



Microsoft

AI-900 Exam
Azure AI Fundamentals

Questions & Answers

(Demo Version - Limited Content)

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Version: 5.0

Question: 1

A company employs a team of customer service agents to provide telephone and email support to customers.

The company develops a webchat bot to provide automated answers to common customer queries. Which business benefit should the company expect as a result of creating the webchat bot solution?

- A. increased sales
- B. a reduced workload for the customer service agents
- C. improved product reliability

Answer: B

Question: 2

For a machine learning process, how should you split data for training and evaluation?

- A. Use features for training and labels for evaluation.
- B. Randomly split the data into rows for training and rows for evaluation.
- C. Use labels for training and features for evaluation.
- D. Randomly split the data into columns for training and columns for evaluation.

Answer: D

In Azure Machine Learning, the percentage split is the available technique to split the data. In this technique, random data of a given percentage will be split to train and test data.

Reference:

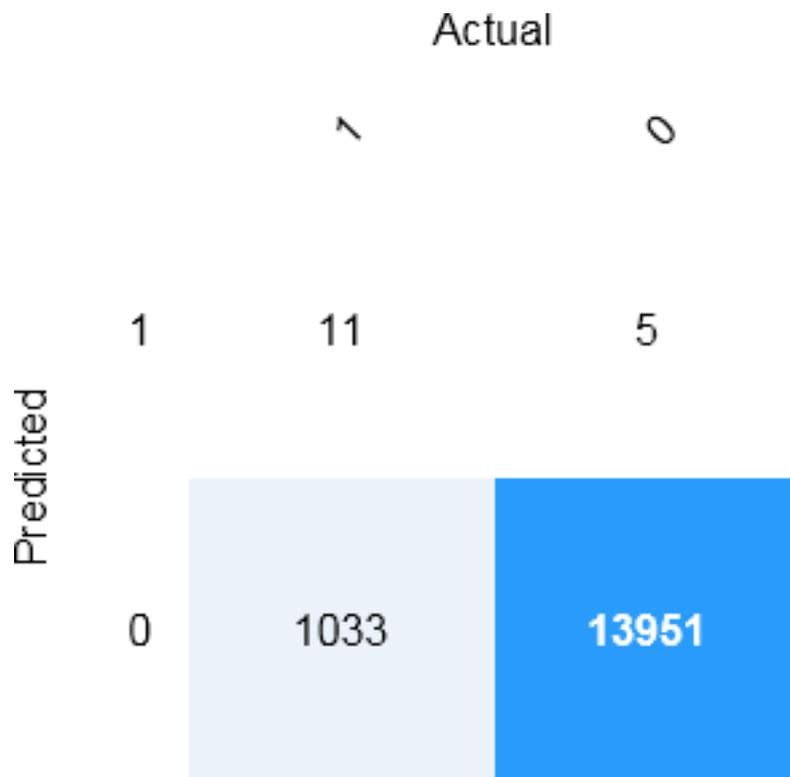
<https://www.sqlshack.com/prediction-in-azure-machine-learning/>

Question: 3

HOTSPOT

You are developing a model to predict events by using classification.

You have a confusion matrix for the model scored on test data as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

There are **[answer choice]** correctly predicted positives.

	▼
5	
11	
1,033	
13,951	

There are **[answer choice]** false negatives.

	▼
5	
11	
1,033	
13,951	

Answer:

Answer Area

There are **[answer choice]** correctly predicted positives.

- 5
- 11**
- 1,033
- 13,951

There are **[answer choice]** false negatives.

- 5
- 11
- 1,033**
- 13,951

Box 1: 11

	Predicted	
	Positive	Negative
Actual True	TP	FN
Actual False	FP	TN

TP = True Positive.

The class labels in the training set can take on only two possible values, which we usually refer to as positive or negative. The positive and negative instances that a classifier predicts correctly are called true positives (TP) and true negatives (TN), respectively. Similarly, the incorrectly classified instances are called false positives (FP) and false negatives (FN).

Box 2: 1,033

FN = False Negative

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio/evaluate-model-performance>

Question: 4

You build a machine learning model by using the automated machine learning user interface (UI). You need to ensure that the model meets the Microsoft transparency principle for responsible AI. What should you do?

- A. Set Validation type to Auto.
- B. Enable Explain best model.
- C. Set Primary metric to accuracy.
- D. Set Max concurrent iterations to 0.

Answer: B

Model Explain Ability.

Most businesses run on trust and being able to open the ML “black box” helps build transparency and trust. In heavily regulated industries like healthcare and banking, it is critical to comply with regulations and best practices. One key aspect of this is understanding the relationship between input variables (features) and model output. Knowing both the magnitude and direction of the impact each feature (feature importance) has on the predicted value helps better understand and explain the model. With model explain ability, we enable you to understand feature importance as part of automated ML runs.

Reference:

<https://azure.microsoft.com/en-us/blog/new-automated-machine-learning-capabilities-in-azure-machine-learning-service/>

Question: 5

HOTSPOT

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
Forecasting housing prices based on historical data is an example of anomaly detection.	<input type="radio"/>	<input type="radio"/>
Identifying suspicious sign-ins by looking for deviations from usual patterns is an example of anomaly detection.	<input type="radio"/>	<input type="radio"/>
Predicting whether a patient will develop diabetes based on the patient’s medical history is an example of anomaly detection.	<input type="radio"/>	<input type="radio"/>

Answer:

Answer Area

Statements	Yes	No
Forecasting housing prices based on historical data is an example of anomaly detection.	<input type="radio"/>	<input checked="" type="radio"/>
Identifying suspicious sign-ins by looking for deviations from usual patterns is an example of anomaly detection.	<input checked="" type="radio"/>	<input type="radio"/>
Predicting whether a patient will develop diabetes based on the patient's medical history is an example of anomaly detection.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: No

Box 2: Yes

Box 3: Yes

Anomaly detection encompasses many important tasks in machine learning:

Identifying transactions that are potentially fraudulent.

Learning patterns that indicate that a network intrusion has occurred.

Finding abnormal clusters of patients.

Checking values entered into a system.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/studio-module-reference/anomaly-detection>

Question: 6

To complete the sentence, select the appropriate option in the answer area.

Answer Area

The handling of unusual or missing values provided to an AI system is a consideration for the Microsoft principle for responsible AI.

- inclusiveness
- privacy and security
- reliability and safety
- transparency

Answer:

Answer Area

The handling of unusual or missing values provided to an AI system is a consideration for the Microsoft principle for responsible AI.

inclusiveness
▼

privacy and security

reliability and safety

transparency

Privacy and security.

As AI becomes more prevalent, protecting privacy and securing important personal and business information is becoming more critical and complex. With AI, privacy and data security issues require especially close attention because access to data is essential for AI systems to make accurate and informed predictions and decisions about people. AI systems must comply with privacy laws that require transparency about the collection, use, and storage of data and mandate that consumers have appropriate controls to choose how their data is used. At Microsoft, we are continuing to research privacy and security breakthroughs (see next unit) and invest in robust compliance processes to ensure that data collected and used by our AI systems is handled responsibly.

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question: 7

DRAG DROP

Match the types of AI workloads to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Workloads Types

- Anomaly detection
- Computer vision
- Conversational AI
- Knowledge mining
- Natural language processing

Answer Area

- Workload Type
An automated chat to answer questions about refunds and exchange
- Workload Type
Determining whether a photo contains a person
- Workload Type
Determining whether a review is positive or negative

Answer:

Answer Area

Conversational AI	An automated chat to answer questions about refunds and exchange
Computer vision	Determining whether a photo contains a person
Natural language processing	Determining whether a review is positive or negative

Box 3: Natural language processing

Natural language processing (NLP) is used for tasks such as sentiment analysis, topic detection, language detection, key phrase extraction, and document categorization.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/natural-language-processing>

Question: 8

You are designing an AI system that empowers everyone, including people who have hearing, visual, and other impairments.

This is an example of which Microsoft guiding principle for responsible AI?

- A. fairness
- B. inclusiveness
- C. reliability and safety
- D. accountability

Answer: B

Inclusiveness: At Microsoft, we firmly believe everyone should benefit from intelligent technology, meaning it must incorporate and address a broad range of human needs and experiences. For the 1 billion people with disabilities around the world, AI technologies can be a game-changer.

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question: 9

DRAGDROP

Match the Microsoft guiding principles for responsible AI to the appropriate descriptions.

To answer, drag the appropriate principle from the column on the left to its description on the right.

Each principle may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Principles

- Accountability
- Fairness
- Inclusiveness
- Privacy and security
- Reliability and safety

Answer Area

- Principle: Ensure that AI systems operate as they were originally designed, respond to unanticipated conditions, and resist harmful manipulation.
- Principle: Implementing processes to ensure that decisions made by AI systems can be overridden by humans.
- Principle: Provide consumers with information and controls over the collection, use, and storage of their data.

Answer:

Answer Area

- Reliability and safety: Ensure that AI systems operate as they were originally designed, respond to unanticipated conditions, and resist harmful manipulation.
- Fairness: Implementing processes to ensure that decisions made by AI systems can be overridden by humans.
- Privacy and security: Provide consumers with information and controls over the collection, use, and storage of their data.

Box 1: Reliability and safety

To build trust, it's critical that AI systems operate reliably, safely, and consistently under normal circumstances and in unexpected conditions. These systems should be able to operate as they were originally designed, respond safely to unanticipated conditions, and resist harmful manipulation.

Box 2: Fairness

Fairness: AI systems should treat everyone fairly and avoid affecting similarly situated groups of people in different ways. For example, when AI systems provide guidance on medical treatment, loan applications, or employment, they should make the same recommendations to everyone with similar symptoms, financial circumstances, or professional qualifications.

We believe that mitigating bias starts with people understanding the implications and limitations of AI predictions and recommendations. Ultimately, people should supplement AI decisions with sound human judgment and be held accountable for consequential decisions that affect others.

Box 3: Privacy and security

As AI becomes more prevalent, protecting privacy and securing important personal and business information is becoming more critical and complex. With AI, privacy and data security issues require especially close attention because access to data is essential for AI systems to make accurate and informed predictions and decisions about people. AI systems must comply with privacy laws that require transparency about the collection, use, and storage of data and mandate that consumers

have appropriate controls to choose how their data is used

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question: 10

To complete the sentence, select the appropriate option in the answer area.

When developing an AI system for self-driving cars, the Microsoft for responsible AI should be applied to ensure consistent operation system during unexpected circumstances.

principle of the

Answer:

When developing an AI system for self-driving cars, the Microsoft for responsible AI should be applied to ensure consistent operation system during unexpected circumstances.

principle of the

Reliability and safety: To build trust, it's critical that AI systems operate reliably, safely, and consistently under normal circumstances and in unexpected conditions. These systems should be able to operate as they were originally designed, respond safely to unanticipated conditions, and resist harmful manipulation.

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question: 11

You are building an AI system.

Which task should you include to ensure that the service meets the Microsoft transparency principle for responsible AI?

- A. Ensure that all visuals have an associated text that can be read by a screen reader.
- B. Enable autoscaling to ensure that a service scales based on demand.
- C. Provide documentation to help developers debug code.
- D. Ensure that a training dataset is representative of the population.

Answer: C

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question: 12

DROP

Match the types of AI workloads to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct selection is worth one point.

Workload Types

- Anomaly detection
- Computer vision
- Machine Learning (Regression)
- Natural language processing

Answer Area

- Workload Type Identify handwritten letters.
- Workload Type Predict the sentiment of a social media post.
- Workload Type Identify a fraudulent credit card payment.
- Workload Type Predict next month's toy sales.

Answer:

Workload Types

- Anomaly detection
- Computer vision
- Machine Learning (Regression)
- Natural language processing

Answer Area

- Computer vision Identify handwritten letters.
- Natural language processing Predict the sentiment of a social media post.
- Anomaly detection Identify a fraudulent credit card payment.
- Machine Learning (Regression) Predict next month's toy sales.

Reference:

<https://docs.microsoft.com/en-us/learn/paths/get-started-with-artificial-intelligence-on-azure/>

Question: 13

Your company is exploring the use of voice recognition technologies in its smart home devices. The company wants to identify any barriers that might unintentionally leave out specific user groups. This an example of which Microsoft guiding principle for responsible AI?

- A. accountability
- B. fairness
- C. inclusiveness
- D. privacy and security

Answer: C

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

Question: 14

What are three Microsoft guiding principles for responsible AI? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. knowledgeability
- B. decisiveness
- C. inclusiveness
- D. fairness
- E. opinionatedness
- F. reliability and safety

Answer: C,D,F

Reference:

<https://docs.microsoft.com/en-us/learn/modules/responsible-ai-principles/4-guiding-principles>

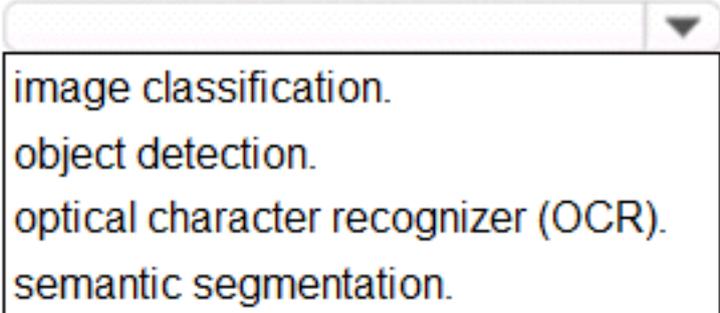
Question: 15

HOTSPOT

To complete the sentence, select the appropriate option in the answer area.

Answer Area

Returning a bounding box that indicates the location of a vehicle in an image is an example of

- 
- image classification.
 - object detection.
 - optical character recognizer (OCR).
 - semantic segmentation.

Answer:

Answer Area

Returning a bounding box that indicates the location of a vehicle in an image is an example of

- image classification.
- object detection.**
- optical character recognizer (OCR).
- semantic segmentation.

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/computer-vision/concept-object-detection>

Question: 16

To complete the sentence, select the appropriate option in the answer area.

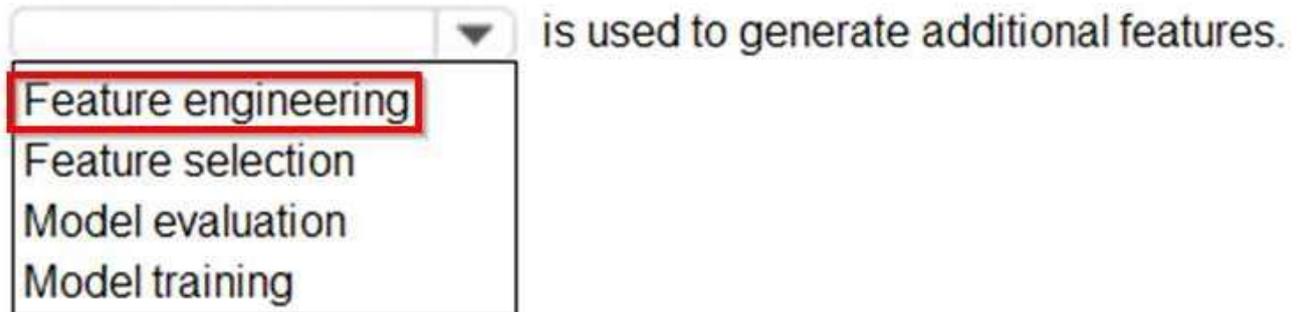
Answer Area

 is used to generate additional features.

- Feature engineering
- Feature selection
- Model evaluation
- Model training

Answer:

Answer Area



Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/team-data-science-process/create-features>

Question: 17

You run a charity event that involves posting photos of people wearing sunglasses on Twitter.

You need to ensure that you only retweet photos that meet the following requirements:

Include one or more faces.

Contain at least one person wearing sunglasses.

What should you use to analyze the images?

- A. the Verify operation in the Face service
- B. the Detect operation in the Face service
- C. the Describe Image operation in the Computer Vision service
- D. the Analyze Image operation in the Computer Vision service

Answer: B

Reference:

<https://docs.microsoft.com/en-us/azure/cognitive-services/face/overview>

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