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Exam Professional Machine Learning Engineer All Questions

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EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 114 DISCUSSI...

Actual exam question from Google's Professional Machine Learning Engineer

Question #: 114

Topic #: 1

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You work for a gaming company that manages a popular online multiplayer game where teams with 6 players play against each other in 5-minute battles. There are many new players every day. You need to build a model that automatically assigns available players to teams in real time. User research indicates that the game is more enjoyable when battles have players with similar skill levels. Which business metrics should you track to measure your model's performance?

- A. Average time players wait before being assigned to a team
- B. Precision and recall of assigning players to teams based on their predicted versus actual ability
- C. User engagement as measured by the number of battles played daily per user
- D. Rate of return as measured by additional revenue generated minus the cost of developing a new model




Show Suggested Answer

by  pshemol at Dec. 20, 2022, 8:50 p.m.

Comments

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  **pshemol** Highly Voted  1 year, 10 months ago

Selected Answer: C

The game is more enjoyable - the better and "business metrics" points me to user engagement as best metric



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  **baimus** Most Recent  1 month, 1 week ago

Selected Answer: C

This question doesn't specify how "additional revenue" is measured. Most businesses I've worked for would love "D" for all our models instead of anything else. That being said, C is the only measurable business metric there.



   upvoted 1 times

  **fitri001** 5 months, 4 weeks ago

Selected Answer: C

focusing on user engagement through the number of battles played daily provides a clearer indication of whether the model successfully creates balanced and enjoyable matches, which is the core objective. If players find battles more engaging due to fairer competition, they're more likely to keep playing. This can then translate to long-term benefits like increased retention and potential monetization opportunities.

   upvoted 1 times

  **fitri001** 5 months, 4 weeks ago

A. Average time players wait before being assigned to a team: While faster matchmaking is desirable, it shouldn't come at the expense of balanced teams. If wait times are very low but battles are imbalanced due to poor matchmaking, user engagement might suffer.

B. Precision and recall of assigning players to skill level: These metrics are valuable for evaluating the model's ability to predict skill accurately. However, they don't directly measure the impact on user experience and enjoyment.

D. Rate of return: This metric focuses on financial gain, which might not be the primary objective in this case. Prioritizing balanced teams for a more enjoyable experience can indirectly lead to higher user retention and potentially more revenue in the long run.

   upvoted 1 times

  **edoo** 7 months, 2 weeks ago

Selected Answer: C

Tempted by B but "user engagement" is the keyword.

   upvoted 2 times

  **edoo** 7 months, 2 weeks ago

I meant "business metric".

   upvoted 2 times

  **guilhermebutzke** 9 months ago

Selected Answer: C

Looking for "business metrics to track," I think C could be the most important metric. Although, option B is also a good choice.

   upvoted 2 times

  **MCorsetti** 1 year ago

Selected Answer: C

C: Business metric i.e. outcome driven



   upvoted 1 times

  **tavva_prudhvi** 1 year, 2 months ago

"Business metrics" does suggest that the question is looking for metrics that are relevant to the business goals of the company, rather than purely technical metrics. In that case, C could be a good choice. User engagement is an important metric for any online service, as it reflects how much users are enjoying and using the product. In the context of a multiplayer game, the number of battles played daily per user can indicate how well the model is doing in creating balanced teams that are enjoyable to play against. If the model is successful in creating balanced teams, then users are likely to play more games, which would increase user engagement.

Therefore, C could be a suitable choice to track the performance of the model.

   upvoted 3 times

  **Nxtgen** 1 year, 3 months ago

Selected Answer: C

The focus is to obtain a model that assigns players to teams with players with similar level of skill (or average team 1 skill == average team 2 skill)

A: A fast queue assignment may not focus on pairing players with the same levels of skills. A random assignment would work.

B: This would be an option but is more difficult to measure than C, we don't know if we have a measure of skill level. Also, for new players this metric would not be available at the beginning. I think "There are many new players every day." is a key point important to discard answer B.

C: Players play more games daily ← players enjoy the game more frequently and the other way round should also apply. Easy to measure also for new players.

D: This focus on costs and revenue not on players matchmaking.

I would go with C.

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🗨️ 👤 **Antmal** 1 year, 5 months ago

Selected Answer: C

C because "user engagement" is a business metric <https://support.google.com/analytics/answer/11109416?hl=en>

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🗨️ 👤 **M25** 1 year, 5 months ago

Selected Answer: C

Went with C

👍 🔄 🚩 upvoted 1 times

🗨️ 👤 **[Removed]** 1 year, 6 months ago

Selected Answer: B

This is B, as it directly relates to our model's ability to predict player ability. There are many factors beyond our model which will impact user engagement (e.g. whether the game is actually enjoyable) so it's not a good measurement of the model performance

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🗨️ 👤 **TNT87** 1 year, 6 months ago

Selected Answer: C

Answer C

👍 🔄 🚩 upvoted 1 times

🗨️ 👤 **PHD_CHENG** 1 year, 6 months ago

Selected Answer: C

The question is asking about "available players". Therefore, the business metric is the user engagement.

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🗨️ 👤 **JamesDoe** 1 year, 6 months ago

Selected Answer: C

Asks for >business metric<, and problem states "user research indicates that the game is more enjoyable when battles have players with similar skill levels.", which means more battles per user if your model is performing well.

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🗨️ 👤 **dfdrrin** 1 year, 7 months ago

Selected Answer: C

It's C. The question specifically asks for a business metric. Precision and recall are not business metrics, but user engagement is

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🗨️ 👤 **guilhermebutzke** 1 year, 7 months ago

Selected Answer: B

The template uses the 'ability' to create teams. For this, we can conclude that the system measures the player's skill. So, nothing better than comparing the predict ability with the actual ability to understand the performance of the model.

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🗨️ 👤 **TNT87** 1 year, 7 months ago

Selected Answer: B


A. Average time players wait before being assigned to a team

B. Precision and recall of assigning players to teams based on their predicted versus actual ability

These two metrics are the most relevant for measuring the performance of the model in assigning players to teams based on skill level. The average wait time can indicate whether the model is making efficient and quick team assignments, while precision and recall can measure the accuracy of the model's predictions. It's important to balance precision and recall since assigning players to a team with a large difference in skill level could have a negative impact on the players' gaming experience.

C and D are also important metrics to track, but they may not be as directly tied to the performance of the team assignment model. User engagement can indicate the success of the overall gaming experience, but it can be influenced by other factors beyond team assignments. The rate of return is also an important metric, but it may not be a direct measure of the success of the team assignment model.

   upvoted 4 times

  **TNT87** 1 year, 6 months ago

Answer C , user engagement

   upvoted 2 times

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