



**Free Questions for Professional-Machine-Learning-Engineer  
by certsdeals**

**Shared by Daniel on 18-01-2024**

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## Question 1

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### Question Type: MultipleChoice

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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?

#### Options:

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- 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

#### Answer:

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C

## Question 2

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**Question Type: MultipleChoice**

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You started working on a classification problem with time series data and achieved an area under the receiver operating characteristic curve (AUC ROC) value of 99% for training data after just a few experiments. You haven't explored using any sophisticated algorithms or spent any time on hyperparameter tuning. What should your next step be to identify and fix the problem?

**Options:**

---

- A) Address the model overfitting by using a less complex algorithm.
- B) Address data leakage by applying nested cross-validation during model training.
- C) Address data leakage by removing features highly correlated with the target value.
- D) Address the model overfitting by tuning the hyperparameters to reduce the AUC ROC value.

**Answer:**

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B

**Explanation:**

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<https://towardsdatascience.com/time-series-nested-cross-validation-76adba623eb9>

## Question 3

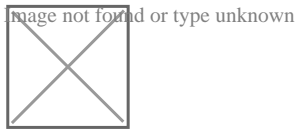
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### Question Type: MultipleChoice

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You are designing an architecture with a serverless ML system to enrich customer support tickets with informative metadata before they are routed to a support agent. You need a set of models to predict ticket priority, predict ticket resolution time, and perform sentiment analysis to help agents make strategic decisions when they process support requests. Tickets are not expected to have any domain-specific terms or jargon.

The proposed architecture has the following flow:



Which endpoints should the Enrichment Cloud Functions call?

### Options:

---

- A) 1 = AI Platform, 2 = AI Platform, 3 = AutoML Vision
- B) 1 = AI Platform, 2 = AI Platform, 3 = AutoML Natural Language
- C) 1 = AI Platform, 2 = AI Platform, 3 = Cloud Natural Language API

D) 1 = cloud Natural Language API, 2 = AI Platform, 3 = Cloud Vision API

### Answer:

---

C

### Explanation:

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<https://cloud.google.com/architecture/architecture-of-a-serverless-ml-model#architecture>

The architecture has the following flow:

A user writes a ticket to Firebase, which triggers a Cloud Function.

-The Cloud Function calls 3 different endpoints to enrich the ticket:

-An AI Platform endpoint, where the function can predict the priority.

-An AI Platform endpoint, where the function can predict the resolution time.

-The Natural Language API to do sentiment analysis and word salience.

-For each reply, the Cloud Function updates the Firebase real-time database.

-The Cloud Function then creates a ticket into the helpdesk platform using the RESTful API.

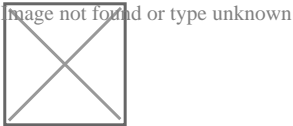
# Question 4

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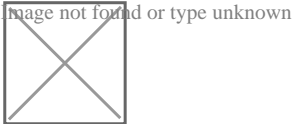
**Question Type: MultipleChoice**

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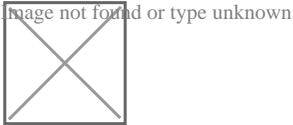
Your team is working on an NLP research project to predict political affiliation of authors based on articles they have written. You have a large training dataset that is structured like this:



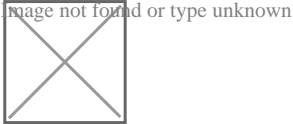
A)



B)



C)



D)

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### Options:

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- A) Option A
- B) Option B
- C) Option C
- D) Option D

### Answer:

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B

### Explanation:

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If we just put inside the Training set , Validation set and Test set , randomly Text, Paragraph or sentences the model will have the ability to learn specific qualities about The Author's use of language beyond just his own articles. Therefore the model will mixed up different opinions. Rather if we divided things up a the author level, so that given authors were only on the training data, or only in the test data or only in the validation data. The model will find more difficult to get a high accuracy on the test validation (What is correct and have more

sense!). Because it will need to really focus in author by author articles rather than get a single political affiliation based on a bunch of mixed articles from different authors. <https://developers.google.com/machine-learning/crash-course/18th-century-literature>

For example, suppose you are training a model with purchase data from a number of stores. You know, however, that the model will be used primarily to make predictions for stores that are not in the training data. To ensure that the model can generalize to unseen stores, you should segregate your data sets by stores. In other words, your test set should include only stores different from the evaluation set, and the evaluation set should include only stores different from the training set. <https://cloud.google.com/automl-tables/docs/prepare#ml-use>

## Question 5

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**Options:**

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- B) Address data leakage by applying nested cross-validation during model training.
- C) Address data leakage by removing features highly correlated with the target value.
- D) Address the model overfitting by tuning the hyperparameters to reduce the AUC ROC value.

**Answer:**

---

B

**Explanation:**

---

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## Question 6

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**Question Type: MultipleChoice**

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Your team is working on an NLP research project to predict political affiliation of authors based on articles they have written. You have a large training dataset that is structured like this:

Image not found or type unknown



A)

Image not found or type unknown



B)

Image not found or type unknown



C)

Image not found or type unknown



D)

Image not found or type unknown



**Options:**

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**A)** Option A

- B) Option B
- C) Option C
- D) Option D

**Answer:**

---

B

**Explanation:**

---

If we just put inside the Training set , Validation set and Test set , randomly Text, Paragraph or sentences the model will have the ability to learn specific qualities about The Author's use of language beyond just his own articles. Therefore the model will mixed up different opinions. Rather if we divided things up a the author level, so that given authors were only on the training data, or only in the test data or only in the validation data. The model will find more difficult to get a high accuracy on the test validation (What is correct and have more sense!). Because it will need to really focus in author by author articles rather than get a single political affiliation based on a bunch of mixed articles from different authors. <https://developers.google.com/machine-learning/crash-course/18th-century-literature>

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## Question 7

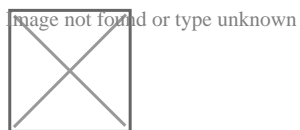
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