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📄 **EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 223 DISCUSSI...**

Actual exam question from Google's Professional Machine Learning Engineer
Question #: 223
Topic #: 1
[All Professional Machine Learning Engineer Questions]

You work for a pharmaceutical company based in Canada. Your team developed a BigQuery ML model to predict the number of flu infections for the next month in Canada. Weather data is published weekly, and flu infection statistics are published monthly. You need to configure a model retraining policy that minimizes cost. What should you do?

A. Download the weather and flu data each week. Configure Cloud Scheduler to execute a Vertex AI pipeline to retrain the model weekly.

B. Download the weather and flu data each month. Configure Cloud Scheduler to execute a Vertex AI pipeline to retrain the model monthly.

C. Download the weather and flu data each week. Configure Cloud Scheduler to execute a Vertex AI pipeline to retrain the model every month.

D. Download the weather data each week, and download the flu data each month. Deploy the model to a Vertex AI endpoint with feature drift monitoring, and retrain the model if a monitoring alert is detected.

Show Suggested Answer

by 👤 **pikachu007** at *Jan. 13, 2024, 7:19 a.m.*

Comments

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⊟ 👤 **fitri001** 6 months, 3 weeks ago

Selected Answer: D

Weather Data Update: Downloading weather data weekly captures the latest trends potentially influencing flu infections.
Flu Data Update: Downloading flu statistics monthly aligns with the data publication schedule and avoids unnecessary processing for data that might not have changed.
Feature Drift Monitoring: Vertex AI endpoint monitoring helps identify significant changes in the weather data distribution (feature drift) over time.
Retrain Based on Alerts: Retraining the model is triggered only when feature drift is detected, ensuring the model stays relevant without unnecessary retraining cycles.

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⠀⠀⊟ 👤 **fitri001** 6 months, 3 weeks ago

⠀⠀A. Weekly Retraining: Retraining the model every week incurs processing costs even if the flu data (target variable) hasn't changed, potentially leading to wasted resources.
⠀⠀B. Monthly Retraining: While cheaper than option A, it might miss capturing the impact of recent weather changes on flu infections.
⠀⠀C. Weekly Data Download, Monthly Retraining: This approach downloads weather data more frequently than necessary and still incurs retraining costs even if feature drift hasn't occurred.

⠀⠀👍 ↩ 🏳 upvoted 1 times

⊟ 👤 **pinimichele01** 7 months ago

Selected Answer: D

minimize cost

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⊟ 👤 **guilhermebutzke** 8 months, 2 weeks ago

Selected Answer: D

My Answer: D

Even though the model predicts values for the next month, it is necessary to consume weekly data because the model's output could change based on new weekly data. Therefore, it is necessary to download data weekly and monthly. Furthermore, it is not necessary to retrain the model if the feature distribution remains unchanged.

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⊟ 👤 **b1a8fae** 9 months, 3 weeks ago

Selected Answer: D

D. This way, cost is minimized by only retraining when feature drift takes place.

👍 ↩ 🏳 upvoted 4 times

⊟ 👤 **pikachu007** 9 months, 3 weeks ago

Selected Answer: D

Selective Retraining: Retraining occurs only when necessary, triggered by feature drift alerts, reducing cloud resource usage and associated costs.
Efficient Data Utilization: Weather data is downloaded weekly to capture potential changes, but model retraining waits for monthly flu data, ensuring model relevance without excessive updates.
Early Drift Detection: Vertex AI's feature drift monitoring proactively identifies model performance degradation, prompting timely retraining to maintain accuracy.

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