

MLS-C01 Dumps

AWS Certified Machine Learning - Specialty

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



NEW QUESTION 1

A Machine Learning Specialist is implementing a full Bayesian network on a dataset that describes public transit in New York City. One of the random variables is discrete, and represents the number of minutes New Yorkers wait for a bus given that the buses cycle every 10 minutes, with a mean of 3 minutes. Which prior probability distribution should the ML Specialist use for this variable?

- A. Poisson distribution ,
- B. Uniform distribution
- C. Normal distribution
- D. Binomial distribution

Answer: D

NEW QUESTION 2

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: A

NEW QUESTION 3

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

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

Answer: D

NEW QUESTION 4

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

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

Answer: C

NEW QUESTION 5

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

The training dataset consists of 1,000 positive samples (from users who ended up paying within 1 year) and 999.1 negative samples (from users who did not use any paid features). Each data sample consists of 200 features including user age, device, location, and play patterns.

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

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

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

Answer: BD

NEW QUESTION 6

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

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

Answer: A

NEW QUESTION 7

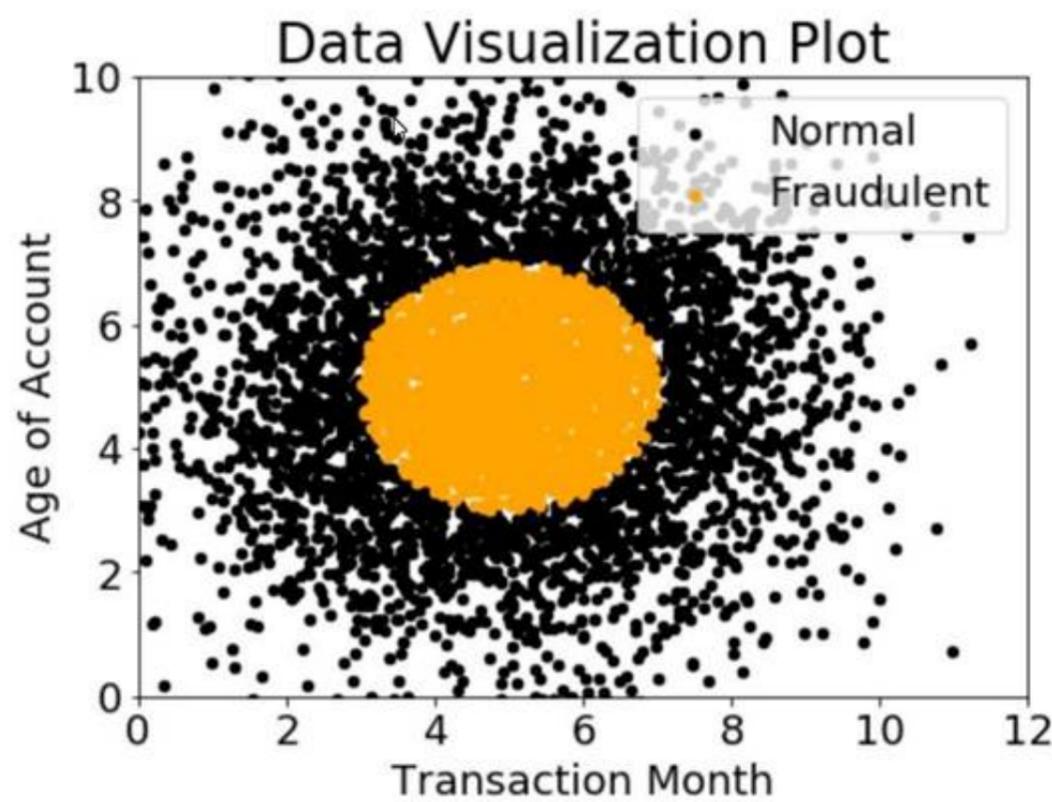
A Machine Learning Specialist is developing recommendation engine for a photography blog. Given a picture, the recommendation engine should show a picture that captures similar objects. The Specialist would like to create a numerical representation feature to perform nearest-neighbor searches. What actions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

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

Answer: A

NEW QUESTION 8

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.



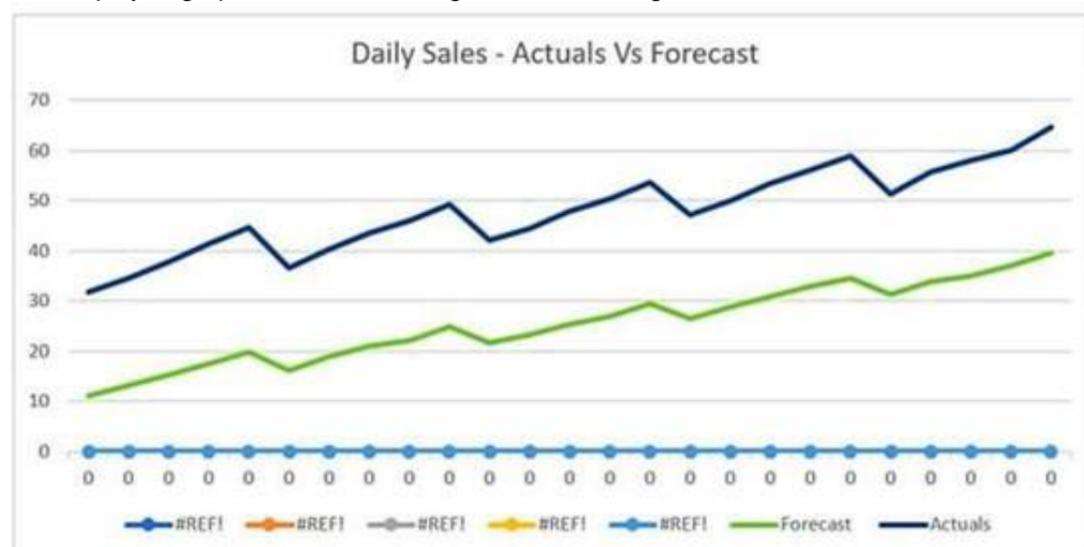
Based on this information which model would have the HIGHEST accuracy?

- 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: B

NEW QUESTION 9

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



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

- A. The model predicts both the trend and the seasonality well.
- B. The model predicts the trend well, but not the seasonality.

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

Answer: D

NEW QUESTION 10

A company's Machine Learning Specialist needs to improve the training speed of a time-series forecasting model using TensorFlow. The training is currently implemented on a single-GPU machine and takes approximately 23 hours to complete. The training needs to be run daily. The model accuracy is acceptable, but the company anticipates a continuous increase in the size of the training data and a need to update the model on an hourly, rather than a daily, basis. The company also wants to minimize coding effort and infrastructure changes. What should the Machine Learning Specialist do to the training solution to allow it to scale for future demand?

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

Answer: B

NEW QUESTION 10

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

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

Answer: B

NEW QUESTION 15

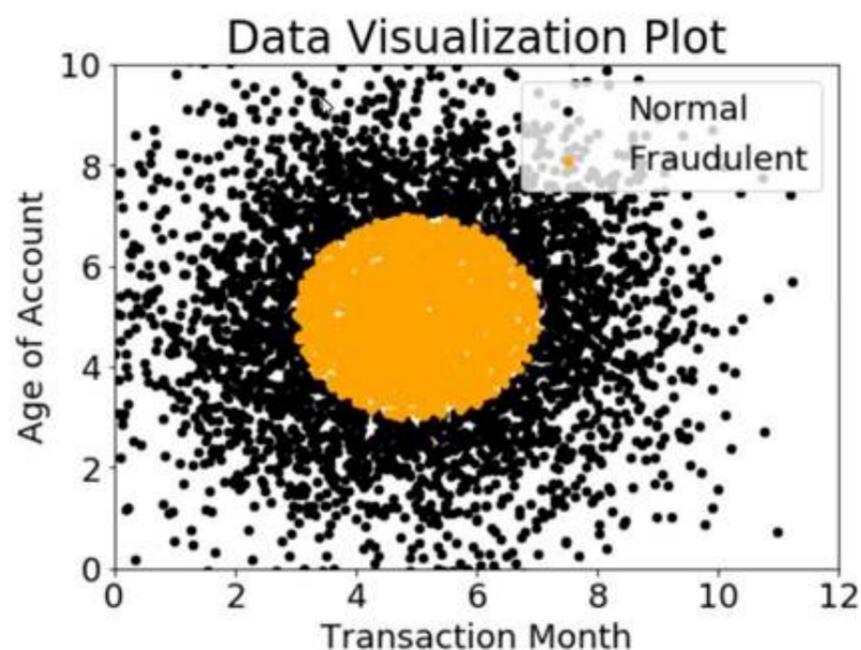
A Machine Learning Specialist is working for a credit card processing company and receives an unbalanced dataset containing credit card transactions. It contains 99,000 valid transactions and 1,000 fraudulent transactions. The Specialist is asked to score a model that was run against the dataset. The 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 19

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 24

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

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

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

Answer: CD

Explanation:

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

NEW QUESTION 29

A Machine Learning Specialist is creating a new natural language processing application that processes a dataset comprised of 1 million sentences. The aim is to then run Word2Vec to generate embeddings of the sentences and enable different types of predictions.

Here is an example from the dataset:

"The quck BROWN FOX jumps over the lazy dog "

Which of the following are the operations the Specialist needs to perform to correctly sanitize and prepare the data in a repeatable manner? (Select THREE)

- A. Perform part-of-speech tagging and keep the action verb and the nouns only
- B. Normalize all words by making the sentence lowercase
- C. Remove stop words using an English stopword dictionary.
- D. Correct the typography on "quck" to "quick."
- E. One-hot encode all words in the sentence
- F. Tokenize the sentence into words.

Answer: ABD

NEW QUESTION 32

A Machine Learning Specialist working for an online fashion company wants to build a data ingestion solution for the company's Amazon S3-based data lake.

The Specialist wants to create a set of ingestion mechanisms that will enable future capabilities comprised of:

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

Which services should the Specialist use?

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

Answer: A

NEW QUESTION 34

While working on a neural network project, a Machine Learning Specialist discovers that some features in the data have very high magnitude resulting in this data being weighted more in the cost function. What should the Specialist do to ensure better convergence during backpropagation?

- A. Dimensionality reduction
- B. Data normalization
- C. Model regularization
- D. Data augmentation for the minority class

Answer: D

NEW QUESTION 39

A Machine Learning Specialist is designing a system for improving sales for a company. The objective is to use the large amount of information the company has on users' behavior and product preferences to predict which products users would like based on the users' similarity to other users.

What should the Specialist do to meet this objective?

- A. Build a content-based filtering recommendation engine with Apache Spark ML on Amazon EMR.
- B. Build a collaborative filtering recommendation engine with Apache Spark ML on Amazon EMR.
- C. Build a model-based filtering recommendation engine with Apache Spark ML on Amazon EMR.
- D. Build a combinative filtering recommendation engine with Apache Spark ML on Amazon EMR.

Answer: B

Explanation:

Many developers want to implement the famous Amazon model that was used to power the "People who bought this also bought these items" feature on Amazon.com. This model is based on a method called Collaborative Filtering. It takes items such as movies, books, and products that were rated highly by a set of

users and recommending them to other users who also gave them high ratings. This method works well in domains where explicit ratings or implicit user actions can be gathered and analyzed.

NEW QUESTION 42

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 43

A Mobile Network Operator is building an analytics platform to analyze and optimize a company's operations using Amazon Athena and Amazon S3. The source systems send data in CSV format in real time. The Data Engineering team wants to transform the data to the Apache Parquet format before storing it on Amazon S3.

Which solution takes the LEAST effort to implement?

- A. Ingest .CSV data using Apache Kafka Streams on Amazon EC2 instances and use Kafka Connect S3 to serialize data as Parquet.
- B. Ingest .CSV data from Amazon Kinesis Data Streams and use Amazon Glue to convert data into Parquet.
- C. Ingest .CSV data using Apache Spark Structured Streaming in an Amazon EMR cluster and use Apache Spark to convert data into Parquet.
- D. Ingest .CSV data from Amazon Kinesis Data Streams and use Amazon Kinesis Data Firehose to convert data into Parquet.

Answer: C

NEW QUESTION 46

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

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

Answer: C

NEW QUESTION 48

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

Which approach allows the Specialist to use all the data to train the model?

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

Answer: A

NEW QUESTION 51

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

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

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

Answer: D

NEW QUESTION 52

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: C

NEW QUESTION 55

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 58

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 59

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

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

Answer: A

NEW QUESTION 64

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

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

Predicted	0	1
Actual	0 99,966	34
	1	877 123

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

- A. Change the XGBoost eval_metric parameter to optimize based on rmse instead of error.
- B. Increase the XGBoost scale_pos_weight parameter to adjust the balance of positive and negative weights.
- C. Increase the XGBoost max_depth parameter because the model is currently underfitting the data.
- D. Change the XGBoost eval_metric parameter to optimize based on AUC instead of error.
- E. Decrease the XGBoost max_depth parameter because the model is currently overfitting the data.

Answer: DE

NEW QUESTION 68

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 IAM 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: AEF

NEW QUESTION 72

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 76

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: D

NEW QUESTION 79

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: C

NEW QUESTION 82

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 84

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 89

A Machine Learning Specialist must build out a process to query a dataset on Amazon S3 using Amazon Athena The dataset contains more than 800.000 records stored as plaintext CSV files Each record contains 200 columns and is approximately 1.5 MB in size Most queries will span 5 to 10 columns only
How should the Machine Learning Specialist transform the dataset to minimize query runtime?

- A. Convert the records to Apache Parquet format
- B. Convert the records to JSON format

- C. Convert the records to GZIP CSV format
- D. Convert the records to XML format

Answer: A

NEW QUESTION 92

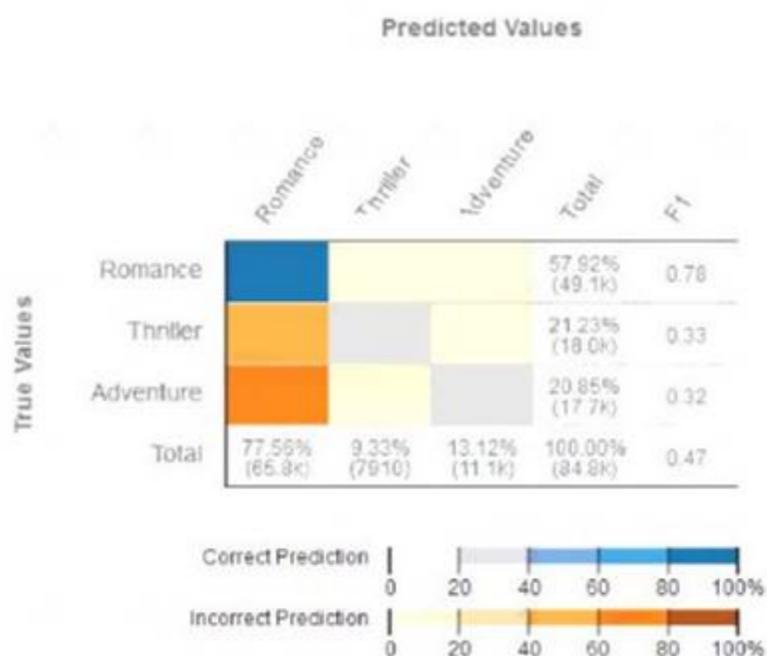
An e-commerce company needs a customized training model to classify images of its shirts and pants products. The company needs a proof of concept in 2 to 3 days with good accuracy. Which compute choice should the Machine Learning Specialist select to train and achieve good accuracy on the model quickly?

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

Answer: C

NEW QUESTION 93

Given the following confusion matrix for a movie classification model, what is the true class frequency for Romance and the predicted class frequency for Adventure?



- A. The true class frequency for Romance is 77.56% and the predicted class frequency for Adventure is 20.85%
- B. The true class frequency for Romance is 57.92% and the predicted class frequency for Adventure is 13.12%
- C. The true class frequency for Romance is 0.78 and the predicted class frequency for Adventure is (0.47 - 0.32).
- D. The true class frequency for Romance is 77.56% * 0.78 and the predicted class frequency for Adventure is 20.85% + 0.32

Answer: A

NEW QUESTION 95

A Machine Learning Specialist needs to be able to ingest streaming data and store it in Apache Parquet files for exploration and analysis. Which of the following services would both ingest and store this data in the correct format?

- A. AWS DMS
- B. Amazon Kinesis Data Streams
- C. Amazon Kinesis Data Firehose
- D. Amazon Kinesis Data Analytics

Answer: C

NEW QUESTION 97

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.

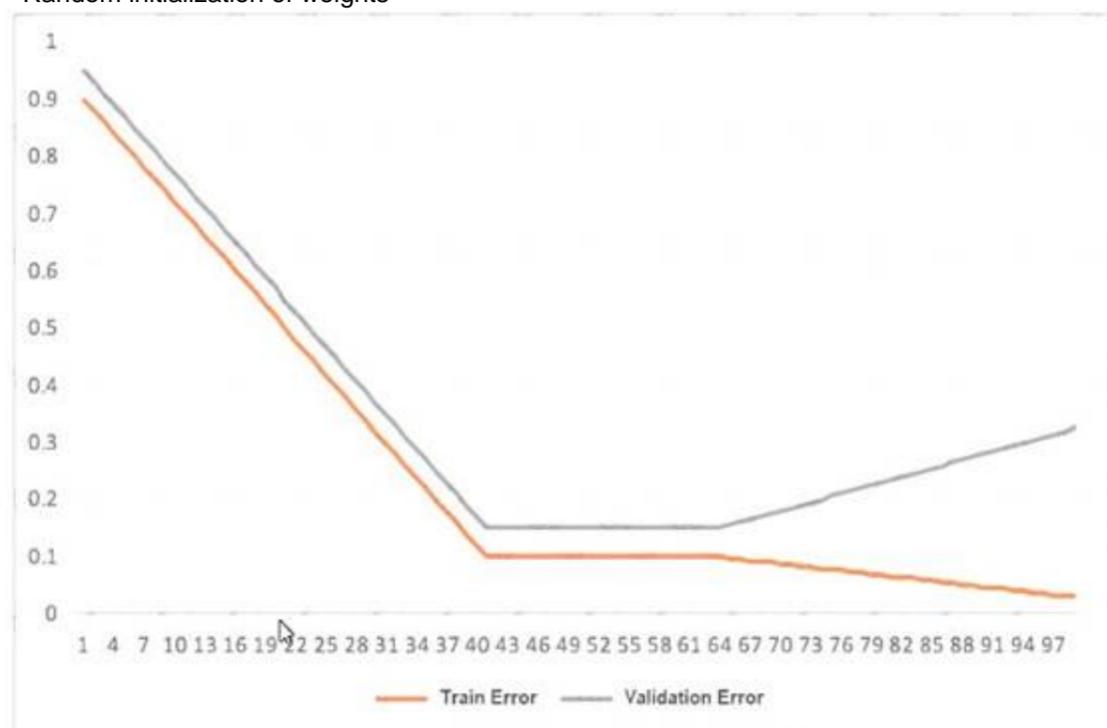
Answer: A

NEW QUESTION 98

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 100

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 105

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

Why is the ML Specialist not seeing the instance visible in the VPC?

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

Answer: C

NEW QUESTION 106

A Machine Learning Specialist is working with a large cybersecurity company that manages security events in real time for companies around the world. The cybersecurity company wants to design a solution that will allow it to use machine learning to score malicious events as anomalies on the data as it is being ingested. The company also wants to 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 EMR.
- C. 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 to transform the new data. Then use the built-in Random Cut Forest (RCF) model within Amazon SageMaker to detect anomalies in the data.

Answer: B

NEW QUESTION 110

A bank's Machine Learning team is developing an approach for credit card fraud detection. The company has a large dataset of historical data labeled as fraudulent. The goal is to build a model to take the information from new transactions and predict whether each transaction is fraudulent or not. Which built-in Amazon SageMaker machine learning algorithm should be used for modeling this problem?

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

Answer: C

NEW QUESTION 112

IT leadership wants to 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 SQL 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 113

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: B

NEW QUESTION 114

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 116

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: B

NEW QUESTION 120

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 121

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 126

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

Which approach should the Specialist use to continue working?

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

Answer: A

NEW QUESTION 128

A company is using Amazon Polly to translate plaintext documents to speech for automated company announcements. However, company acronyms are being mispronounced in the current documents. How should a Machine Learning Specialist address this issue for future documents?

- A. Convert current documents to SSML with pronunciation tags.
- B. Create an appropriate pronunciation lexicon.
- C. Output speech marks to guide in pronunciation.
- D. Use Amazon Lex to preprocess the text files for pronunciation.

Answer: A

NEW QUESTION 132

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