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Exam Professional Machine Learning Engineer All Questions
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📄 **EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 91 DISCUSSIO..**

Actual exam question from Google's Professional Machine Learning Engineer
Question #: 91
Topic #: 1
[All Professional Machine Learning Engineer Questions]

You work on the data science team for a multinational beverage company. You need to develop an ML model to predict the company's profitability for a new line of naturally flavored bottled waters in different locations. You are provided with historical data that includes product types, product sales volumes, expenses, and profits for all regions. What should you use as the input and output for your model?

A. Use latitude, longitude, and product type as features. Use profit as model output.

B. Use latitude, longitude, and product type as features. Use revenue and expenses as model outputs.

C. Use product type and the feature cross of latitude with longitude, followed by binning, as features. Use profit as model output.

D. Use product type and the feature cross of latitude with longitude, followed by binning, as features. Use revenue and expenses as model outputs.

Show Suggested Answer

by 👤 ares81 at *Dec. 14, 2022, 1:39 p.m.*

Comments

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⊟ 👤 **hiromi** `Highly Voted 👍` 1 year, 10 months ago

`Selected Answer: C`

C (not sure)
- https://developers.google.com/machine-learning/crash-course/feature-crosses/video-lecture
- https://developers.google.com/machine-learning/crash-course/regularization-for-sparsity/l1-regularization

👍 ↩ 🚩 upvoted 7 times

⊟ 👤 **sonicclasps** `Most Recent ⊙` 9 months, 1 week ago

`Selected Answer: D`

the question asks to predict profitability , not profit.
profitability is calculated from revenue and expenses.
the correct answer is D

👍 ↩ 🚩 upvoted 2 times

⊟ 👤 **andresvelasco** 1 year, 1 month ago

Most people have chosen C but:
Does it make sense to do binning after feature cross? Isnt it the other way around?

👍 ↩ 🚩 upvoted 2 times

⊟ 👤 **maukaba** 1 year ago

I agree it is the way around. See example:
https://developers.google.com/machine-learning/crash-course/feature-crosses/check-your-understanding
One feature cross: [binned latitude X binned longitude X binned roomsPerPerson]

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **maukaba** 1 year ago

In the following examples it is said that it is not possible to cross lat & lon without bucketized them before since continous values must be converted into discrete before crossing :
https://www.kaggle.com/code/vikramtiwari/feature-crosses-tensorflow-mlcc

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **M25** 1 year, 6 months ago

`Selected Answer: C`

Went with C

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **tavva_prudhvi** 1 year, 7 months ago

`Selected Answer: C`

Option C is the best option because it takes into account both the product type and location, which can affect profitability. Binning the feature cross of latitude and longitude can help capture the nonlinear relationship between location and profitability, and using profit as the model output is appropriate because it's the target variable we want to predict.

👍 ↩ 🚩 upvoted 3 times

⊟ 👤 **abneural** 1 year, 8 months ago

`Selected Answer: C`

Agreeing with hiromi, taxberg
Feature cross and bucket lat and lon on geographical problems

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **enghabeth** 1 year, 9 months ago

`Selected Answer: C`

your output is profit

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **taxberg** 1 year, 9 months ago

`Selected Answer: C`

Must be C. Always feature cross lat and lon on geographical problems. Also, D can not be right as we do not have revenue in the dataset.

👍 ↩ 🚩 upvoted 2 times

⊟ 👤 **mil_spyro** 1 year, 10 months ago

`Selected Answer: A`

In this case, there is no need to reduce the number of unique values in the latitude and longitude variables, and binning would reduce information from those features hence A

👍 ↩ 🚩 upvoted 2 times

hiromi 1 year, 10 months ago

Why no need to reduce?

upvoted 1 times

mil_spyro 1 year, 10 months ago

binding and crossing*

upvoted 1 times

ares81 1 year, 10 months ago

Selected Answer: C

Easy C.

upvoted 2 times

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