network Access Control Lists (NACLs) to allow traffic between only the given VPC endpoint and an Amazon EC2 instance.
D. Create a VPC endpoint and use security groups to restrict access to the given VPC endpoint and an Amazon EC2 instance.

Answer: B

NEW QUESTION 42
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 46
A data science team is planning to build a natural language processing (NLP) application. The application's text preprocessing stage will include part-of-speech tagging and key phase extraction. The preprocessed text will be input to a custom classification algorithm that the data science team has already written and trained using Apache MXNet.
Which solution can the team build MOST quickly to meet these requirements?

A. Use Amazon Comprehend for the part-of-speech tagging, key phase extraction, and classification tasks.
B. Use an NLP library in Amazon SageMaker for the part-of-speech taggin
C. Use Amazon Comprehend for the key phase extractio
D. Use AWS Deep Learning Containers with Amazon SageMaker to build the custom classifier.
E. Use Amazon Comprehend for the part-of-speech tagging and key phase extraction task
F. Use Amazon SageMaker built-in Latent Dirichlet Allocation (LDA) algorithm to build the custom classifier.
G. Use Amazon Comprehend for the part-of-speech tagging and key phase extraction task
H. Use AWS Deep Learning Containers with Amazon SageMaker to build the custom classifier.

Answer: B

NEW QUESTION 51
A company needs to quickly make sense of a large amount of data and gain insight from it. The data is in different formats, the schemas change frequently, and new data sources are added regularly. The company wants to use AWS services to explore multiple data sources, suggest schemas, and enrich and transform the data. The solution should require the least possible coding effort for the data flows and the least possible infrastructure management.
Which combination of AWS services will meet these requirements?

A. Amazon EMR for data discovery, enrichment, and transformationAmazon Athena for querying and analyzing the results in Amazon S3 using standard SQL Amazon QuickSight for reporting and getting insights
B. Amazon Kinesis Data Analytics for data ingestionAmazon EMR for data discovery, enrichment, and transformation Amazon Redshift for querying and analyzing the results in Amazon S3
C. AWS Glue for data discovery, enrichment, and transformationAmazon Athena for querying and analyzing the results in Amazon S3 using standard SQL Amazon QuickSight for reporting and getting insights
D. AWS Data Pipeline for data transferAWS Step Functions for orchestrating AWS Lambda jobs for data discovery, enrichment, and transformationAmazon Athena for querying and analyzing the results in Amazon S3 using standard SQL Amazon QuickSight for reporting and getting insights

Answer: A

NEW QUESTION 55
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 60

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 64
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 66
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 ineach category to expect from month to month.
C. Forecasting using claim IDs and timestamps to identify how many claims in each category to expect frommonth to month.
D. Classification with supervised learning of the categories for which partial information on claim contents isprovided, and forecasting using claim IDs and timestamps for all other categories.

Answer: C

NEW QUESTION 68
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 datase
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 70
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 72
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 75
A global financial company is using machine learning to automate its loan approval process. The company has a dataset of customer information. The dataset contains some categorical fields, such as customer location by city and housing status. The dataset also includes financial fields in different units, such as account balances in US dollars and monthly interest in US cents.
The company's data scientists are using a gradient boosting regression model to infer the credit score for each customer. The model has a training accuracy of 99% and a testing accuracy of 75%. The data scientists want to improve the model's testing accuracy.
Which process will improve the testing accuracy the MOST?

A. Use a one-hot encoder for the categorical fields in the datase
B. Perform standardization on the financial fields in the datase
C. Apply L1 regularization to the data.
D. Use tokenization of the categorical fields in the datase
E. Perform binning on the financial fields in the datase
F. Remove the outliers in the data by using the z-score.
G. Use a label encoder for the categorical fields in the datase
H. Perform L1 regularization on the financial fields in the datase
I. Apply L2 regularization to the data.
J. Use a logarithm transformation on the categorical fields in the datase
K. Perform binning on the financial fields in the datase
L. Use imputation to populate missing values in the dataset.

Answer: B

NEW QUESTION 80
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 82
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 87
Example Corp has an annual sale event from October to December. The company has sequential sales data from the past 15 years and wants to use Amazon ML to predict the sales for this year's upcoming event. Which method should Example Corp use to split the data into a training dataset and evaluation dataset?

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

Answer: C

NEW QUESTION 89
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 enable
E. Generate an S3 pre-signed URL for access to data in the bucket

Answer: B

NEW QUESTION 91
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 92
A company is running a machine learning prediction service that generates 100 TB of predictions every day A Machine Learning Specialist must generate a visualization of the daily precision-recall curve from the predictions, and forward a read-only version to the Business team.
Which solution requires the LEAST coding effort?

A. Run a daily Amazon EMR workflow to generate precision-recall data, and save the results in Amazon S3 Give the Business team read-only access to S3
B. Generate daily precision-recall data in Amazon QuickSight, and publish the results in a dashboard shared with the Business team
C. Run a daily Amazon EMR workflow to generate precision-recall data, and save the results in Amazon S3 Visualize the arrays in Amazon QuickSight, and publish them in a dashboard shared with the Business team
D. Generate daily precision-recall data in Amazon ES, and publish the results in a dashboard shared with the Business team.

Answer: C

NEW QUESTION 97
A Machine Learning Specialist is developing a daily ETL workflow containing multiple ETL jobs The workflow consists of the following processes
* Start the workflow as soon as data is uploaded to Amazon S3
* When all the datasets are available in Amazon S3, start an ETL job to join the uploaded datasets with multiple terabyte-sized datasets already stored in Amazon S3
* Store the results of joining datasets in Amazon S3
* If one of the jobs fails, send a notification to the Administrator Which configuration will meet these requirements?

A. Use AWS Lambda to trigger an AWS Step Functions workflow to wait for dataset uploads to complete in Amazon S3. Use AWS Glue to join the datasets Use an Amazon CloudWatch alarm to send an SNS notification to the Administrator in the case of a failure
B. Develop the ETL workflow using AWS Lambda to start an Amazon SageMaker notebook instance Use a lifecycle configuration script to join the datasets and persist the results in Amazon S3 Use an Amazon CloudWatch alarm to send an SNS notification to the Administrator in the case of a failure
C. Develop the ETL workflow using AWS Batch to trigger the start of ETL jobs when data is uploaded to Amazon S3 Use AWS Glue to join the datasets in Amazon S3 Use an Amazon CloudWatch alarm to send an SNS notification to the Administrator in the case of a failure
D. Use AWS Lambda to chain other Lambda functions to read and join the datasets in Amazon S3 as soon as the data is uploaded to Amazon S3 Use an Amazon CloudWatch alarm to send an SNS notification to the Administrator in the case of a failure

Answer: A

NEW QUESTION 102
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 107
A Machine Learning Specialist is training a model to identify the make and model of vehicles in images The Specialist wants to use transfer learning and an existing model trained on images of general objects The Specialist collated a large custom dataset of pictures containing different vehicle makes and models

A. Initialize the model with random weights in all layers including the last fully connected layer
B. Initialize the model with pre-trained weights in all layers and replace the last fully connected layer.
C. Initialize the model with random weights in all layers and replace the last fully connected layer

D. Initialize the model with pre-trained weights in all layers including the last fully connected layer

Answer: D

NEW QUESTION 110

A machine learning (ML) specialist wants to create a data preparation job that uses a PySpark script with complex window aggregation operations to create data for training and testing. The ML specialist needs to evaluate the impact of the number of features and the sample count on model performance.
Which approach should the ML specialist use to determine the ideal data transformations for the model?

A. Add an Amazon SageMaker Debugger hook to the script to capture key metric
B. Run the script as an AWS Glue job.
C. Add an Amazon SageMaker Experiments tracker to the script to capture key metric
D. Run the script as an AWS Glue job.
E. Add an Amazon SageMaker Debugger hook to the script to capture key parameter
F. Run the script as a SageMaker processing job.
G. Add an Amazon SageMaker Experiments tracker to the script to capture key parameter
H. Run the script as a SageMaker processing job.

Answer: B

NEW QUESTION 113

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 114

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 116

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 issu
B. Request categorical data to relate new stores with similar stores that have more historical data.
C. The sales data does not have enough varianc
D. Request external sales data from other industries to improve the model's ability to generalize.
E. Sales data is aggregated by wee
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 118

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 122
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 123
A company uses a long short-term memory (LSTM) model to evaluate the risk factors of a particular energy sector. The model reviews multi-page text documents to analyze each sentence of the text and categorize it as either a potential risk or no risk. The model is not performing well, even though the Data Scientist has experimented with many different network structures and tuned the corresponding hyperparameters.
Which approach will provide the MAXIMUM performance boost?

A. Initialize the words by term frequency-inverse document frequency (TF-IDF) vectors pretrained on a large collection of news articles related to the energy sector.
B. Use gated recurrent units (GRUs) instead of LSTM and run the training process until the validation loss stops decreasing.
C. Reduce the learning rate and run the training process until the training loss stops decreasing.
D. Initialize the words by word2vec embeddings pretrained on a large collection of news articles related to the energy sector.

Answer: C

NEW QUESTION 126
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 needs 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 negative predictions by the model? (Choose two.)

A. Change the XGBoost eval_metric parameter to optimize based on Root Mean Square Error (RMSE).
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 Area Under the ROC Curve (AUC).
E. Decrease the XGBoost max_depth parameter because the model is currently overfitting the data.

Answer: BD

NEW QUESTION 130
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 132
A machine learning specialist is developing a regression model to predict rental rates from rental listings. A variable named Wall_Color represents the most prominent exterior wall color of the property. The following is the sample data, excluding all other variables:

Property_ID	Wall_Color
1000	Red
1001	White
1002	Green

The specialist chose a model that needs numerical input data.
Which feature engineering approaches should the specialist use to allow the regression model to learn from the Wall_Color data? (Choose two.)

A. Apply integer transformation and set Red = 1, White = 5, and Green = 10.
B. Add new columns that store one-hot representation of colors.
C. Replace the color name string by its length.
D. Create three columns to encode the color in RGB format.
E. Replace each color name by its training set frequency.

Answer: AD

NEW QUESTION 136
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 us
C. Run both data preprocessing and feature engineering development on that instance.
D. Keep the notebook instance type and size the sam
E. Stop the notebook when it is not in us
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 instanc
H. Stop the notebook when it is not in us
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 instanc
K. Stop the notebook when it is not in us
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 138
A technology startup is using complex deep neural networks and GPU compute to recommend the company's products to its existing customers based upon each customer's habits and interactions. The solution currently pulls each dataset from an Amazon S3 bucket before loading the data into a TensorFlow model pulled from the company's Git repository that runs locally. This job then runs for several hours while continually outputting its progress to the same S3 bucket. The job can be paused, restarted, and continued at any time in the event of a failure, and is run from a central queue.
Senior managers are concerned about the complexity of the solution's resource management and the costs involved in repeating the process regularly. They ask for the workload to be automated so it runs once a week, starting Monday and completing by the close of business Friday.
Which architecture should be used to scale the solution at the lowest cost?

A. Implement the solution using AWS Deep Learning Containers and run the container as a job using AWS Batch on a GPU-compatible Spot Instance
B. Implement the solution using a low-cost GPU-compatible Amazon EC2 instance and use the AWS Instance Scheduler to schedule the task
C. Implement the solution using AWS Deep Learning Containers, run the workload using AWS Fargate running on Spot Instances, and then schedule the task using the built-in task scheduler
D. Implement the solution using Amazon ECS running on Spot Instances and schedule the task using the ECS service scheduler

Answer: C

NEW QUESTION 140
A library is developing an automatic book-borrowing system that uses Amazon Rekognition. Images of library members' faces are stored in an Amazon S3 bucket. When members borrow books, the Amazon Rekognition CompareFaces API operation compares real faces against the stored faces in Amazon S3.
The library needs to improve security by making sure that images are encrypted at rest. Also, when the images are used with Amazon Rekognition. they need to be encrypted in transit. The library also must ensure that the images are not used to improve Amazon Rekognition as a service.
How should a machine learning specialist architect the solution to satisfy these requirements?

A. Enable server-side encryption on the S3 bucke
B. Submit an AWS Support ticket to opt out of allowing images to be used for improving the service, and follow the process provided by AWS Support.
C. Switch to using an Amazon Rekognition collection to store the image
D. Use the IndexFaces andSearchFacesByImage API operations instead of the CompareFaces API operation.
E. Switch to using the AWS GovCloud (US) Region for Amazon S3 to store images and for Amazon Rekognition to compare face
F. Set up a VPN connection and only call the Amazon Rekognition API operations through the VPN.
G. Enable client-side encryption on the S3 bucke
H. Set up a VPN connection and only call the Amazon Rekognition API operations through the VPN.

Answer: B

NEW QUESTION 141
A data scientist is training a text classification model by using the Amazon SageMaker built-in BlazingText algorithm. There are 5 classes in the dataset, with 300 samples for category A, 292 samples for category B, 240 samples for category C, 258 samples for category D, and 310 samples for category E.
The data scientist shuffles the data and splits off 10% for testing. After training the model, the data scientist generates confusion matrices for the training and test sets.

Training data confusion matrix

		Predicted class					
		A	B	C	D	E	Total
True class	A	270	0	0	0	0	270
	B	1	260	0	0	2	263
	C	0	0	111	100	5	216
	D	4	3	132	92	1	232
	E	0	0	2	3	274	279
	Total	275	263	245	195	282	1260

Test data confusion matrix

		Predicted class					
		A	B	C	D	E	Total
True class	A	9	1	0	0	0	10
	B	2	25	0	2	0	29
	C	10	2	11	10	1	34
	D	1	0	12	14	0	27
	E	9	1	4	1	25	40
	Total	31	29	27	27	26	140

What could the data scientist conclude form these results?

A. Classes C and D are too similar.
B. The dataset is too small for holdout cross-validation.
C. The data distribution is skewed.
D. The model is overfitting for classes B and E.

Answer: B

NEW QUESTION 145
A company is launching a new product and needs to build a mechanism to monitor comments about the company and its new product on social media. The company needs to be able to evaluate the sentiment expressed in social media posts, and visualize trends and configure alarms based on various thresholds. The company needs to implement this solution quickly, and wants to minimize the infrastructure and data science resources needed to evaluate the messages. The company already has a solution in place to collect posts and store them within an Amazon S3 bucket.
What services should the data science team use to deliver this solution?

A. Train a model in Amazon SageMaker by using the BlazingText algorithm to detect sentiment in the corpus of social media post
B. Expose an endpoint that can be called by AWS Lambd
C. Trigger a Lambda function when posts are added to the S3 bucket to invoke the endpoint and record the sentiment in an Amazon DynamoDB table and in a custom Amazon CloudWatch metri
D. Use CloudWatch alarms to notify analysts of trends.
E. Train a model in Amazon SageMaker by using the semantic segmentation algorithm to model the semantic content in the corpus of social media post
F. Expose an endpoint that can be called by AWS Lambd
G. Trigger a Lambda function when objects are added to the S3 bucket to invoke the endpoint and record the sentiment in an Amazon DynamoDB tabl
H. Schedule a second Lambda function to query recently added records and send an Amazon Simple Notification Service (Amazon SNS) notification to notify analysts of trends.
I. Trigger an AWS Lambda function when social media posts are added to the S3 bucke
J. Call Amazon Comprehend for each post to capture the sentiment in the message and record the sentiment in an Amazon DynamoDB tabl
K. Schedule a second Lambda function to query recently added records and send an Amazon Simple Notification Service (Amazon SNS) notification to notify analysts of trends.
L. Trigger an AWS Lambda function when social media posts are added to the S3 bucke
M. Call Amazon Comprehend for each post to capture the sentiment in the message and record the sentiment in a custom Amazon CloudWatch metric and in S3. Use CloudWatch alarms to notify analysts of trends.

Answer: A

NEW QUESTION 149
A company is building a line-counting application for use in a quick-service restaurant. The company wants to use video cameras pointed at the line of customers at a given register to measure how many people are in line and deliver notifications to managers if the line grows too long. The restaurant locations have limited bandwidth for connections to external services and cannot accommodate multiple video streams without impacting other operations.
Which solution should a machine learning specialist implement to meet these requirements?

A. Install cameras compatible with Amazon Kinesis Video Streams to stream the data to AWS over the restaurant's existing internet connectio

B. Write an AWS Lambda function to take an image and send it to Amazon Rekognition to count the number of faces in the imag
C. Send an Amazon Simple Notification Service (Amazon SNS) notification if the line is too long.
D. Deploy AWS DeepLens cameras in the restaurant to capture vide
E. Enable Amazon Rekognition on the AWS DeepLens device, and use it to trigger a local AWS Lambda function when a person is recognize
F. Use the Lambda function to send an Amazon Simple Notification Service (Amazon SNS) notification if the line is too long.
G. Build a custom model in Amazon SageMaker to recognize the number of people in an imag
H. Install cameras compatible with Amazon Kinesis Video Streams in the restauran
I. Write an AWS Lambda function to take an imag
J. Use the SageMaker endpoint to call the model to count peopl
K. Send an Amazon Simple Notification Service (Amazon SNS) notification if the line is too long.
L. Build a custom model in Amazon SageMaker to recognize the number of people in an imag
M. Deploy AWS DeepLens cameras in the restauran
N. Deploy the model to the camera
O. Deploy an AWS Lambda function to the cameras to use the model to count people and send an Amazon Simple Notification Service (Amazon SNS) notification if the line is too long.

Answer: A

NEW QUESTION 153
A Machine Learning Specialist uploads a dataset to an Amazon S3 bucket protected with server-side encryption using AWS KMS.
How should the ML Specialist define the Amazon SageMaker notebook instance so it can read the same dataset from Amazon S3?

A. Define security group(s) to allow all HTTP inbound/outbound traffic and assign those security group(s) tothe Amazon SageMaker notebook instance.
B. onfigure the Amazon SageMaker notebook instance to have access to the VP
C. Grant permission in the KMS key policy to the notebook's KMS role.
D. Assign an IAM role to the Amazon SageMaker notebook with S3 read access to the datase
E. Grant permission in the KMS key policy to that role.
F. Assign the same KMS key used to encrypt data in Amazon S3 to the Amazon SageMaker notebook instance.

Answer: D

NEW QUESTION 158
A data scientist is working on a public sector project for an urban traffic system. While studying the traffic patterns, it is clear to the data scientist that the traffic behavior at each light is correlated, subject to a small stochastic error term. The data scientist must model the traffic behavior to analyze the traffic patterns and reduce congestion.
How will the data scientist MOST effectively model the problem?

A. The data scientist should obtain a correlated equilibrium policy by formulating this problem as a multi-agent reinforcement learning problem.
B. The data scientist should obtain the optimal equilibrium policy by formulating this problem as a single-agent reinforcement learning problem.
C. Rather than finding an equilibrium policy, the data scientist should obtain accurate predictors of traffic flow by using historical data through a supervised learning approach.
D. Rather than finding an equilibrium policy, the data scientist should obtain accurate predictors of traffic flow by using unlabeled simulated data representing the new traffic patterns in the city and applying an unsupervised learning approach.

Answer: D

NEW QUESTION 162
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 100000 images per defect type for training During the injial 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 163
A Machine Learning Specialist previously trained a logistic regression model using scikit-learn on a local machine, and the Specialist now wants to deploy it to production for inference only.
What steps should be taken to ensure Amazon SageMaker can host a model that was trained locally?

A. Build the Docker image with the inference cod
B. Tag the Docker image with the registry hostname and upload it to Amazon ECR.
C. Serialize the trained model so the format is compressed for deploymen
D. Tag the Docker image with the registry hostname and upload it to Amazon S3.
E. Serialize the trained model so the format is compressed for deploymen
F. Build the image and upload it to Docker Hub.
G. Build the Docker image with the inference cod
H. Configure Docker Hub and upload the image to AmazonECR.

Answer: D

NEW QUESTION 168
An ecommerce company sends a weekly email newsletter to all of its customers. Management has hired a team of writers to create additional targeted content. A data scientist needs to identify five customer segments based on age, income, and location. The customers' current segmentation is unknown. The data scientist

previously built an XGBoost model to predict the likelihood of a customer responding to an email based on age, income, and location.
Why does the XGBoost model NOT meet the current requirements, and how can this be fixed?

A. The XGBoost model provides a true/false binary outpu
B. Apply principal component analysis (PCA) with five feature dimensions to predict a segment.
C. The XGBoost model provides a true/false binary outpu
D. Increase the number of classes the XGBoost model predicts to five classes to predict a segment.
E. The XGBoost model is a supervised machine learning algorith
F. Train a k-Nearest-Neighbors (kNN) model with K = 5 on the same dataset to predict a segment.
G. The XGBoost model is a supervised machine learning algorith
H. Train a k-means model with K = 5 on the same dataset to predict a segment.

Answer: C

NEW QUESTION 169
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

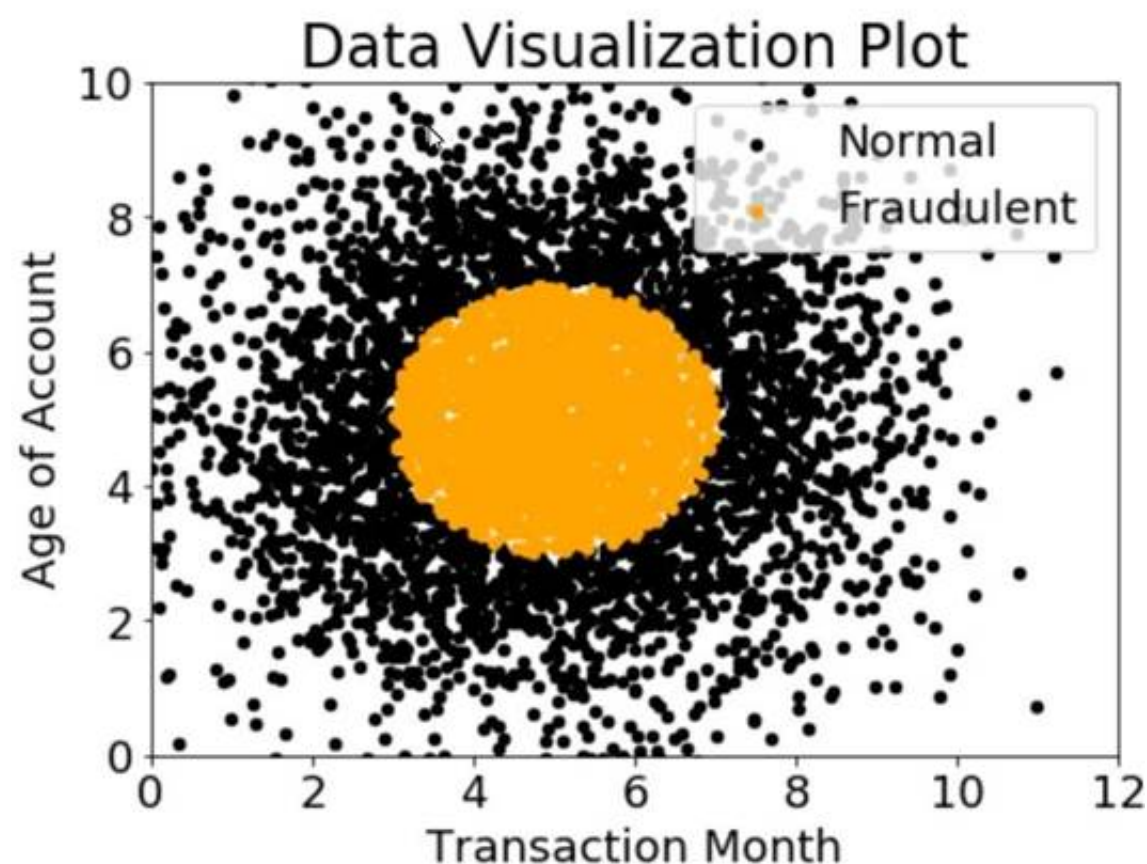**Answer:** B

NEW QUESTION 174
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 178
A company wants to classify user behavior as either fraudulent or normal. Based on internal research, a Machine Learning Specialist would like to build a binary classifier based on two features: age of account and transaction month. The class distribution for these features is illustrated in the figure provided.

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

A. Decision tree
B. Linear support vector machine (SVM)
C. Naive Bayesian classifier

D. Single Perceptron with sigmoidal activation function

Answer: C

NEW QUESTION 183
A company is running an Amazon SageMaker training job that will access data stored in its Amazon S3 bucket A compliance policy requires that the data never be transmitted across the internet How should the company set up the job?

A. Launch the notebook instances in a public subnet and access the data through the public S3 endpoint
B. Launch the notebook instances in a private subnet and access the data through a NAT gateway
C. Launch the notebook instances in a public subnet and access the data through a NAT gateway
D. Launch the notebook instances in a private subnet and access the data through an S3 VPC endpoint.

Answer: D

NEW QUESTION 184
A Machine Learning Specialist is building a logistic regression model that will predict whether or not a person will order a pizza. The Specialist is trying to build the optimal model with an ideal classification threshold.
What model evaluation technique should the Specialist use to understand how different classification thresholds will impact the model's performance?

A. Receiver operating characteristic (ROC) curve
B. Misclassification rate
C. Root Mean Square Error (RM&)
D. L1 norm

Answer: A

NEW QUESTION 189
IT leadership wants Jo transition a company's existing machine learning data storage environment to AWS as a temporary ad hoc solution The company currently uses a custom software process that heavily leverages SOL as a query language and exclusively stores generated csv documents for machine learning
The ideal state for the company would be a solution that allows it to continue to use the current workforce of SQL experts The solution must also support the storage of csv and JSON files, and be able to query over semi-structured data The following are high priorities for the company:
• Solution simplicity
• Fast development time
• Low cost
• High flexibility
What technologies meet the company's requirements?

A. Amazon S3 and Amazon Athena
B. Amazon Redshift and AWS Glue
C. Amazon DynamoDB and DynamoDB Accelerator (DAX)
D. Amazon RDS and Amazon ES

Answer: B

NEW QUESTION 193
A retail company is using Amazon Personalize to provide personalized product recommendations for its customers during a marketing campaign. The company sees a significant increase in sales of recommended items to existing customers immediately after deploying a new solution version, but these sales decrease a short time after deployment. Only historical data from before the marketing campaign is available for training.
How should a data scientist adjust the solution?

A. Use the event tracker in Amazon Personalize to include real-time user interactions.
B. Add user metadata and use the HRNN-Metadata recipe in Amazon Personalize.
C. Implement a new solution using the built-in factorization machines (FM) algorithm in Amazon SageMaker.
D. Add event type and event value fields to the interactions dataset in Amazon Personalize.

Answer: A

NEW QUESTION 196
A manufacturing company has a large set of labeled historical sales data The manufacturer would like to predict how many units of a particular part should be produced each quarter Which machine learning approach should be used to solve this problem?

A. Logistic regression
B. Random Cut Forest (RCF)
C. Principal component analysis (PCA)
D. Linear regression

Answer: D

NEW QUESTION 198
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 201
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 205
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 trfese 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 209
A Machine Learning Specialist is developing a custom video recommendation model for an application The dataset used to train this model is very large with millions of data points and is hosted in an Amazon S3 bucket The Specialist wants to avoid loading all of this data onto an Amazon SageMaker notebook instance because it would take hours to move and will exceed the attached 5 GB Amazon EBS volume on the notebook instance.
Which approach allows the Specialist to use all the data to train the model?

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

Answer: A

NEW QUESTION 214
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 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 217
A health care company is planning to use neural networks to classify their X-ray images into normal and abnormal classes. The labeled data is divided into a

training set of 1,000 images and a test set of 200 images. The initial training of a neural network model with 50 hidden layers yielded 99% accuracy on the training set, but only 55% accuracy on the test set.
What changes should the Specialist consider to solve this issue? (Choose three.)

A. Choose a higher number of layers
B. Choose a lower number of layers
C. Choose a smaller learning rate
D. Enable dropout
E. Include all the images from the test set in the training set
F. Enable early stopping

Answer: ADE

NEW QUESTION 222

A Data Scientist is building a model to predict customer churn using a dataset of 100 continuous numerical features. The Marketing team has not provided any insight about which features are relevant for churn prediction. The Marketing team wants to interpret the model and see the direct impact of relevant features on the model outcome. While training a logistic regression model, the Data Scientist observes that there is a wide gap between the training and validation set accuracy.
Which methods can the Data Scientist use to improve the model performance and satisfy the Marketing team's needs? (Choose two.)

A. Add L1 regularization to the classifier
B. Add features to the dataset
C. Perform recursive feature elimination
D. Perform t-distributed stochastic neighbor embedding (t-SNE)
E. Perform linear discriminant analysis

Answer: BE

NEW QUESTION 225

An agricultural company is interested in using machine learning to detect specific types of weeds in a 100-acre grassland field. Currently, the company uses tractor-mounted cameras to capture multiple images of the field as 10 × 10 grids. The company also has a large training dataset that consists of annotated images of popular weed classes like broadleaf and non-broadleaf docks.
The company wants to build a weed detection model that will detect specific types of weeds and the location of each type within the field. Once the model is ready, it will be hosted on Amazon SageMaker endpoints. The model will perform real-time inferencing using the images captured by the cameras. Which approach should a Machine Learning Specialist take to obtain accurate predictions?

A. Prepare the images in RecordIO format and upload them to Amazon S3. Use Amazon SageMaker to train, test, and validate the model using an image classification algorithm to categorize images into various weed classes.
B. Prepare the images in Apache Parquet format and upload them to Amazon S3. Use Amazon SageMaker to train, test, and validate the model using an object-detection single-shot multibox detector (SSD) algorithm.
C. Prepare the images in RecordIO format and upload them to Amazon S3. Use Amazon SageMaker to train, test, and validate the model using an object-detection single-shot multibox detector (SSD) algorithm.
D. Prepare the images in Apache Parquet format and upload them to Amazon S3. Use Amazon SageMaker to train, test, and validate the model using an image classification algorithm to categorize images into various weed classes.

Answer: C

NEW QUESTION 230

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 231

When submitting Amazon SageMaker training jobs using one of the built-in algorithms, which common parameters MUST be specified? (Select THREE.)

A. The training channel identifying the location of training data on an Amazon S3 bucket.
B. The validation channel identifying the location of validation data on an Amazon S3 bucket.
C. The 1AM role that Amazon SageMaker can assume to perform tasks on behalf of the users.
D. Hyperparameters in a JSON array as documented for the algorithm used.
E. The Amazon EC2 instance class specifying whether training will be run using CPU or GPU.
F. The output path specifying where on an Amazon S3 bucket the trained model will persist.

Answer: CEF

NEW QUESTION 234

An employee found a video clip with audio on a company's social media feed. The language used in the video is Spanish. English is the employee's first language, and they do not understand Spanish. The employee wants to do a sentiment analysis.
What combination of services is the MOST efficient to accomplish the task?

A. Amazon Transcribe, Amazon Translate, and Amazon Comprehend
B. Amazon Transcribe, Amazon Comprehend, and Amazon SageMaker seq2seq

C. Amazon Transcribe, Amazon Translate, and Amazon SageMaker Neural Topic Model (NTM)
D. Amazon Transcribe, Amazon Translate, and Amazon SageMaker BlazingText

Answer: A

NEW QUESTION 239
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 240
A Machine Learning Specialist is working with a large cybersecurily 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 AMIs 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 245
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 248
A company has video feeds and images of a subway train station. The company wants to create a deep learning model that will alert the station manager if any passenger crosses the yellow safety line when there is no train in the station. The alert will be based on the video feeds. The company wants the model to detect the yellow line, the passengers who cross the yellow line, and the trains in the video feeds. This task requires labeling. The video data must remain confidential.
A data scientist creates a bounding box to label the sample data and uses an object detection model. However, the object detection model cannot clearly demarcate the yellow line, the passengers who cross the yellow line, and the trains.
Which labeling approach will help the company improve this model?

A. Use Amazon Rekognition Custom Labels to label the dataset and create a custom Amazon Rekognition object detection mode
B. Create a private workforc
C. Use Amazon Augmented AI (Amazon A2I) to review the low-confidence predictions and retrain the custom Amazon Rekognition model.
D. Use an Amazon SageMaker Ground Truth object detection labeling tas
E. Use Amazon Mechanical Turk as the labeling workforce.
F. Use Amazon Rekognition Custom Labels to label the dataset and create a custom Amazon Rekognition object detection mode
G. Create a workforce with a third-party AWS Marketplace vendo
H. Use Amazon Augmented AI (Amazon A2I) to review the low-confidence predictions and retrain the custom Amazon Rekognition model.
I. Use an Amazon SageMaker Ground Truth semantic segmentation labeling tas
J. Use a private workforce as the labeling workforce.

Answer: B

NEW QUESTION 251
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 bucke
B. Train and evaluate the model by using Amazon SageMake
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 bucke
G. Deploy the model on an Amazon SageMaker hosting services endpoint.
H. Move the training data to an Amazon S3 bucke
I. Train and evaluate the model by using Amazon SageMake
J. Optimize the model by using SageMaker Ne
K. Set up an edge device in the manufacturing facilities with AWS IoT Greengras
L. Deploy the model on the edge device.
M. Train the model on premise
N. Upload the model to an Amazon S3 bucke
O. Set up an edge device in the manufacturing facilities with AWS IoT Greengras
P. Deploy the model on the edge device.

Answer: A

NEW QUESTION 253
A machine learning specialist is developing a proof of concept for government users whose primary concern is security. The specialist is using Amazon SageMaker to train a convolutional neural network (CNN) model for a photo classifier application. The specialist wants to protect the data so that it cannot be accessed and transferred to a remote host by malicious code accidentally installed on the training container.
Which action will provide the MOST secure protection?

A. Remove Amazon S3 access permissions from the SageMaker execution role.
B. Encrypt the weights of the CNN model.
C. Encrypt the training and validation dataset.
D. Enable network isolation for training jobs.

Answer: D

NEW QUESTION 256
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 258
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 and 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 259
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 264
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 269
A machine learning specialist needs to analyze comments on a news website with users across the globe. The specialist must find the most discussed topics in the comments that are in either English or Spanish.
What steps could be used to accomplish this task? (Choose two.)

A. Use an Amazon SageMaker BlazingText algorithm to find the topics independently from language.Proceed with the analysis.
B. Use an Amazon SageMaker seq2seq algorithm to translate from Spanish to English, if necessar
C. Use aSageMaker Latent Dirichlet Allocation (LDA) algorithm to find the topics.
D. Use Amazon Translate to translate from Spanish to English, if necessar
E. Use Amazon Comprehend topic modeling to find the topics.
F. Use Amazon Translate to translate from Spanish to English, if necessar
G. Use Amazon Lex to extract topics form the content.
H. Use Amazon Translate to translate from Spanish to English, if necessar
I. Use Amazon SageMaker Neural Topic Model (NTM) to find the topics.

Answer: B

NEW QUESTION 271
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 276
During mini-batch training of a neural network for a classification problem, a Data Scientist notices that training accuracy oscillates What is the MOST likely cause of this issue?

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

Answer: B

NEW QUESTION 281
A data scientist needs to identify fraudulent user accounts for a company's ecommerce platform. The company wants the ability to determine if a newly created account is associated with a previously known fraudulent user. The data scientist is using AWS Glue to cleanse the company's application logs during ingestion.
Which strategy will allow the data scientist to identify fraudulent accounts?

A. Execute the built-in FindDuplicates Amazon Athena query.
B. Create a FindMatches machine learning transform in AWS Glue.
C. Create an AWS Glue crawler to infer duplicate accounts in the source data.
D. Search for duplicate accounts in the AWS Glue Data Catalog.

Answer: B

NEW QUESTION 282
A Machine Learning Specialist has built a model using Amazon SageMaker built-in algorithms and is not getting expected accurate results The Specialist wants to use hyperparameter optimization to increase the model's accuracy
Which method is the MOST repeatable and requires the LEAST amount of effort to achieve this?

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

Answer: B

NEW QUESTION 284

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

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

Answer: A

NEW QUESTION 288
A Machine Learning Specialist is assigned to a Fraud Detection team and must tune an XGBoost model, which is working appropriately for test data. However, with unknown data, it is not working as expected. The existing parameters are provided as follows.

```
param = {
       'eta': 0.05,   # the training step for each iteration
       'silent': 1,   # logging mode - quiet
       'n_estimators':2000,
       'max_depth':30,
       'min_child_weight': 3,
       'gamma': 0,
       'subsample': 0.8,
       'objective': 'multi:softprob',   # error evaluation for multiclass training
       'num_class': 201}   # the number of classes that exist in this dataset
num_round = 60   # the number of training iterations
```

Which parameter tuning guidelines should the Specialist follow to avoid overfitting?

A. Increase the max_depth parameter value.
B. Lower the max_depth parameter value.
C. Update the objective to binary:logistic.
D. Lower the min_child_weight parameter value.

Answer: B

NEW QUESTION 290
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 dat
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 sourc
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-learnlibrar
H. Replace the blog post data in the S3 bucket with the results of the vectorizer.

Answer: D

NEW QUESTION 292
A manufacturing company has structured and unstructured data stored in an Amazon S3 bucket. A Machine Learning Specialist wants to use SQL to run queries on this data.
Which solution requires the LEAST effort to be able to query this data?

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

Answer: B

NEW QUESTION 296
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 299

For the given confusion matrix, what is the recall and precision of the model?

		Actual	
		Yes	No
Predicted	Yes	12	3
	No	1	9

A. Recall = 0.92 Precision = 0.84
B. Recall = 0.84 Precision = 0.8
C. Recall = 0.92 Precision = 0.8
D. Recall = 0.8 Precision = 0.92

Answer: C

NEW QUESTION 301

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

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

Answer: C

NEW QUESTION 305

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 309

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