



Google

Exam Questions Professional-Machine-Learning-Engineer

Google Professional Machine Learning Engineer

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NEW QUESTION 1

Your organization wants to make its internal shuttle service route more efficient. The shuttles currently stop at all pick-up points across the city every 30 minutes between 7 am and 10 am. The development team has already built an application on Google Kubernetes Engine that requires users to confirm their presence and shuttle station one day in advance. What approach should you take?

- A. 1. Build a tree-based regression model that predicts how many passengers will be picked up at each shuttle station.* 2. Dispatch an appropriately sized shuttle and provide the map with the required stops based on the prediction.
- B. 1. Build a tree-based classification model that predicts whether the shuttle should pick up passengers at each shuttle station.* 2. Dispatch an available shuttle and provide the map with the required stops based on the prediction
- C. 1. Define the optimal route as the shortest route that passes by all shuttle stations with confirmed attendance at the given time under capacity constraints.* 2. Dispatch an appropriately sized shuttle and indicate the required stops on the map
- D. 1. Build a reinforcement learning model with tree-based classification models that predict the presence of passengers at shuttle stops as agents and a reward function around a distance-based metric* 2. Dispatch an appropriately sized shuttle and provide the map with the required stops based on the simulated outcome.

Answer: D

NEW QUESTION 2

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?

- 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

Answer: C

NEW QUESTION 3

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 2 answers

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

Answer: AD

NEW QUESTION 4

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?

- 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

Answer: A

NEW QUESTION 5

You recently joined a machine learning team that will soon release a new project. As a lead on the project, you are asked to determine the production readiness of the ML components. The team has already tested features and data, model development, and infrastructure. Which additional readiness check should you recommend to the team?

- A. Ensure that training is reproducible
- B. Ensure that all hyperparameters are tuned
- C. Ensure that model performance is monitored
- D. Ensure that feature expectations are captured in the schema

Answer: B

NEW QUESTION 6

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?

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

Answer: D

NEW QUESTION 7

You work with a data engineering team that has developed a pipeline to clean your dataset and save it in a Cloud Storage bucket. You have created an ML model and want to use the data to refresh your model as soon as new data is available. As part of your CI/CD workflow, you want to automatically run a Kubeflow Pipelines training job on Google Kubernetes Engine (GKE). How should you architect this workflow?

- A. Configure your pipeline with Dataflow, which saves the files in Cloud Storage After the file is saved, start the training job on a GKE cluster
- B. Use App Engine to create a lightweight python client that continuously polls Cloud Storage for new files As soon as a file arrives, initiate the training job
- C. Configure a Cloud Storage trigger to send a message to a Pub/Sub topic when a new file is available in a storage bucket
- D. Use a Pub/Sub-triggered Cloud Function to start the training job on a GKE cluster
- E. Use Cloud Scheduler to schedule jobs at a regular interval
- F. For the first step of the job
- G. check the timestamp of objects in your Cloud Storage bucket If there are no new files since the last run, abort the job.

Answer: A

NEW QUESTION 8

You have a functioning end-to-end ML pipeline that involves tuning the hyperparameters of your ML model using AI Platform, and then using the best-tuned parameters for training. Hypertuning is taking longer than expected and is delaying the downstream processes. You want to speed up the tuning job without significantly compromising its effectiveness. Which actions should you take?

Choose 2 answers

- A. Decrease the number of parallel trials
- B. Decrease the range of floating-point values
- C. Set the early stopping parameter to TRUE
- D. Change the search algorithm from Bayesian search to random search.
- E. Decrease the maximum number of trials during subsequent training phases.

Answer: DE

NEW QUESTION 9

You have trained a text classification model in TensorFlow using AI Platform. You want to use the trained model for batch predictions on text data stored in BigQuery while minimizing computational overhead. What should you do?

- A. Export the model to BigQuery ML.
- B. Deploy and version the model on AI Platform.
- C. Use Dataflow with the SavedModel to read the data from BigQuery
- D. Submit a batch prediction job on AI Platform that points to the model location in Cloud Storage.

Answer: A

NEW QUESTION 10

You are designing an ML recommendation model for shoppers on your company's ecommerce website. You will use Recommendations AI to build, test, and deploy your system. How should you develop recommendations that increase revenue while following best practices?

- A. Use the "Other Products You May Like" recommendation type to increase the click-through rate
- B. Use the "Frequently Bought Together" recommendation type to increase the shopping cart size for each order.
- C. Import your user events and then your product catalog to make sure you have the highest quality event stream
- D. Because it will take time to collect and record product data, use placeholder values for the product catalog to test the viability of the model.

Answer: C

NEW QUESTION 10

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?

- A. Use the AI Platform Training built-in algorithms to create a custom model
- B. Use AutoML 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

Answer: A

NEW QUESTION 13

You built and manage a production system that is responsible for predicting sales numbers. Model accuracy is crucial, because the production model is required to keep up with market changes. Since being deployed to production, the model hasn't changed; however the accuracy of the model has steadily deteriorated. What issue is most likely causing the steady decline in model accuracy?

- A. Poor data quality
- B. Lack of model retraining
- C. Too few layers in the model for capturing information
- D. Incorrect data split ratio during model training, evaluation, validation, and test

Answer: D

NEW QUESTION 15

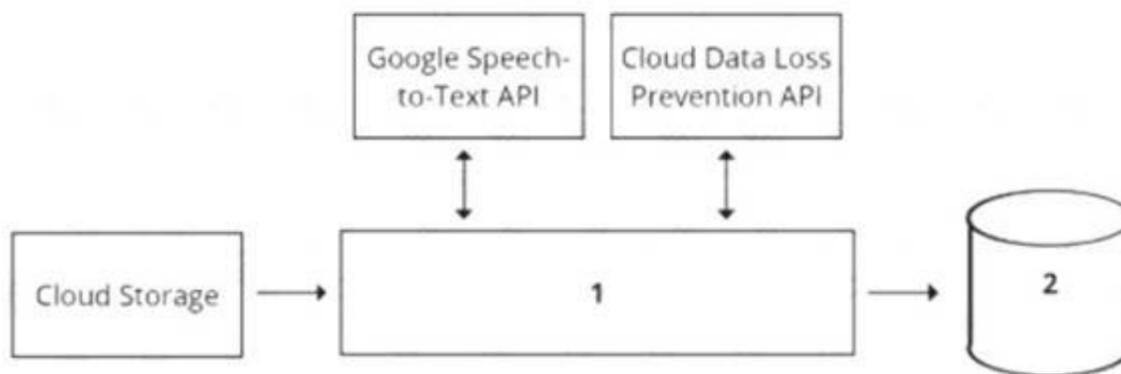
You have trained a model on a dataset that required computationally expensive preprocessing operations. You need to execute the same preprocessing at prediction time. You deployed the model on AI Platform for high-throughput online prediction. Which architecture should you use?

- 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

Answer: D

NEW QUESTION 16

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?



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

Answer: D

NEW QUESTION 19

Your team needs to build a model that predicts whether images contain a driver's license, passport, or credit card. The data engineering team already built the pipeline and generated a dataset composed of 10,000 images with driver's licenses, 1,000 images with passports, and 1,000 images with credit cards. You now have to train a model with the following label map: ['driverslicense', 'passport', 'credit_card']. Which loss function should you use?

- A. Categorical hinge
- B. Binary cross-entropy
- C. Categorical cross-entropy
- D. Sparse categorical cross-entropy

Answer: B

NEW QUESTION 21

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