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Exam Professional Machine Learning Engineer All Questions

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EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 88 DISCUSSIO..

Actual exam question from Google's Professional Machine Learning Engineer

Question #: 88

Topic #: 1

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You are an ML engineer at a bank. You have developed a binary classification model using AutoML Tables to predict whether a customer will make loan payments on time. The output is used to approve or reject loan requests. One customer's loan request has been rejected by your model, and the bank's risks department is asking you to provide the reasons that contributed to the model's decision. What should you do?

- A. Use local feature importance from the predictions.
- B. Use the correlation with target values in the data summary page.
- C. Use the feature importance percentages in the model evaluation page.
- D. Vary features independently to identify the threshold per feature that changes the classification.

Show Suggested Answer

by [ares81](#) at Dec. 12, 2022, 8:58 a.m.

Comments

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 **shankalman717** Highly Voted 1 year, 8 months ago

Selected Answer: A

To access local feature importance in AutoML Tables, you can use the "Explain" feature, which shows the contribution of each feature to the prediction for a specific example. This will help you identify the most important features that contributed to the loan request being rejected.

Option B, using the correlation with target values in the data summary page, may not provide the most accurate explanation as it looks at the overall correlation between the features and target variable, rather than the contribution of each feature to a specific prediction.

Option C, using the feature importance percentages in the model evaluation page, may not provide a sufficient explanation for the specific prediction, as it shows the importance of each feature across all predictions, rather than for a specific prediction.

Option D, varying features independently to identify the threshold per feature that changes the classification, is not recommended as it can be time-consuming and does not provide a clear explanation for why the loan request was rejected

   upvoted 10 times

 **M25** Most Recent 1 year, 6 months ago

Selected Answer: A

Went with A

   upvoted 1 times

 **JamesDoe** 1 year, 7 months ago

Selected Answer: A

Local, not global since they asked about one specific prediction.

Check out that section on this blog: <https://cloud.google.com/blog/products/ai-machine-learning/explaining-model-predictions-structured-data/>

Cool stuff!

   upvoted 4 times

 **tavva_prudhvi** 1 year, 7 months ago

Local feature importance can provide insight into the specific features that contributed to the model's decision for a particular instance. This information can be used to explain the model's decision to the bank's risks department and potentially identify any issues or biases in the model. Option B is not applicable as the loan request has already been rejected by the model, so there are no target values to correlate with. Option C may provide some insights, but local feature importance will provide more specific information for this particular instance. Option D involves changing the features, which may not be feasible or ethical in this case.

   upvoted 2 times

 **Yajnas_arpohc** 1 year, 7 months ago

C seems more apt & exhaustive to explain for bank's purpose; it uses various Feature Attribution methods.

A explains how much each feature added to or subtracted from the result as compared with the baseline prediction score; indicative, but less optimal for the purpose at hand

   upvoted 1 times

 **enghabeth** 1 year, 9 months ago

Selected Answer: A

it's think is more easy to explain with feature importance

   upvoted 2 times

 **ares81** 1 year, 10 months ago

Selected Answer: C

AutoML Tables tells you how much each feature impacts this model. It is shown in the Feature importance graph. The values are provided as a percentage for each feature: the higher the percentage, the more strongly that feature impacted model training. C.

   upvoted 1 times


 **hiromi** 1 year, 10 months ago

Selected Answer: A

A

<https://cloud.google.com/automl-tables/docs/explain#local>

   upvoted 2 times

 **mil_spyro** 1 year, 10 months ago

Selected Answer: A



Agree with A.

"Local feature importance gives you visibility into how the individual features in a specific prediction request affected the resulting prediction.

Each local feature importance value shows only how much the feature affected the prediction for that row. To understand the overall behavior of the model, use model feature importance."

<https://cloud.google.com/automl-tables/docs/explain#local>

   upvoted 4 times

  **ares81** 1 year, 10 months ago

Selected Answer: C



"Feature importance: AutoML Tables tells you how much each feature impacts this model. It is shown in the Feature importance graph. The values are provided as a percentage for each feature: the higher the percentage, the more strongly that feature impacted model training." The correct answer is C.

   upvoted 1 times

  **tavva_prudhvi** 1 year, 7 months ago

Can you tell the feature importance for a specific prediction?



   upvoted 2 times

  **YangG** 1 year, 10 months ago

Selected Answer: A

Should be A. it is specific to this example. so use local feature importance

   upvoted 2 times

  **ares81** 1 year, 10 months ago

It seems C, to me.

   upvoted 1 times

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