

Exam Questions AWS-Certified-Machine-Learning-Specialty

AWS Certified Machine Learning - Specialty

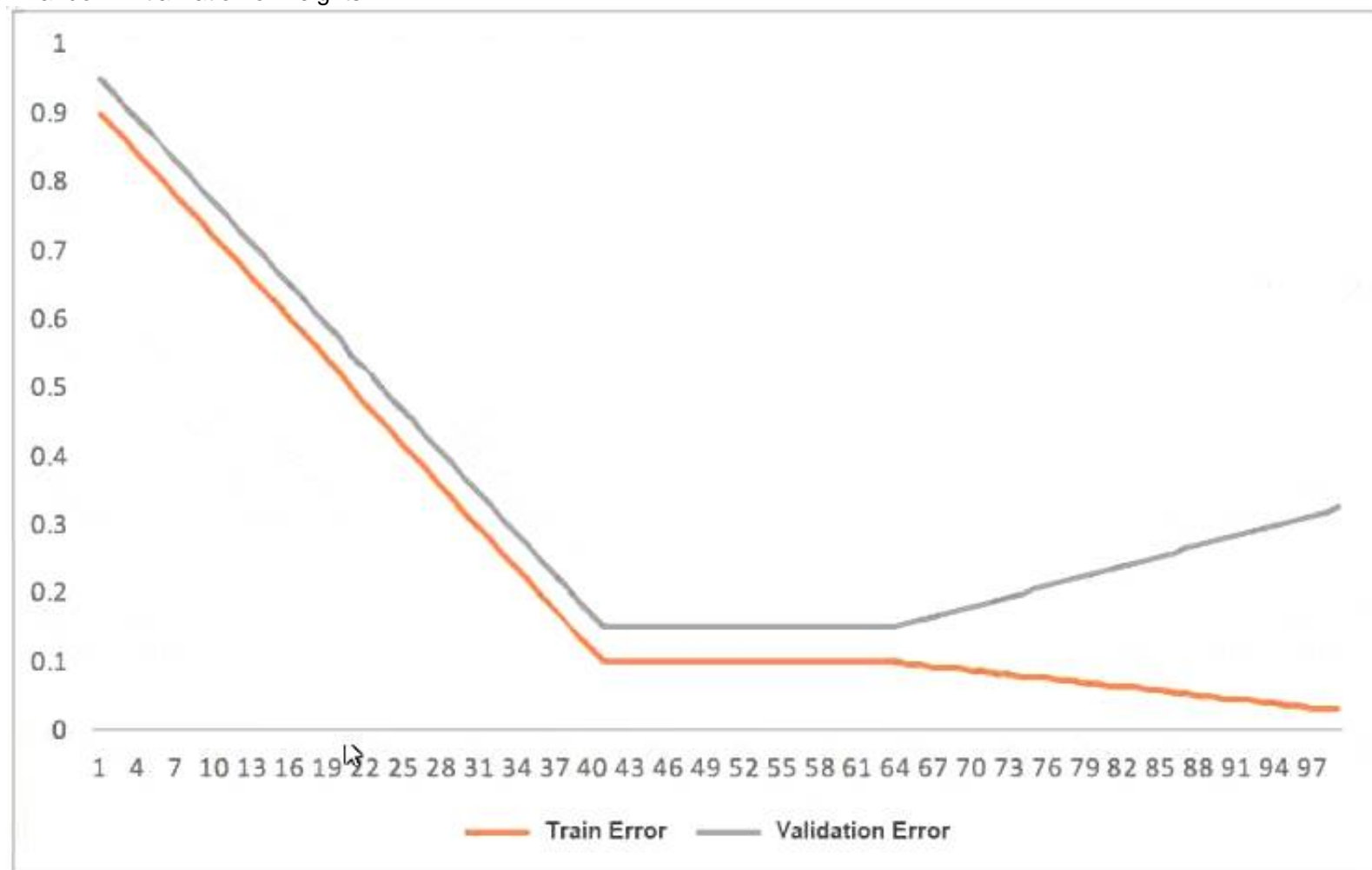
<https://www.2passeasy.com/dumps/AWS-Certified-Machine-Learning-Specialty/>



NEW QUESTION 1

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 2

A retail company wants to update its customer support system. The company wants to implement automatic routing of customer claims to different queues to prioritize the claims by category.

Currently, an operator manually performs the category assignment and routing. After the operator classifies and routes the claim, the company stores the claim's record in a central database. The claim's record includes the claim's category.

The company has no data science team or experience in the field of machine learning (ML). The company's small development team needs a solution that requires no ML expertise.

Which solution meets these requirements?

- A. Export the database to a .csv file with two columns: claim_label and claim_text
- B. Use the Amazon SageMaker Object2Vec algorithm and the .csv file to train a model
- C. Use SageMaker to deploy the model to an inference endpoint
- D. Develop a service in the application to use the inference endpoint to process incoming claims, predict the labels, and route the claims to the appropriate queue.
- E. Export the database to a .csv file with one column: claim_text
- F. Use the Amazon SageMaker Latent Dirichlet Allocation (LDA) algorithm and the .csv file to train a model
- G. Use the LDA algorithm to detect labels automatically
- H. Use SageMaker to deploy the model to an inference endpoint
- I. Develop a service in the application to use the inference endpoint to process incoming claims, predict the labels, and route the claims to the appropriate queue.
- J. Use Amazon Textract to process the database and automatically detect two columns: claim_label and claim_text
- K. Use Amazon Comprehend custom classification and the extracted information to train the custom classifier
- L. Develop a service in the application to use the Amazon Comprehend API to process incoming claims, predict the labels, and route the claims to the appropriate queue.
- M. Export the database to a .csv file with two columns: claim_label and claim_text
- N. Use Amazon Comprehend custom classification and the .csv file to train the custom classifier
- O. Develop a service in the application to use the Amazon Comprehend API to process incoming claims, predict the labels, and route the claims to the appropriate queue.

Answer: C

NEW QUESTION 3

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

- Profiles for all past and existing customers
- Profiles for all past and existing insured pets
- Policy-level information

- Premiums received
- Claims paid

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

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

Answer: C

NEW QUESTION 4

A data scientist has a dataset of machine part images stored in Amazon Elastic File System (Amazon EFS). The data scientist needs to use Amazon SageMaker to create and train an image classification machine learning model based on this dataset. Because of budget and time constraints, management wants the data scientist to create and train a model with the least number of steps and integration work required. How should the data scientist meet these requirements?

- A. Mount the EFS file system to a SageMaker notebook and run a script that copies the data to an Amazon FSx for Lustre file system
- B. Run the SageMaker training job with the FSx for Lustre file system as the data source.
- C. Launch a transient Amazon EMR cluster
- D. Configure steps to mount the EFS file system and copy the data to an Amazon S3 bucket by using S3DistC
- E. Run the SageMaker training job with Amazon S3 as the data source.
- F. Mount the EFS file system to an Amazon EC2 instance and use the AWS CLI to copy the data to an Amazon S3 bucket
- G. Run the SageMaker training job with Amazon S3 as the data source.
- H. Run a SageMaker training job with an EFS file system as the data source.

Answer: A

NEW QUESTION 5

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 6

A machine learning (ML) specialist is using Amazon SageMaker hyperparameter optimization (HPO) to improve a model's accuracy. The learning rate parameter is specified in the following HPO configuration:

```
{
  "Name": "learning_rate",
  "MaxValue" : "0.0001",
  "MinValue": "0.1"
}
```

During the results analysis, the ML specialist determines that most of the training jobs had a learning rate between 0.01 and 0.1. The best result had a learning rate of less than 0.01. Training jobs need to run regularly over a changing dataset. The ML specialist needs to find a tuning mechanism that uses different learning rates more evenly from the provided range between MinValue and MaxValue.

Which solution provides the MOST accurate result?

A. Modify the HPO configuration as follows: C:\Users\Admin\Desktop\Data\Odt data\Untitled.jpgSelect the most accurate hyperparameter configuration from this HPO job.

```
{
  "Name": "learning_rate",
  "MaxValue" : "0.0001",
  "MinValue": "0.1"
  "ScalingType": "ReverseLogarithmic"
}
```

B. Run three different HPO jobs that use different learning rates from the following intervals for MinValue and MaxValue while using the same number of training jobs for each HPO job:[0.01, 0.1][0.001, 0.01][0.0001, 0.001]Select the most accurate hyperparameter configuration from these three HPO jobs.

C. Modify the HPO configuration as follows: C:\Users\Admin\Desktop\Data\Odt data\Untitled.jpg

```
{  
    "Name": "learning_rate",  
    "MaxValue" : "0.0001",  
    "MinValue": "0.1"  
    "ScalingType": "Logarithmic"  
}
```

Select the most accurate hyperparameter configuration form this training job.

D. Run three different HPO jobs that use different learning rates form the following intervals for MinValue and MaxValu

E. Divide the number of training jobs for each HPO job by three:[0.01, 0.1][0.001, 0.01][0.0001, 0.001]Select the most accurate hyperparameter configuration form these three HPO jobs.

Answer: C

NEW QUESTION 7

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

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

Answer: DEF

NEW QUESTION 8

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 9

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 10

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 10

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

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

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

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

What can the Specialist learn from the experiments?

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

Answer: C

NEW QUESTION 13

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 17

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 phrase 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 phrase extraction, and classification tasks.
- B. Use an NLP library in Amazon SageMaker for the part-of-speech tagging.
- C. Use Amazon Comprehend for the key phrase extraction.
- 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 phrase 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 phrase extraction task.
- H. Use AWS Deep Learning Containers with Amazon SageMaker to build the custom classifier.

Answer: B

NEW QUESTION 20

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 transformation; Amazon 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 ingestion; Amazon 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 transformation; Amazon 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 transfer; AWS Step Functions for orchestrating AWS Lambda jobs for data discovery, enrichment, and transformation; Amazon Athena for querying and analyzing the results in Amazon S3 using standard SQL; Amazon QuickSight for reporting and getting insights.

Answer: A

NEW QUESTION 25

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

ask questions using written and spoken interlaces

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

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

Answer: BEF

NEW QUESTION 26

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 27

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 29

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

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

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

Answer: AC

NEW QUESTION 32

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 37

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 42

A trucking company is collecting live image data from its fleet of trucks across the globe. The data is growing rapidly and approximately 100 GB of new data is generated every day. The company wants to explore machine learning uses cases while ensuring the data is only accessible to specific IAM users.

Which storage option provides the most processing flexibility and will allow access control with IAM?

- A. Use a database, such as Amazon DynamoDB, to store the images, and set the IAM policies to restrict access to only the desired IAM users.
- B. Use an Amazon S3-backed data lake to store the raw images, and set up the permissions using bucket policies.
- C. Setup up Amazon EMR with Hadoop Distributed File System (HDFS) to store the files, and restrict access to the EMR instances using IAM policies.
- D. Configure Amazon EFS with IAM policies to make the data available to Amazon EC2 instances owned by the IAM users.

Answer: C

NEW QUESTION 47

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

Answer: B

NEW QUESTION 51

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 52

A company that promotes healthy sleep patterns by providing cloud-connected devices currently hosts a sleep tracking application on AWS. The application collects device usage information from device users. The company's Data Science team is building a machine learning model to predict if and when a user will stop utilizing the company's devices. Predictions from this model are used by a downstream application that determines the best approach for contacting users. The Data Science team is building multiple versions of the machine learning model to evaluate each version against the company's business goals. To measure long-term effectiveness, the team wants to run multiple versions of the model in parallel for long periods of time, with the ability to control the portion of inferences served by the models.

Which solution satisfies these requirements with MINIMAL effort?

- A. Build and host multiple models in Amazon SageMaker
- B. Create multiple Amazon SageMaker endpoints, one for each mode
- C. Programmatically control invoking different models for inference at the application layer.
- D. Build and host multiple models in Amazon SageMaker
- E. Create an Amazon SageMaker endpoint configuration with multiple production variant
- F. Programmatically control the portion of the inferences served by the multiple models by updating the endpoint configuration.
- G. Build and host multiple models in Amazon SageMaker Neo to take into account different types of medical device
- H. Programmatically control which model is invoked for inference based on the medical device type.
- I. Build and host multiple models in Amazon SageMaker
- J. Create a single endpoint that accesses multiple model

K. Use Amazon SageMaker batch transform to control invoking the different models through the single endpoint.

Answer: B

Explanation:

A/B testing with Amazon SageMaker is required in the Exam. In A/B testing, you test different variants of your models and compare how each variant performs. Amazon SageMaker enables you to test multiple models or model versions behind the `same endpoint` using `production variants`. Each production variant identifies a machine learning (ML) model and the resources deployed for hosting the model. To test multiple models by `distributing traffic` between them, specify the `percentage of the traffic` that gets routed to each model by specifying the `weight` for each `production variant` in the endpoint configuration.
<https://docs.aws.amazon.com/sagemaker/latest/dg/model-ab-testing.html#model-testing-target-variant>

NEW QUESTION 57

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 62

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

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

Answer: B

NEW QUESTION 67

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 69

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

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

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

Answer: C

NEW QUESTION 71

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 74

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 79

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: D

NEW QUESTION 84

Amazon Connect has recently been rolled 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 88

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

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

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

Answer: AB

NEW QUESTION 93

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 98

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 101

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 105

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 bucket
- 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 and SearchFacesByImage 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 bucket
- H. Set up a VPN connection and only call the Amazon Rekognition API operations through the VPN.

Answer: B

NEW QUESTION 106

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					Total
		A	B	C	D	E	
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 from 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 110

A Machine Learning Specialist is attempting to build a linear regression model. Given the displayed residual plot only, what is the MOST likely problem with the model?

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

Answer: D

NEW QUESTION 113

A data scientist has been running an Amazon SageMaker notebook instance for a few weeks. During this time, a new version of Jupyter Notebook was released along with additional software updates. The security team mandates that all running SageMaker notebook instances use the latest security and software updates provided by SageMaker.

How can the data scientist meet these requirements?

- A. Call the CreateNotebookInstanceLifecycleConfig API operation
- B. Create a new SageMaker notebook instance and mount the Amazon Elastic Block Store (Amazon EBS) volume from the original instance
- C. Stop and then restart the SageMaker notebook instance
- D. Call the UpdateNotebookInstanceLifecycleConfig API operation

Answer: C

NEW QUESTION 114

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

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

Which solution meets these requirements?

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

Answer: C

Explanation:

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

NEW QUESTION 118

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 119

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 code
- 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 deployment
- 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 deployment
- F. Build the image and upload it to Docker Hub.
- G. Build the Docker image with the inference code
- H. Configure Docker Hub and upload the image to Amazon ECR.

Answer: D

NEW QUESTION 123

A machine learning specialist is running an Amazon SageMaker endpoint using the built-in object detection algorithm on a P3 instance for real-time predictions in a company's production application. When evaluating the model's resource utilization, the specialist notices that the model is using only a fraction of the GPU.

Which architecture changes would ensure that provisioned resources are being utilized effectively?

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

Answer: B

Explanation:

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

NEW QUESTION 125

A company that runs an online library is implementing a chatbot using Amazon Lex to provide book recommendations based on category. This intent is fulfilled by an AWS Lambda function that queries an Amazon DynamoDB table for a list of book titles, given a particular category. For testing, there are only three categories implemented as the custom slot types: "comedy," "adventure," and "documentary."

A machine learning (ML) specialist notices that sometimes the request cannot be fulfilled because Amazon Lex cannot understand the category spoken by users with utterances such as "funny," "fun," and "humor." The ML specialist needs to fix the problem without changing the Lambda code or data in DynamoDB.

How should the ML specialist fix the problem?

- A. Add the unrecognized words in the enumeration values list as new values in the slot type.
- B. Create a new custom slot type, add the unrecognized words to this slot type as enumeration values, and use this slot type for the slot.
- C. Use the AMAZON.SearchQuery built-in slot types for custom searches in the database.
- D. Add the unrecognized words as synonyms in the custom slot type.

Answer: C

NEW QUESTION 127

A manufacturing company uses machine learning (ML) models to detect quality issues. The models use images that are taken of the company's product at the end of each production step. The company has thousands of machines at the production site that generate one image per second on average.

The company ran a successful pilot with a single manufacturing machine. For the pilot, ML specialists used an industrial PC that ran AWS IoT Greengrass with a long-running AWS Lambda function that uploaded the images to Amazon S3. The uploaded images invoked a Lambda function that was written in Python to perform inference by using an Amazon SageMaker endpoint that ran a custom model. The inference results were forwarded back to a web service that was hosted at the production site to prevent faulty products from being shipped.

The company scaled the solution out to all manufacturing machines by installing similarly configured industrial PCs on each production machine. However, latency for predictions increased beyond acceptable limits. Analysis shows that the internet connection is at its capacity limit.

How can the company resolve this issue MOST cost-effectively?

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

Answer: D

NEW QUESTION 129

A data scientist has developed a machine learning translation model for English to Japanese by using Amazon SageMaker's built-in seq2seq algorithm with 500,000 aligned sentence pairs. While testing with sample sentences, the data scientist finds that the translation quality is reasonable for an example as short as five words. However, the quality becomes unacceptable if the sentence is 100 words long. Which action will resolve the problem?

- A. Change preprocessing to use n-grams.
- B. Add more nodes to the recurrent neural network (RNN) than the largest sentence's word count.
- C. Adjust hyperparameters related to the attention mechanism.
- D. Choose a different weight initialization type.

Answer: C

Explanation:

<https://docs.aws.amazon.com/sagemaker/latest/dg/seq-2-seq-howitworks.html>

NEW QUESTION 130

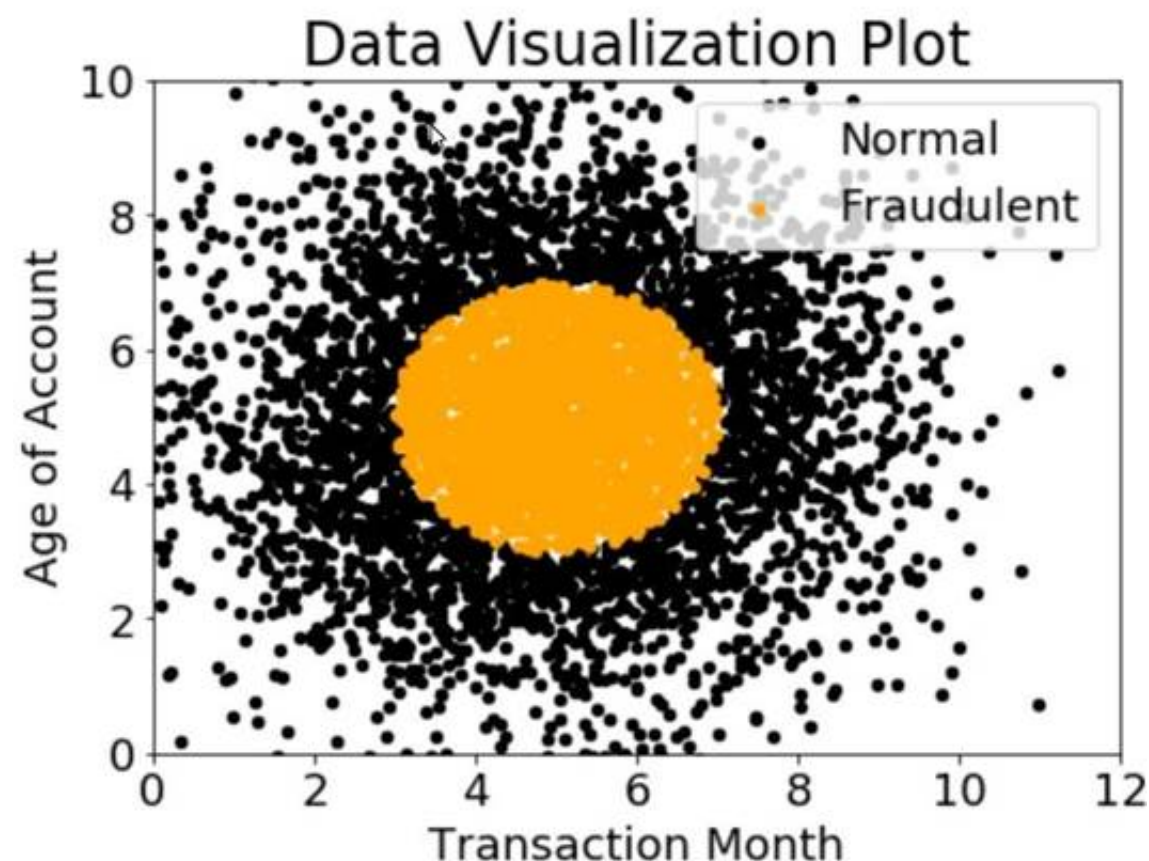
A company provisions Amazon SageMaker notebook instances for its data science team and creates Amazon VPC interface endpoints to ensure communication between the VPC and the notebook instances. All connections to the Amazon SageMaker API are contained entirely and securely using the AWS network. However, 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 VPC
- 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 VPC
- 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 133

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 138

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 (RMSE)
- D. L1 norm

Answer: A

NEW QUESTION 141

A data scientist must build a custom recommendation model in Amazon SageMaker for an online retail company. Due to the nature of the company's products, customers buy only 4-5 products every 5-10 years. So, the company relies on a steady stream of new customers. When a new customer signs up, the company collects data on the customer's preferences. Below is a sample of the data available to the data scientist.

timestamp	user_id	product_id	preference_1	...	preference_10
2020-03-04	90	25	0	...	0.374
2020-03-04	90	61	0	...	0.374
2020-02-21	203	56	1	...	0.098

How should the data scientist split the dataset into a training and test set for this use case?

- A. Shuffle all interaction data
- B. Split off the last 10% of the interaction data for the test set.
- C. Identify the most recent 10% of interactions for each user
- D. Split off these interactions for the test set.
- E. Identify the 10% of users with the least interaction data
- F. Split off all interaction data from these users for the test set.
- G. Randomly select 10% of the user
- H. Split off all interaction data from these users for the test set.

Answer: B

Explanation:

<https://aws.amazon.com/blogs/machine-learning/building-a-customized-recommender-system-in-amazon-sagemaker>

NEW QUESTION 146

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: B

Explanation:

<https://medium.com/search/convert-csv-json-files-to-apache-parquet-using-aws-glue-a760d177b45f> <https://github.com/ecloudvalley/Building-a-Data-Lake-with-AWS-Glue-and-Amazon-S3>

NEW QUESTION 148

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 151

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 154

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

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

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

Answer: A

NEW QUESTION 155

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 160

A company is observing low accuracy while training on the default built-in image classification algorithm in Amazon SageMaker. The Data Science team wants to use an Inception neural network architecture instead of a ResNet architecture. Which of the following will accomplish this? (Select TWO.)

- A. Customize the built-in image classification algorithm to use Inception and use this for model training.
- B. Create a support case with the SageMaker team to change the default image classification algorithm to Inception.
- C. Bundle a Docker container with TensorFlow Estimator loaded with an Inception network and use this for model training.
- D. Use custom code in Amazon SageMaker with TensorFlow Estimator to load the model with an Inception network and use this for model training.
- E. Download and apt-get install the inception network code into an Amazon EC2 instance and use this instance as a Jupyter notebook in Amazon SageMaker.

Answer: AD

NEW QUESTION 165

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

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

Answer: C

NEW QUESTION 168

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 171

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 172

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

Which techniques should the company use for feature selection? (Choose three.)

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

Answer: CDF

NEW QUESTION 177

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 182

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 187

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 version.
- B. Redirect production traffic to the new endpoint by updating the client configuration.
- 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 version.
- 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 variant.
- 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 188

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

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

After an exhaustive grid search, the optimal hyperparameters produced the following: 68% accuracy on the training set 67% accuracy on the validation set
What can the machine learning specialist do to improve the system's accuracy?

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

Answer: B

NEW QUESTION 192

A retail company uses a machine learning (ML) model for daily sales forecasting. The company's brand manager reports that the model has provided inaccurate results for the past 3 weeks.

At the end of each day, an AWS Glue job consolidates the input data that is used for the forecasting with the actual daily sales data and the predictions of the model. The AWS Glue job stores the data in Amazon S3. The company's ML team is using an Amazon SageMaker Studio notebook to gain an understanding about the source of the model's inaccuracies.

What should the ML team do on the SageMaker Studio notebook to visualize the model's degradation MOST accurately?

- A. Create a histogram of the daily sales over the last 3 week
- B. In addition, create a histogram of the daily sales from before that period.
- C. Create a histogram of the model errors over the last 3 week
- D. In addition, create a histogram of the model errors from before that period.
- E. Create a line chart with the weekly mean absolute error (MAE) of the model.
- F. Create a scatter plot of daily sales versus model error for the last 3 week
- G. In addition, create a scatter plot of daily sales versus model error from before that period.

Answer: C

NEW QUESTION 196

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

Which approach should the Specialist use to continue working?

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

Answer: D

NEW QUESTION 200

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 201

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 cod
- 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 SageMake
- 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 204

A manufacturing company wants to use machine learning (ML) to automate quality control in its facilities. The facilities are in remote locations and have limited internet connectivity. The company has 20 of training data that consists of labeled images of defective product parts. The training data is in the corporate on-premises data center. The company will use this data to train a model for real-time defect detection in new parts as the parts move on a conveyor belt in the facilities. The company needs a solution that minimizes costs for compute infrastructure and that maximizes the scalability of resources for training. The solution also must facilitate the company's use of an ML model in the low-connectivity environments. Which solution will meet these requirements?

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

Answer: A

NEW QUESTION 209

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: D

NEW QUESTION 214

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 215

A Machine Learning Specialist kicks off a hyperparameter tuning job for a tree-based ensemble model using Amazon SageMaker with Area Under the ROC Curve (AUC) as the objective metric. This workflow will eventually be deployed in a pipeline that retrains and tunes hyperparameters each night to model click-through on data that goes stale every 24 hours. With the goal of decreasing the amount of time it takes to train these models, and ultimately to decrease costs, the Specialist wants to reconfigure the input hyperparameter range(s). Which visualization will accomplish this?

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

Answer: D

NEW QUESTION 219

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 224

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

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

Answer: C

NEW QUESTION 225

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 227

A retail company is selling products through a global online marketplace. The company wants to use machine learning (ML) to analyze customer feedback and identify specific areas for improvement. A developer has built a tool that collects customer reviews from the online marketplace and stores them in an Amazon S3 bucket. This process yields a dataset of 40 reviews. A data scientist building the ML models must identify additional sources of data to increase the size of the dataset. Which data sources should the data scientist use to augment the dataset of reviews? (Choose three.)

- A. Emails exchanged by customers and the company's customer service agents
- B. Social media posts containing the name of the company or its products
- C. A publicly available collection of news articles
- D. A publicly available collection of customer reviews
- E. Product sales revenue figures for the company
- F. Instruction manuals for the company's products

Answer: BDF

NEW QUESTION 228

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

Explanation:

Using compressions will reduce the amount of data scanned by Amazon Athena, and also reduce your S3 bucket storage. It's a Win-Win for your AWS bill. Supported formats: GZIP, LZO, SNAPPY (Parquet) and ZLIB.

NEW QUESTION 232

A company is using Amazon Textract to extract textual data from thousands of scanned text-heavy legal documents daily. The company uses this information to process loan applications automatically. Some of the documents fail business validation and are returned to human reviewers, who investigate the errors. This activity increases the time to process the loan applications. What should the company do to reduce the processing time of loan applications?

- A. Configure Amazon Textract to route low-confidence predictions to Amazon SageMaker Ground Truth. Perform a manual review on those words before performing a business validation.
- B. Use an Amazon Textract synchronous operation instead of an asynchronous operation.
- C. Configure Amazon Textract to route low-confidence predictions to Amazon Augmented AI (AmazonA2I). Perform a manual review on those words before performing a business validation.
- D. Use Amazon Rekognition's feature to detect text in an image to extract the data from scanned images. Use this information to process the loan applications.

Answer: C

NEW QUESTION 235

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 237

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

What should the data scientist do to meet these requirements?

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

Answer: D

NEW QUESTION 239

A manufacturer is operating a large number of factories with a complex supply chain relationship where unexpected downtime of a machine can cause production to stop at several factories. A data scientist wants to analyze sensor data from the factories to identify equipment in need of preemptive maintenance and then dispatch a service team to prevent unplanned downtime. The sensor readings from a single machine can include up to 200 data points including temperatures, voltages, vibrations, RPMs, and pressure readings.

To collect this sensor data, the manufacturer deployed Wi-Fi and LANs across the factories. Even though many factory locations do not have reliable or high-speed internet connectivity, the manufacturer would like to maintain near-real-time inference capabilities.

Which deployment architecture for the model will address these business requirements?

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

Answer: B

Explanation:

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

NEW QUESTION 242

A Machine Learning Specialist is required to build a supervised image-recognition model to identify a cat. The ML Specialist performs some tests and records the following results for a neural network-based image classifier:

Total number of images available = 1,000 Test set images = 100 (constant test set)

The ML Specialist notices that, in over 75% of the misclassified images, the cats were held upside down by their owners.

Which techniques can be used by the ML Specialist to improve this specific test error?

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

Answer: A

NEW QUESTION 243

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 248

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 253

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: CD

NEW QUESTION 257

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