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EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 260 DISCUSSI...

Actual exam question from Google's Professional Machine Learning Engineer
Question #: 260
Topic #: 1
[All Professional Machine Learning Engineer Questions]

You are developing a model to predict whether a failure will occur in a critical machine part. You have a dataset consisting of a multivariate time series and labels indicating whether the machine part failed. You recently started experimenting with a few different preprocessing and modeling approaches in a Vertex AI Workbench notebook. You want to log data and track artifacts from each run. How should you set up your experiments?

A. 1. Use the Vertex AI SDK to create an experiment and set up Vertex ML Metadata.
2. Use the log_time_series_metrics function to track the preprocessed data, and use the log_merrics function to log loss values.

B. 1. Use the Vertex AI SDK to create an experiment and set up Vertex ML Metadata.
2. Use the log_time_series_metrics function to track the preprocessed data, and use the log_metrics function to log loss values.

C. 1. Create a Vertex AI TensorBoard instance and use the Vertex AI SDK to create an experiment and associate the TensorBoard instance.
2. Use the assign_input_artifact method to track the preprocessed data and use the log_time_series_metrics function to log loss values.

D. 1. Create a Vertex AI TensorBoard instance, and use the Vertex AI SDK to create an experiment and associate the TensorBoard instance.
2. Use the log_time_series_metrics function to track the preprocessed data, and use the log_metrics function to log loss values.

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by winston9 at *Jan. 16, 2024, 2:23 p.m.*

Comments

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Dirtie_Sinkie 1 month ago

Selected Answer: C

C sounds more correct

upvoted 1 times

tungdeptraiqua 3 months ago

Selected Answer: B

A and B are the same

upvoted 1 times

fitri001 5 months, 4 weeks ago

Selected Answer: B

Vertex AI Experiment and ML Metadata: This is the foundation for tracking experiments and artifacts within Vertex AI.expand_more Creating an experiment allows you to group related runs and log data associated with those runs. ML Metadata helps manage the lineage of data and models used in your experiments.expand_more

Logging Data:

log_time_series_metrics: This function is specifically designed for tracking time-series data, making it suitable for logging the preprocessed multivariate time series data in your experiment.
log_metrics: This function is appropriate for logging loss values during model training. It can handle numerical values like loss efficiently.
By combining these techniques, you can effectively track both the preprocessed data (time series) and the training performance metrics (loss values) within your Vertex AI Experiment.

upvoted 4 times

fitri001 5 months, 4 weeks ago

Option A: It lacks the functionality to log preprocessed data (no log_time_series_metrics).
Option C and D: While TensorBoard can be used for visualization, it's not directly related to logging data within Vertex AI Experiments.

pen_spark
exclamation Additionally, assign_input_artifact isn't the correct method for logging time series data

upvoted 2 times

gscharly 6 months ago

Selected Answer: C

log_time_series_metrics requires setting Tensorboard: https://cloud.google.com/vertex-ai/docs/experiments/log-data

assign_input_artifacts can be used to track input data: https://github.com/GoogleCloudPlatform/vertex-ai-samples/blob/main/notebooks/official/experiments/get_started_with_vertex_experiments.ipynb

upvoted 4 times

omermahgoub 6 months, 1 week ago

Selected Answer: B

Why B?
1. Experiment Creation: Vertex AI SDK establishes a context for grouping your training runs and facilitates experiment management.
2. By setting up Vertex ML Metadata (only can be done when creating an experiment with the Vertex AI SDK), you enable tracking of artifacts and metrics associated with each experiment run.
3. log_time_series_metrics function is well-suited for tracking the preprocessed multivariate time series data associated with each experiment run. This allows you to analyze how preprocessing impacts model performance.

upvoted 2 times

Yan_X 6 months, 3 weeks ago

Selected Answer: B

B
The assign_input_artifacts method is used to associate input artifacts with an experiment, that is not used for log time series and labels.
A and B is just with a minor typo (metric vs merric), so select B.

upvoted 2 times

guilhermebutzke 8 months, 1 week ago

Selected Answer: C

My Answer: C

assign_input_artifact method is a method to Vertex Ai Experiment to track the preprocessed data while log_time_series_metrics is a function of Vertex AI TensorBoard to log metrics along time.

look:

https://github.com/GoogleCloudPlatform/vertex-ai-samples/blob/main/notebooks/official/experiments/build_model_experimentation_lineage_with_prebuild_code.ipynb

https://github.com/GoogleCloudPlatform/vertex-ai-samples/blob/main/notebooks/official/experiments/comparing_local_trained_models.ipynb

upvoted 1 times

b1a8fae 9 months ago

Selected Answer: C

C.
Tensorboard for experimentation and comparison of different model runs.
assign_input_artifacts to track preprocessed data, since it links artifacts as inputs to the execution.
https://cloud.google.com/python/docs/reference/aiplatform/latest/google.cloud.aiplatform.Execution#google_cloud_aiplatform_Execution_assign_input_artifacts
Using log_time_series_metrics would make sense if what we were doing is logging a metric, which we aren't when we track the preprocessed data not yet ran by the model.

upvoted 2 times

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