EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 94 DISCUSSIO..

Actual exam question from Google's Professional Machine Learning Engineer
Question #: 94
Topic #: 1
[All Professional Machine Learning Engineer Questions]

You work on an operations team at an international company that manages a large fleet of on-premises servers located in few data centers around the world. Your team collects monitoring data from the servers, including CPU/memory consumption. When an incident occurs on a server, your team is responsible for fixing it. Incident data has not been properly labeled yet. Your management team wants you to build a predictive maintenance solution that uses monitoring data from the VMs to detect potential failures and then alerts the service desk team. What should you do first?

A. Train a time-series model to predict the machines' performance values. Configure an alert if a machine's actual performance values significantly differ from the predicted performance values.

B. Implement a simple heuristic (e.g., based on z-score) to label the machines' historical performance data. Train a model to predict anomalies based on this labeled dataset.

C. Develop a simple heuristic (e.g., based on z-score) to label the machines' historical performance data. Test this heuristic in a production environment.

D. Hire a team of qualified analysts to review and label the machines' historical performance data. Train a model based on this manually labeled dataset.

Show Suggested Answer

by ares81 at *Dec. 14, 2022, 2:36 p.m.*

Comments

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mil_spyro Highly Voted 1 year, 10 months ago

Selected Answer: C

I would go for C, it is important to have a clear understanding of what constitutes a potential failure and how to detect it. A heuristic based on z-scores, for example, can be used to flag instances where the performance values of a machine significantly differ from its historical baseline.

upvoted 9 times

pico Most Recent 1 year, 1 month ago

Selected Answer: B

NOT C: when you have tested something directly in production??

Option B involves labeling historical data using heuristics, which can be a practical and quick way to get started.

upvoted 3 times

razmik 1 year, 4 months ago

Selected Answer: C

Vote for C
Reference: Rule #1: Don't be afraid to launch a product without machine learning.
https://developers.google.com/machine-learning/guides/rules-of-ml#before_machine_learning

upvoted 1 times

julliet 1 year, 4 months ago

Selected Answer: C

simple solution goes first, more sophisticated one -- after

upvoted 2 times

M25 1 year, 6 months ago

Selected Answer: C

Went with C

upvoted 2 times

TNT87 1 year, 6 months ago

Answer C
Same as Question number 139

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studybrew 1 year, 7 months ago

What's the difference between B and C?

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julliet 1 year, 5 months ago

in B you are labeling with heuristics and still develop a model
in C you follow the ML-rules to adopt simple solution first and later decide if, how and where you need more sophisticated model

upvoted 2 times

tavva_prudhvi 1 year, 7 months ago

Selected Answer: C

This is the best option for this scenario because it's quick and inexpensive, and it can provide a baseline for labeling the historical performance data. Once we have labeled data, we can train a predictive maintenance model to detect potential failures and alert the service desk team.

upvoted 1 times

osaka_monkey 1 year, 7 months ago

why not D ?

upvoted 1 times

tavva_prudhvi 1 year, 7 months ago

While this approach may result in accurate labeling of the historical performance data, it can be time-consuming and expensive.

upvoted 1 times

John_Pongthorn 1 year, 9 months ago

Selected Answer: C

https://www.geeksforgeeks.org/z-score-for-outlier-detection-python/

upvoted 1 times

hiromi 1 year, 10 months ago

Selected Answer: B

I vote for B
- https://developers.google.com/machine-learning/guides/rules-of-ml

upvoted 3 times

hiromi 1 year, 10 months ago

Sorry, I think C is the answer

upvoted 4 times

jamesking1103 1 year, 10 months ago

C.
we need detect potential failures

upvoted 1 times

guilhermebutzke 1 year, 8 months ago

Why not B? The team wants to create a model to predict failure. So, the z-score is used to label the failure scenario, for then to use this to build a prediction model.

upvoted 2 times

tavva_prudhvi 1 year, 7 months ago

While this approach may work in some cases, it's not guaranteed to work well in this scenario because we don't know the nature of the anomalies that we want to detect. Therefore, it may be difficult to come up with a heuristic that can accurately label the historical performance data.

upvoted 2 times

evanfebrianto 1 year, 5 months ago

But testing the heuristic in a production environment without training a model could be risky and lead to false alarms or misses.

upvoted 1 times

ares81 1 year, 10 months ago

Selected Answer: A

This is really tricky, but it could be A.

upvoted 2 times

ares81 1 year, 10 months ago

Thinking about it, it should be C.

upvoted 1 times

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