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Exam Professional Machine Learning Engineer All Questions

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EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 2 DISCUSSION

Actual exam question from Google's Professional Machine Learning Engineer

Question #: 2

Topic #: 1

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Your organization wants to make its internal shuttle service route more efficient. The shuttles currently stop at all pick-up points across the city every 30 minutes between 7 am and 10 am. The development team has already built an application on Google Kubernetes Engine that requires users to confirm their presence and shuttle station one day in advance. What approach should you take?

- A. 1. Build a tree-based regression model that predicts how many passengers will be picked up at each shuttle station. 2. Dispatch an appropriately sized shuttle and provide the map with the required stops based on the prediction.
- B. 1. Build a tree-based classification model that predicts whether the shuttle should pick up passengers at each shuttle station. 2. Dispatch an available shuttle and provide the map with the required stops based on the prediction.
- C. 1. Define the optimal route as the shortest route that passes by all shuttle stations with confirmed attendance at the given time under capacity constraints. 2. Dispatch an appropriately sized shuttle and indicate the required stops on the map.
- D. 1. Build a reinforcement learning model with tree-based classification models that predict the presence of passengers at shuttle stops as agents and a reward function around a distance-based metric. 2. Dispatch an appropriately sized shuttle and provide the map with the required stops based on the simulated outcome.

Show Suggested Answer

by [nissili](#) at June 20, 2021, 5:17 p.m.

Comments

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  **nissili** Highly Voted  3 years, 4 months ago

C: for all confirmed.

   upvoted 24 times

  **sensev** 1 month ago

I agree with this, because it mentioned that they now "require users to confirm their presence". I think this is an example of when a classical routing algorithm is a better fit compare to ML-approach.

   upvoted 13 times

  **baimus** Most Recent  1 month ago

Answer is C. This is a case where machine learning would be terrible, as it would not be 100% accurate and some passengers would not get picked up. A simple algorithm works better here, and the question confirms customers will be indicating when they are at the stop so no ML required.

   upvoted 3 times

  **PhilipKoku** 4 months, 2 weeks ago

Selected Answer: C

C is the option that covers the scenario.

   upvoted 1 times

  **fragkris** 10 months, 3 weeks ago

Selected Answer: C

C - Since we have the attendance list in advance. Tree-based classification, regression and reinforced learning sounds useless in this case.

   upvoted 3 times

  **Sum_Sum** 11 months, 1 week ago

Selected Answer: C

you do not need to predict how many people will be at each station as the requirement mentions they have to register a day in advance

   upvoted 1 times

  **M25** 1 year, 5 months ago

Selected Answer: C

Went with C

   upvoted 1 times

  **n_shanthi** 1 year, 6 months ago

I think it should be C. I can easily eliminate D, this is not a case for reinforcement learning. Moreover, it seems like a Route Optimization rather than finding out best sized shuttle as mentioned in A or whether the shuttle should stop at a point as per point B.

   upvoted 1 times

  **asava** 1 year, 7 months ago

Selected Answer: C

This is a route optimization problem



   upvoted 1 times

  **EFIGO** 1 year, 11 months ago

Selected Answer: C

No need to predict the presences since they are already confirmed, best thing we can do is optimize the route

   upvoted 3 times

  **abhi0706** 1 year, 11 months ago

C. route more efficient is an optimization model

   upvoted 1 times

  **GCP72** 2 years, 2 months ago

Selected Answer: C

C is looks correct for me

   upvoted 1 times

  **Dr_Ethan** 2 years, 2 months ago

Confirmed C

   upvoted 1 times

  **enghabeth** 2 years, 2 months ago

Selected Answer: C

C. route more efficient is an optimization model

   upvoted 2 times

  **David_ml** 2 years, 5 months ago

Selected Answer: C

Answer is C

   upvoted 1 times

  **David_ml** 2 years, 6 months ago

Selected Answer: C

correct answer is C

   upvoted 1 times

  **giaZ** 2 years, 7 months ago

C. Why would you want to predict anything here? The info on how many passengers will be and at which stations are already given by passengers themselves.

   upvoted 1 times

  **sid515** 2 years, 9 months ago

Selected Answer: C

It needs to be C. No use of ML here

   upvoted 1 times

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