

Valid CT-AI Vce Dumps, New CT-AI Exam Objectives



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New CT-AI Exam Objectives & Valid CT-AI Test Cram

We are committed to providing our customers with the most up-to-date and accurate Certified Tester AI Testing Exam (CT-AI) preparation material. That's why we offer free demos and up to 1 year of free ISTQB Dumps updates if the CT-AI certification exam content changes after purchasing our product. With these offers, our customers can be assured that they have the latest and most reliable prepare for your Certified Tester AI Testing Exam (CT-AI) preparation material.

ISTQB CT-AI Exam Syllabus Topics:

Topic	Details
Topic 1	<ul style="list-style-type: none">Using AI for Testing: In this section, the exam topics cover categorizing the AI technologies used in software testing.
Topic 2	<ul style="list-style-type: none">Introduction to AI: This exam section covers topics such as the AI effect and how it influences the definition of AI. It covers how to distinguish between narrow AI, general AI, and super AI; moreover, the topics covered include describing how standards apply to AI-based systems.
Topic 3	<ul style="list-style-type: none">Neural Networks and Testing: This section of the exam covers defining the structure and function of a neural network including a DNN and the different coverage measures for neural networks.

Topic 4	<ul style="list-style-type: none"> ML Functional Performance Metrics: In this section, the topics covered include how to calculate the ML functional performance metrics from a given set of confusion matrices.
Topic 5	<ul style="list-style-type: none"> Methods and Techniques for the Testing of AI-Based Systems: In this section, the focus is on explaining how the testing of ML systems can help prevent adversarial attacks and data poisoning.
Topic 6	<ul style="list-style-type: none"> ML: Data: This section of the exam covers explaining the activities and challenges related to data preparation. It also covers how to test datasets create an ML model and recognize how poor data quality can cause problems with the resultant ML model.
Topic 7	<ul style="list-style-type: none"> Quality Characteristics for AI-Based Systems: This section covers topics covered how to explain the importance of flexibility and adaptability as characteristics of AI-based systems and describes the vitality of managing evolution for AI-based systems. It also covers how to recall the characteristics that make it difficult to use AI-based systems in safety-related applications.
Topic 8	<ul style="list-style-type: none"> Testing AI-Based Systems Overview: In this section, focus is given to how system specifications for AI-based systems can create challenges in testing and explain automation bias and how this affects testing.
Topic 9	<ul style="list-style-type: none"> Machine Learning ML: This section includes the classification and regression as part of supervised learning, explaining the factors involved in the selection of ML algorithms, and demonstrating underfitting and overfitting.

ISTQB Certified Tester AI Testing Exam Sample Questions (Q90-Q95):

NEW QUESTION # 90

You have access to the training data that was used to train an AI-based system. You can review this information and use it as a guideline when creating your tests. What type of characteristic is this?

- A. Explorability
- B. Autonomy
- C. Transparency**
- D. Accessibility

Answer: C

Explanation:

The syllabus states:

"Transparency: This is considered to be the ease with which the algorithm and training data used to generate the model can be determined." Access to the training data is an example of transparency.

(Reference: ISTQB CT-AI Syllabus v1.0, Section 2.7, page 24 of 99)

NEW QUESTION # 91

Upon testing a model used to detect rotten tomatoes, the following data was observed by the test engineer, based on certain number of tomato images.

Confusion Matrix	Actually Rotten	Actually Fresh
Predicted Rotten	45	8
Predicted Fresh		42
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For this confusion matrix which combinations of values of accuracy, recall, and specificity respectively is CORRECT?

SELECT ONE OPTION

- A. 1,0.87,0.84
- B. 0.87,0.9, 0.84**
- C. 0.84,1,0.9
- D. 1,0.9, 0.8

Answer: B

Explanation:

To calculate the accuracy, recall, and specificity from the confusion matrix provided, we use the following formulas:

* Confusion Matrix:

- * Actually Rotten: 45 (True Positive), 8 (False Positive)
- * Actually Fresh: 5 (False Negative), 42 (True Negative)

* Accuracy:

* Accuracy is the proportion of true results (both true positives and true negatives) in the total population.

* Formula: $\text{Accuracy} = \frac{\text{TP} + \text{TN}}{\text{TP} + \text{TN} + \text{FP} + \text{FN}}$

* Calculation: $\text{Accuracy} = \frac{45 + 42}{45 + 42 + 8 + 5} = \frac{87}{100} = 0.87$

* Recall (Sensitivity):

* Recall is the proportion of true positive results in the total actual positives.

* Formula: $\text{Recall} = \frac{\text{TP}}{\text{TP} + \text{FN}}$

* Calculation: $\text{Recall} = \frac{45}{45 + 5} = \frac{45}{50} = 0.9$

* Specificity:

* Specificity is the proportion of true negative results in the total actual negatives.

* Formula: $\text{Specificity} = \frac{\text{TN}}{\text{TN} + \text{FP}}$

* Calculation: $\text{Specificity} = \frac{42}{42 + 8} = \frac{42}{50} = 0.84$

Therefore, the correct combinations of accuracy, recall, and specificity are 0.87, 0.9, and 0.84 respectively.

References:

ISTQB CT-AI Syllabus, Section 5.1, Confusion Matrix, provides detailed formulas and explanations for calculating various metrics including accuracy, recall, and specificity.

"ML Functional Performance Metrics" (ISTQB CT-AI Syllabus, Section 5).

NEW QUESTION # 92

Which of the following are the three activities in the data acquisition activities for data preparation?

- A. Feature selecting, feature growing, feature augmenting
- B. Identifying, gathering, labelling
- C. Cleaning, transforming, augmenting
- D. Building, approving, deploying

Answer: B

Explanation:

According to the ISTQB Certified Tester AI Testing (CT-AI) syllabus, data acquisition, a critical step in data preparation for machine learning (ML) workflows, consists of three key activities:

* Identification: This step involves determining the types of data required for training and prediction. For example, in a self-driving car application, data types such as radar, video, laser imaging, and LiDAR (Light Detection and Ranging) data may be identified as necessary sources.

* Gathering: After identifying the required data types, the sources from which the data will be collected are determined, along with the appropriate collection methods. An example could be gathering financial data from the International Monetary Fund (IMF) and integrating it into an AI-based system.

* Labeling: This process involves annotating or tagging the collected data to make it meaningful for supervised learning models. Labeling is an essential activity that helps machine learning algorithms differentiate between categories and make accurate predictions.

These activities ensure that the data is suitable for training and testing machine learning models, forming the foundation of data preparation.

NEW QUESTION # 93

The activation value output for a neuron in a neural network is obtained by applying computation to the neuron.

Which ONE of the following options BEST describes the inputs used to compute the activation value?

SELECT ONE OPTION

- A. Individual bias at the neuron level, and activation values of neurons in the previous layer.

- B. Individual bias at the neuron level, activation values of neurons in the previous layer, and weights assigned to the connections between the neurons.
- C. Individual bias at the neuron level, and weights assigned to the connections between the neurons.
- D. Activation values of neurons in the previous layer, and weights assigned to the connections between the neurons.

Answer: B

Explanation:

In a neural network, the activation value of a neuron is determined by a combination of inputs from the previous layer, the weights of the connections, and the bias at the neuron level. Here's a detailed breakdown:

* Inputs for Activation Value:

* Activation Values of Neurons in the Previous Layer: These are the outputs from neurons in the preceding layer that serve as inputs to the current neuron.

* Weights Assigned to the Connections: Each connection between neurons has an associated weight, which determines the strength and direction of the input signal.

* Individual Bias at the Neuron Level: Each neuron has a bias value that adjusts the input sum, allowing the activation function to be shifted.

* Calculation:

* The activation value is computed by summing the weighted inputs from the previous layer and adding the bias.

* Formula: $z = \sum(w_i \cdot a_i) + b$, where w_i are the weights, a_i are the activation values from the previous layer, and b is the bias.

* The activation function (e.g., sigmoid, ReLU) is then applied to this sum to get the final activation value.

* Why Option A is Correct:

* Option A correctly identifies all components involved in computing the activation value: the individual bias, the activation values of the previous layer, and the weights of the connections.

* Eliminating Other Options:

* B. Activation values of neurons in the previous layer, and weights assigned to the connections between the neurons: This option misses the bias, which is crucial.

* C. Individual bias at the neuron level, and weights assigned to the connections between the neurons: This option misses the activation values from the previous layer.

* D. Individual bias at the neuron level, and activation values of neurons in the previous layer: This option misses the weights, which are essential.

References:

* ISTQB CT-AI Syllabus, Section 6.1, Neural Networks, discusses the components and functioning of neurons in a neural network.

* "Neural Network Activation Functions" (ISTQB CT-AI Syllabus, Section 6.1.1).

NEW QUESTION # 94

Before deployment of an AI-based system, a developer is expected to demonstrate in a test environment how decisions are made. Which of the following characteristics does decision making fall under?

- A. Autonomy
- B. Explainability
- C. Non-determinism
- D. Self-learning

Answer: B

Explanation:

The syllabus defines explainability as the ability to understand how the AI-based system comes up with a particular result:

"Explainability is considered to be the ease with which users can determine how the AI-based system comes up with a particular result." (Reference: ISTQB CT-AI Syllabus v1.0, Section 2.7)

NEW QUESTION # 95

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