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Exam Professional Machine Learning Engineer All Questions

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EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 236 DISCUSSI...

Actual exam question from Google's Professional Machine Learning Engineer

Question #: 236

Topic #: 1

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You work for a large retailer, and you need to build a model to predict customer churn. The company has a dataset of historical customer data, including customer demographics purchase history, and website activity. You need to create the model in BigQuery ML and thoroughly evaluate its performance. What should you do?

- A. Create a linear regression model in BigQuery ML, and register the model in Vertex AI Model Registry. Evaluate the model performance in Vertex AI .
- B. Create a logistic regression model in BigQuery ML and register the model in Vertex AI Model Registry. Evaluate the model performance in Vertex AI .
- C. Create a linear regression model in BigQuery ML. Use the ML.EVALUATE function to evaluate the model performance.
- D. Create a logistic regression model in BigQuery ML. Use the ML.CONFUSION_MATRIX function to evaluate the model performance.

Show Suggested Answer

by [pikachu007](#) at Jan. 13, 2024, 8:20 a.m.

Comments

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🗨️ **Dirtie_Sinkie** 1 month ago

Selected Answer: B

B is the definitive answer. By breaking down the question we know it is a classification problem, so A and C are wrong since they're linear regression.

Using confusion matrix to evaluate the model is not wrong (actually it's even the textbook answer to do it), but it is not enough if you want to thoroughly evaluate its performance. Hence the best way to do it is with Vertex AI.

👍 🔄 🚩 upvoted 1 times

🗨️ **gscharly** 6 months ago

Selected Answer: B

logistic since it's classification, and Vertex AI because we need to "thoroughly evaluate its performance"

👍 🔄 🚩 upvoted 3 times

🗨️ **fitri001** 6 months, 1 week ago

Selected Answer: B

Logistic Regression: While linear regression (option C) can be used for continuous prediction tasks, customer churn is a binary classification problem (churned/not churned). Logistic regression is a better fit for this scenario.

Vertex AI Model Registry: Registering the model in Vertex AI Model Registry provides a centralized location for model management, versioning, and potentially future deployment to other Vertex AI services.

Vertex AI Evaluation: Vertex AI offers more comprehensive evaluation tools than BigQuery ML's ML.EVALUATE function (option C) or ML.CONFUSION_MATRIX function (option D). Vertex AI can provide metrics like accuracy, ROC-AUC, precision, and recall, which are crucial for churn prediction evaluation.

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🗨️ **guilhermebutzke** 8 months, 1 week ago

Selected Answer: B

My Answer: B

predict customer churn, which is a binary classification problem (whether a customer will churn or not). And, the phrase "thoroughly evaluate its performance" does suggest a more comprehensive approach, and in that sense, option B could be seen as a better answer than D.

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🗨️ **guilhermebutzke** 8 months, 1 week ago

My Answer: B

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🗨️ **BlehMaks** 9 months, 1 week ago

Selected Answer: B

B because Vertex AI provides us with more functions to evaluate model performance than just CONFUSION_MATRIX https://cloud.google.com/vertex-ai/docs/evaluation/introduction#classification_1

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🗨️ **b1a8fae** 9 months, 1 week ago

Selected Answer: B

B.

Linear regression because customer churn is a number of customers (not just 1/0). The key here imo is "thoroughly evaluate performance", which Vertex AI seems to be better suited for than BQ (including the possibility of tracking experiment lineage, inspecting parameter selection of each run, etc)

👍 🔄 🚩 upvoted 4 times

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

Selected Answer: D

Customer churn prediction involves a binary classification task (whether a customer will churn or not). Logistic regression is specifically designed for this type of problem, making it the appropriate model.

BigQuery ML allows building and training logistic regression models directly within BigQuery, leveraging its scalability and SQL-like syntax for model development.

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