21. monitor-performance-multiple-versions-image-classification-model

Question

You have deployed multiple versions of an image classification model on AI Platform.

You want to monitor the performance of the model versions over time.

How should you perform this comparison?

Answers

- A. Compare the loss performance for each model on a held-out dataset.
- B. Compare the loss performance for each model on the validation data.
- C. Compare the receiver operating characteristic (ROC) curve for each model using the What-If Tool.
- D. Compare the mean average precision across the models using the Continuous Evaluation feature.

Show Answer

22.

Question

You trained a text classification model.

You have the following SignatureDefs:

```
signature_def['serving_default']:
  The given SavedModel SignatureDef contains the following input(s):
    inputs['text'] tensor_info:
        dtype: DT_STRING
        shape: (-1, 2)
        name: serving_default_text: 0
  The given SavedModel SignatureDef contains the following output(s):
    outputs ['Softmax'] tensor_info:
        dtype: DT_FLOAT
        shape: (-1, 2)
        name: StatefulPartitionedCall:0
  Method name is: tensorflow/serving/predict
```

You started a TensorFlow-serving component server and tried to send an HTTP request to get a prediction using: headers = {"content-type": "application/json"} json_response = requests.post('http://localhost:8501/v1/models/text_model:predict', data=data, headers=headers) What is the correct way to write the predict request?

Answers

- A. data = json.dumps({signature_name: seving_default, instances [[`ab`, `bc`, `cd`]]})
- B. data = json.dumps({signature_name: serving_default, instances [[`a`, `b`, `c`, `d`, `e`, `f`]]})
- C. data = json.dumps({signature_name: serving_default, instances [[`a`, `b`, `c`], [`d`, `e`, `f`]]})
- D. data = json.dumps({signature_name: serving_default, instances [[`a`, `b`], [`c`, `d`], [`e`, `f`]]})

Show Answer

23.

Question

Your organization's call center has asked you to develop a model that analyzes customer sentiments in each call.

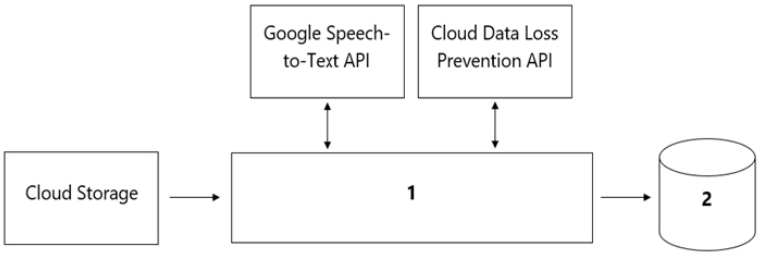
The call center receives over one million calls daily, and data is stored in Cloud Storage.

The data collected must not leave the region in which the call originated, and no Personally Identifiable Information (PII) can be stored or analyzed.

The data science team has a third-party tool for visualization and access which requires a SQL ANSI-2011 compliant interface.

You need to select components for data processing and for analytics.

How should the data pipeline be designed?



Answers

- A. 1= Dataflow, 2= BigQuery
- B. 1 = Pub/Sub, 2= Datastore
- C. 1 = Dataflow, 2 = Cloud SQL
- D. 1 = Cloud Function, 2= Cloud SQL.

Show Answer

24. the-best-model-for-product-recommendations

Question

You are an ML engineer at a global shoe store.

You manage the ML models for the company's website.

You are asked to build a model that will recommend new products to the user based on their purchase behavior and similarity with other users.

What should you do?

Answers

- A. Build a classification model
- B. Build a knowledge-based filtering model
- C. Build a collaborative-based filtering model
- D. Build a regression model using the features as predictors.

Show Answer

25. social-media-company-precision-adjustment

Question

You work for a social media company.

You need to detect whether posted images contain cars.

Each training example is a member of exactly one class.

You have trained an object detection neural network and deployed the model version to AI Platform Prediction for evaluation.

Before deployment, you created an evaluation job and attached it to the AI Platform Prediction model version.

You notice that the precision is lower than your business requirements allow.

How should you adjust the model's final layer softmax threshold to increase precision?

Answers

- A. Increase the recall.
- B. Decrease the recall.
- C. Increase the number of false positives.
- D. Decrease the number of false negatives.

Show Answer

26. what-is-the-best-cloud-native-data-integration-service-for-unified-analytics

Question

You are responsible for building a unified analytics environment across a variety of on-premises data marts.

Your company is experiencing data quality and security challenges when integrating data across the servers, caused by the use of a wide range of disconnected tools and temporary solutions.

You need a fully managed, cloud-native data integration service that will lower the total cost of work and reduce repetitive work.

Some members on your team prefer a codeless interface for building Extract, Transform, Load (ETL) process.

Which service should you use?

Answers

- A. Dataflow
- B. Dataprep
- C. Apache Flink
- D. Cloud Data Fusion.

Show Answer

27. best-practices-for-building-insurance-approval-model

Question

You are an ML engineer at a regulated insurance company.

You are asked to develop an insurance approval model that accepts or rejects insurance applications from potential customers.

What factors should you consider before building the model?

Answers

- A. Redaction, reproducibility, and explainability
- B. Traceability, reproducibility, and explainability
- C. Federated learning, reproducibility, and explainability
- D. Differential privacy, federated learning, and explainability.

Show Answer

28. resnet-model-training-optimization-tfdata-dataset

Question

You are training a Resnet model on AI Platform using TPUs to visually categorize types of defects in automobile engines.

You capture the training profile using the Cloud TPU profiler plugin and observe that it is highly input-bound.

You want to reduce the bottleneck and speed up your model training process.

Which modifications should you make to the tf.data dataset? (Choose two.)

Answers

- A. Use the interleave option for reading data.
- B. Reduce the value of the repeat parameter.
- C. Increase the buffer size for the shuttle option.
- D. Set the prefetch option equal to the training batch size.
- E. Decrease the batch size argument in your transformation.

Show Answer

29. faq-pmle-professional-machine-learning-engineer-google-architecture

Question

You have trained a model on a dataset that required computationally expensive preprocessing operations.

You need to execute the same preprocessing at prediction time.

You deployed the model on AI Platform for high-throughput online prediction.

Which architecture should you use?

Answers

- A. Validate the accuracy of the model that you trained on preprocessed data. Create a new model that uses the raw data and is available in real time. Deploy the new model onto AI Platform for online prediction.
- B. Send incoming prediction requests to a Pub/Sub topic. Transform the incoming data using a Dataflow job. Submit a prediction request to AI Platform using the transformed data. Write the predictions to an outbound Pub/Sub queue.
- C. Stream incoming prediction request data into Cloud Spanner. Create a view to abstract your preprocessing logic. Query the view every second for new records. Submit a prediction request to AI Platform using the transformed data. Write the predictions to an outbound Pub/Sub queue.
- D. Send incoming prediction requests to a Pub/Sub topic. Set up a Cloud Function that is triggered when messages are published to the Pub/Sub topic. Implement your preprocessing logic in the Cloud Function. Submit a prediction request to AI Platform using the transformed data. Write the predictions to an outbound Pub/Sub queue.

Show Answer

30. best-practices-input-data-distribution-changes

Question

Your team trained and tested a DNN regression model with good results.

Six months after deployment, the model is performing poorly due to a change in the distribution of the input data.

How should you address the input differences in production?

Answers

- A. Create alerts to monitor for skew, and retrain the model.
- B. Perform feature selection on the model, and retrain the model with fewer features.
- C. Retrain the model, and select an L2 regularization parameter with a hyperparameter tuning service.
- D. Perform feature selection on the model, and retrain the model on a monthly basis with fewer features.

Show Answer

Prev Question Next Question

31. best-practices-solve-oom-error-gpu-training

Question

You need to train a computer vision model that predicts the type of government ID present in a given image using a GPU-powered virtual machine on Compute Engine.

You use the following parameters: -> Optimizer: SGD -> Image shape = 224-224 -> Batch size = 64 -> Epochs = 10 -> Verbose =2 During training you encounter the following error: ResourceExhaustedError: Out Of Memory (OOM) when allocating tensor.

What should you do?

Answers

- A. Change the optimizer.
- B. Reduce the batch size.
- C. Change the learning rate.
- D. Reduce the image shape.

Show Answer

32. the-best-way-to-improve-serving-latency-without-changing-infrastructure

Question

You developed an ML model with AI Platform, and you want to move it to production.

You serve a few thousand queries per second and are experiencing latency issues.

Incoming requests are served by a load balancer that distributes them across multiple Kubeflow CPU-only pods running on Google Kubernetes Engine (GKE)

Your goal is to improve the serving latency without changing the underlying infrastructure.

What should you do?

Answers

- A. Significantly increase the max_batch_size TensorFlow Serving parameter.
- B. Switch to the tensorflow-model-server-universal version of TensorFlow Serving.
- C. Significantly increase the max_enqueued_batches TensorFlow Serving parameter.
- D. Recompile TensorFlow Serving using the source to support CPU-specific optimizations. Instruct GKE to choose an appropriate baseline minimum CPU platform for serving nodes.

Show Answer

33. demand-forecasting-pipeline-optimization

Question

You have a demand forecasting pipeline in production that uses Dataflow to preprocess raw data prior to model training and prediction.

During preprocessing, you employ Z-score normalization on data stored in BigQuery and write it back to BigQuery.

New training data is added every week.

You want to make the process more efficient by minimizing computation time and manual intervention.

What should you do?

Answers

- A. Normalize the data using Google Kubernetes Engine.
- B. Translate the normalization algorithm into SQL for use with BigQuery.
- C. Use the normalizer_fn argument in TensorFlow`s Feature Column API.
- D. Normalize the data with Apache Spark using the Dataproc connector for BigQuery.

Show Answer

34. keras-customized-deep-neural-network-predict-customer-purchases

Question

You need to design a customized deep neural network in Keras that will predict customer purchases based on their purchase history.

You want to explore model performance using multiple model architectures, store training data, and be able to compare the evaluation metrics in the same dashboard.

What should you do?

Answers

- A. Create multiple models using AutoML Tables.
- B. Automate multiple training runs using Cloud Composer.
- C. Run multiple training jobs on AI Platform with similar job names.
- D. Create an experiment in Kubeflow Pipelines to organize multiple runs.

Show Answer

Prev Question Next Question

35. developing-kubeflow-pipeline-google-kubernetes-engine

Question

You are developing a Kubeflow pipeline on Google Kubernetes Engine.

The first step in the pipeline is to issue a query against BigQuery.

You plan to use the results of that query as the input to the next step in your pipeline.

You want to achieve this in the easiest way possible.

What should you do?

Answers

- A. Use the BigQuery console to execute your query, and then save the query results into a new BigQuery table.
- B. Write a Python script that uses the BigQuery API to execute queries against BigQuery. Execute this script as the first step in your Kubeflow pipeline.
- C. Use the Kubeflow Pipelines domain-specific language to create a custom component that uses the Python BigQuery client library to execute queries.
- D. Locate the Kubeflow Pipelines repository on GitHub. Find the BigQuery Query Component, copy that component`s URL, and use it to load the component into your pipeline. Use the component to execute queries against BigQuery.

Show Answer

Prev Question Next Question

36. weather-prediction-model-accuracy-tips

Question

You are building a model to predict daily temperatures.

You split the data randomly and then transformed the training and test datasets.

Temperature data for model training is uploaded hourly.

During testing, your model performed with 97% accuracy; however, after deploying to production, the model's accuracy dropped to 66%

How can you make your production model more accurate?

Answers

- A. Normalize the data for the training, and test datasets as two separate steps.
- B. Split the training and test data based on time rather than a random split to avoid leakage.
- C. Add more data to your test set to ensure that you have a fair distribution and sample for testing.
- D. Apply data transformations before splitting, and cross-validate to make sure that the transformations are applied to both the training and test sets.

Show Answer

37. the-best-way-to-serve-predictions-for-global-bank-account-balance-notifications

Question

Your team is building an application for a global bank that will be used by millions of customers.

You built a forecasting model that predicts customers' account balances 3 days in the future.

Your team will use the results in a new feature that will notify users when their account balance is likely to drop below $25

How should you serve your predictions?

Answers

- A. 1. Create a Pub/Sub topic for each user. 2. Deploy a Cloud Function that sends a notification when your model predicts that a user`s account balance will drop below the $25 threshold.
- B. 1. Create a Pub/Sub topic for each user. 2. Deploy an application on the App Engine standard environment that sends a notification when your model predicts that a user`s account balance will drop below the $25 threshold.
- C. 1. Build a notification system on Firebase. 2. Register each user with a user ID on the Firebase Cloud Messaging server, which sends a notification when the average of all account balance predictions drops below the $25 threshold.
- D. 1. Build a notification system on Firebase. 2. Register each user with a user ID on the Firebase Cloud Messaging server, which sends a notification when your model predicts that a user`s account balance will drop below the $25 threshold.

Show Answer

Prev Question Next Question

38. the-effectiveness-of-latest-advertising-campaign

Question

You work for an advertising company and want to understand the effectiveness of your company's latest advertising campaign.

You have streamed 500 MB of campaign data into BigQuery.

You want to query the table, and then manipulate the results of that query with a pandas dataframe in an AI Platform notebook.

What should you do?

Answers

- A. Use AI Platform Notebooks` BigQuery cell magic to query the data, and ingest the results as a pandas dataframe.
- B. Export your table as a CSV file from BigQuery to Google Drive, and use the Google Drive API to ingest the file into your notebook instance.
- C. Download your table from BigQuery as a local CSV file, and upload it to your AI Platform notebook instance. Use pandas.read_csv to ingest he file as a pandas dataframe.
- D. From a bash cell in your AI Platform notebook, use the bq extract command to export the table as a CSV file to Cloud Storage, and then use gsutil cp to copy the data into the notebook. Use pandas.read_csv to ingest the file as a pandas dataframe.

Show Answer

Prev Question Next Question

39. best-features-train-ml-model-car-sales

Question

You are an ML engineer at a global car manufacture.

You need to build an ML model to predict car sales in different cities around the world.

Which features or feature crosses should you use to train city-specific relationships between car type and number of sales?

Answers

- A. Thee individual features: binned latitude, binned longitude, and one-hot encoded car type.
- B. One feature obtained as an element-wise product between latitude, longitude, and car type.
- C. One feature obtained as an element-wise product between binned latitude, binned longitude, and one-hot encoded car type.
- D. Two feature crosses as an element-wise product: the first between binned latitude and one-hot encoded car type, and the second between binned longitude and one-hot encoded car type.

Show Answer

Prev Question Next Question

40. best-solution-classify-incoming-calls-seo

Question

You work for a large technology company that wants to modernize their contact center.

You have been asked to develop a solution to classify incoming calls by product so that requests can be more quickly routed to the correct support team.

You have already transcribed the calls using the Speech-to-Text API.

You want to minimize data preprocessing and development time.

How should you build the model?

Answers

- A. Use the AI Platform Training built-in algorithms to create a custom model.
- B. Use AutoMIL Natural Language to extract custom entities for classification.
- C. Use the Cloud Natural Language API to extract custom entities for classification.
- D. Build a custom model to identify the product keywords from the transcribed calls, and then run the keywords through a classification algorithm.

Show Answer

Prev Question Next Question