EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 272 DISCUSSI...

Actual exam question from Google's Professional Machine Learning Engineer
Question #: 272
Topic #: 1
[All Professional Machine Learning Engineer Questions]

You work for a semiconductor manufacturing company. You need to create a real-time application that automates the quality control process. High-definition images of each semiconductor are taken at the end of the assembly line in real time. The photos are uploaded to a Cloud Storage bucket along with tabular data that includes each semiconductor's batch number, serial number, dimensions, and weight. You need to configure model training and serving while maximizing model accuracy. What should you do?

A. Use Vertex AI Data Labeling Service to label the images, and tram an AutoML image classification model. Deploy the model, and configure Pub/Sub to publish a message when an image is categorized into the failing class.

B. Use Vertex AI Data Labeling Service to label the images, and train an AutoML image classification model. Schedule a daily batch prediction job that publishes a Pub/Sub message when the job completes.

C. Convert the images into an embedding representation. Import this data into BigQuery, and train a BigQuery ML K-means clustering model with two clusters. Deploy the model and configure Pub/Sub to publish a message when a semiconductor's data is categorized into the failing cluster.

D. Import the tabular data into BigQuery, use Vertex AI Data Labeling Service to label the data and train an AutoML tabular classification model. Deploy the model, and configure Pub/Sub to publish a message when a semiconductor's data is categorized into the failing class.

Show Suggested Answer

by daidai75 at *Jan. 8, 2024, 12:21 p.m.*

Comments

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AzureDP900 3 months, 2 weeks ago

Option A is correct
The high-definition images of each semiconductor are taken in real-time at the end of the assembly line.
The images are uploaded to Cloud Storage along with tabular data that includes batch number, serial number, dimensions, and weight.
You need to configure model training and serving while maximizing model accuracy.

upvoted 1 times

omermahgoub 6 months, 1 week ago

Selected Answer: A

Real-time Processing, uploading images to Cloud Storage triggers the AutoML image classification model for immediate processing, enabling real-time quality control decisions.
Image Classification, the scenario focuses on classifying images as "passing" or "failing" quality, making image classification the appropriate approach.
Pub/Sub Notifications, Pub/Sub messaging efficiently alerts downstream systems about failing classifications, allowing for prompt quality control actions.

upvoted 3 times

b1a8fae 9 months ago

Selected Answer: A

I go with A.

upvoted 3 times

pikachu007 9 months, 1 week ago

Selected Answer: D

Option B: Batch prediction jobs introduce latency, making them unsuitable for real-time quality control.
Option C: K-means clustering is an unsupervised learning technique that doesn't leverage labeled data to distinguish between passing and failing semiconductors, potentially compromising accuracy.
Option D: Tabular classification focuses on structured data, not images, and might overlook visual defects captured in the photos.

upvoted 1 times

- **daidai75** 9 months ago

  I am afraid the option D is not correct, since this is a image classification task.

  upvoted 1 times

- **pikachu007** 9 months, 1 week ago

  The answer should be A*

  upvoted 3 times

daidai75 9 months, 2 weeks ago

Selected Answer: A

The right answer should be A

upvoted 1 times

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