Artificial-Intelligence-Foundation Practice Exams and Training Solutions for Certifications [Q24-Q44

Artificial-Intelligence-Foundation Practice Exams and Training Solutions for Certifications Dumps Free Test Engine Player Verified Answers

APMG-International Artificial-Intelligence-Foundation certification is an excellent opportunity for professionals who are looking to gain a foundational understanding of AI. Foundation Certification Artificial Intelligence certification demonstrates that the certified professional has the knowledge and skills required to understand the principles and practices of AI. Foundation Certification Artificial Intelligence certification exam is conducted by a highly respected accreditation and examination body, and candidates who pass the exam are awarded the APMG-International Artificial-Intelligence-Foundation certification.

APMG-International Artificial-Intelligence-Foundation Exam is a certification program designed to assess the knowledge and understanding of individuals in the field of Artificial Intelligence. Foundation Certification Artificial Intelligence certification exam is designed to test the candidate's ability to understand the fundamental concepts, principles, and technologies related to AI. Artificial-Intelligence-Foundation exam focuses on various AI topics such as machine learning, natural language processing, computer vision, and robotics.

NEW QUESTION 24

In an Al project the domain expert is the person…
* with technical and managerial oversight of the business plan
* who manages the agile project and writes the technical terms of reference
* who measures the trustworthiness of the Al system
* with special knowledge or skills in the area of endeavour and defines what is fit for purpose’
Explanation

In an AI project, a domain expert is a person with special knowledge or skills in that particular area of endeavour, and they are responsible for defining what is “fit for purpose” for the project. The domain expert provides insights into the problem and suggests ways to address it. They also provide guidance on evaluating and validating the AI system and its outputs. The domain expert is also responsible for communicating with stakeholders and providing feedback on the progress of the project.
References:

* BCS Foundation Certificate In Artificial Intelligence Study Guide (2019), AI & People, Chapter 12.

* https://www.apmg-international.com/en/al-adoption/domain-expert/

NEW QUESTION 25

In the 1800’s the development of statistics led to_____theorem and is used in probabilistic inference.

(Select the missing word.)
* Boltzmann’s
* Kolmogorov’s
* Bayes’
* The central limit
Explanation

The development of statistics in the 1800s led to the development of the Bayes’ theorem, named after Reverend Thomas Bayes. This theorem is used in probabilistic inference, which is the process of using data to calculate the likelihood of a hypothesis or outcome. The theorem is used for determining the probability of an event occurring given its prior probability, as well as its associated conditions. The Bayes’ theorem is also used in a variety of fields, such as machine learning, artificial intelligence, economics, and medical research.

Sources:

* BCS Foundation Certificate In Artificial Intelligence Study Guide: https://www.bcs.org/category/18071

* APMG

International: https://www.apmg-international.com/en/qualifications/qualification-resources/bcs-foundatio

* EXIN: https://www.exin.com/en/certification/bcs-foundation-certificate-in-artificial-intelligence

NEW QUESTION 26

The EU and United Nations have made designing for all individuals a core principle. What is this type of design called?

* Core design
* Universal design.
* Biophilic design.
* Utopic design.

Explanation

https://universaldesign.ie/What-is-Universal-Design/

Universal design is a type of design that takes into account the needs of all individuals, regardless of age, ability, or physical condition. It is a principle that is embraced by the European Union and the United Nations, and it is based on the idea that products, services, and environments should be designed to be usable by the widest range of people possible. Universal design emphasizes accessibility, usability, and inclusivity, and it is often used to create products and services that are easy to use for people of all ages and abilities.

References: https://www.bcs.org/more/certifications/foundation-certificate-in-artificial-intelligence/ https://www

NEW QUESTION 27

Ensemble learning methods do what with the hypothesis space?
* Select a combination of hypothesis to combine their predictions
* Use stochastic gradient descent to optimise a network.
* Extract ergodic solutions.
* Test multiple hypotheses simultaneously.

Explanation

https://link.springer.com/referenceworkentry/10.1007/978-0-387-73003-5_293#:~:text=Definition,and%20comb It works by selecting different subsets of the data, or different combinations of the hypothesis, and combining the results of each prediction in order to create a single, more accurate result. This is useful in situations where different hypothesis may be accurate in different parts of the data, or where a single hypothesis may not be accurate in all cases. Ensemble learning is used in a variety of applications, from computer vision to natural language processing.

References: [1] BCS Foundation Certificate In Artificial Intelligence Study Guide, BCS [2] Apmg-international.com, “What is Ensemble Learning?”, APMG International,
https://apmg-international.com/en/about-apmg/blog/what-is-ensemble-learning/ [3] Exin.com,

“Ensemble Learning”, EXIN, https://www.exin.com/en-us/learn/ensemble-learning

NEW QUESTION 28

An Al agent relies on its perceptual input. This is called the agent’s what?
* Position
* Environment
* World
* Percept

Explanation

* Performance Measure of Agent It is the criteria, which determines how successful an agent is.

* Behavior of Agent It is the action that agent performs after any given sequence of percepts.

* Percept It is agent's perceptual inputs at a given instance.

* Percept Sequence It is the history of all that an agent has perceived till date.

* Agent Function It is a map from the precept sequence to an action.

Agent Terminology

https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_agents_and_environments.htm An AI agent relies on its perceptual input, which is referred to as the agent's percept. This is the data that the agent collects through its sensors about its environment. The percept allows the agent to make decisions and take actions based on its environment. The agent's percept is important for Artificial Intelligence systems to be able to operate effectively. References:

[1] BCS Foundation Certificate In Artificial Intelligence Study Guide, "Reinforcement Learning", p.96-97. [2] APMG-International.com, "Foundations of Artificial Intelligence" [3] EXIN.com, "Foundations of Artificial Intelligence"

NEW QUESTION 29

What function is used in a Neural Network?
* Linear.
* Activation.
* Statistical.
* Trigonometric.
Explanation

Activation Functions

An activation function in a neural network defines how the weighted sum of the input is transformed into an output from a node or nodes in a layer of the network.

https://machinelearningmastery.com/choose-an-activation-function-for-deep-learning/#:~:text=An%20activation An activation function is a mathematical function used in a neural network to determine the output of a neuron. Activation functions are used to transform the inputs into an output signal and can range from simple linear functions to complex non-linear functions. Activation functions are an important part of neural networks and help the network learn patterns and generalize data. Types of activation functions include sigmoid, ReLU, tanh, and softmax. References: BCS Foundation Certificate In Artificial Intelligence Study Guide, https://bcs.org/certifications/foundation-certificates/artificial-intelligence/

NEW QUESTION 30

What technique can be adopted when a weak learners hypothesis accuracy is only slightly better than 50%?
* Over-fitting
* Activation.
* Iteration.
* Boosting.
Explanation

* Weak Learner: Colloquially, a model that performs slightly better than a naive model.

More formally, the notion has been generalized to multi-class classification and has a different meaning beyond better than 50

percent accuracy.

For binary classification, it is well known that the exact requirement for weak learners is to be better than random guess. […] Notice that requiring base learners to be better than random guess is too weak for multi-class problems, yet requiring better than 50% accuracy is too stringent.

– Page 46, Ensemble Methods, 2012.

It is based on formal computational learning theory that proposes a class of learning methods that possess weakly learnability, meaning that they perform better than random guessing. Weak learnability is proposed as a simplification of the more desirable strong learnability, where a learnable achieved arbitrary good classification accuracy.

A weaker model of learnability, called weak learnability, drops the requirement that the learner be able to achieve arbitrarily high accuracy; a weak learning algorithm needs only output an hypothesis that performs slightly better (by an inverse polynomial) than random guessing.

– The Strength of Weak Learnability, 1990.

It is a useful concept as it is often used to describe the capabilities of contributing members of ensemble learning algorithms. For example, sometimes members of a bootstrap aggregation are referred to as weak learners as opposed to strong, at least in the colloquial meaning of the term.

More specifically, weak learners are the basis for the boosting class of ensemble learning algorithms.

The term boosting refers to a family of algorithms that are able to convert weak learners to strong learners.

https://machinelearningmastery.com/strong-learners-vs-weak-learners-for-ensemble-learning/ The best technique to adopt when a weak learner’s hypothesis accuracy is only slightly better than 50% is boosting. Boosting is an ensemble learning technique that combines multiple weak learners (i.e., models with a low accuracy) to create a more powerful model. Boosting works by iteratively learning a series of weak learners, each of which is slightly better than random guessing. The output of each weak learner is then combined to form a more accurate model. Boosting is a powerful technique that has been proven to improve the accuracy of a wide range of machine learning tasks. For more information, please see the BCS Foundation Certificate In Artificial Intelligence Study Guide or the resources listed above.

NEW QUESTION 31

With a large dataset, limited computational resources or frequent new data to learn from, we can adopt what type of machine learning?
* Batch learning.
* Big Data learning.
* Patchwork learning.
* Online learning.
Explanation

Batch learning describes learning from large data sets. All of the data are used to train and test the algorithm. The computer resources required are governed by the volume, velocity, variety and veracity of data. This learning is done offline. Online learning is undertaken with data in small or mini batches. Learning occurs as data become available – an example is a system that learns from stock market prices.

Online learning is a type of machine learning that can be used when a large dataset is limited in computational resources or if the data is frequently changing. It allows the system to learn from new data as it is being presented, rather than having to re-train the entire dataset each time new data is added. This makes it more efficient and effective than batch learning, as it only needs to process the new data and not the entire dataset.

Online learning is often used in applications such as fraud detection, where new data is constantly being added and needs to be analyzed quickly.

For more information, please refer to the BCS Foundation Certificate In Artificial Intelligence Study Guide (https://www.bcs.org/upload/pdf/bcs-foundation-certificate-in-artificial-intelligence-study-guide.pdf) or the EXIN Artificial Intelligence Foundation Certification (https://www.exin.com/en/exams/artificial-intelligence-foundation).

NEW QUESTION 32

Professor David Chalmers described consciousness as having two questions. What were these?
* An easy one and a hard one.
* What is the sub conscious and what is the conscious?
* Can we integrate our knowledge to form consciousness and can we simulate consciousness?
* Are only humans conscious and are machines always unconscious?
Explanation

Professor David Chalmers described consciousness as having two questions: “What is it like to be conscious?” and “Can machines be conscious?”. The first question, “What is it like to be conscious?”, is an attempt to understand what it is like to experience the subjective aspects of consciousness, such as feeling, emotion, and perception. The second question, “Can machines be conscious?”, is an attempt to understand whether or not machines can have the same kinds of subjective experiences as humans. For more information, please see the BCS Foundation Certificate In Artificial Intelligence Study Guide or the resources listed above.

NEW QUESTION 33

Narrow or weak Al can be useful to robots.

Which of the following is an example of narrow Al?
* Conscious simul-ation.
* Artificial General Al.
* Conscious integration.
* NLP – Natural Language Processing.
Explanation

NLP – Natural Language Processing is an example of narrow AI. It is a type of AI system that is able to understand, interpret, and generate natural language. NLP has become increasingly popular over the past few years, as it has been used to create applications such as chatbots, virtual assistants, and search engines. NLP systems are able to learn language and the context in which it is used, and they are able to understand the nuances of language and its different meanings. References: BCS Foundation Certificate In Artificial Intelligence Study Guide, https://bcs.org/certifications/foundation-certificates/artificial-intelligence/

NEW QUESTION 34

Which of the following is an example of fitting a curve to a set of data?

* Python.
* Least squares regression.
* Bayesian network.
* Backward propagation.
Explanation

Least Squares Regression is a statistical technique used for fitting a curve to a set of data. It involves minimizing the sum of the squares of the differences between the observed data and the fitted curve. This is done by finding the line of best fit, which is the line that minimizes the sum of the squared residuals. The line of best fit is determined by finding the parameters that give the minimum sum of the squared residuals. This technique is often used in data science and machine learning to create models that can be used to make predictions. References: BCS Foundation Certificate In Artificial Intelligence Study Guide, https://bcs.org/certifications/foundation-certificates/artificial-intelligence/

NEW QUESTION 35

In Machine learning what are a brain’s axons called?
* Dendrites
* Edges
* Tetrahedra.
* Nodes
Explanation

In Machine Learning, the brain’s axons are referred to as nodes. Nodes are the components of a neural network that are responsible for processing the input data and generating the output. A node is a mathematical function that takes input data, performs a computation on it, and produces an output. Each node is connected to other nodes in the network via edges, which represent the strength of the connection between the respective nodes. The strength of the connection between two nodes is determined by the weights assigned to each edge.

The weights are adjusted during the training process to generate the desired results.

For more information, please refer to the BCS Foundation Certificate In Artificial Intelligence Study Guide (https://www.bcs.org/upload/pdf/bcs-foundation-certificate-in-artificial-intelligence-study-guide.pdf) or the EXIN Artificial Intelligence Foundation Certification (https://www.exin.com/en/exams/artificial-intelligence-foundation).

NEW QUESTION 36

What is one of the MAIN contributions of Al to the rapid development of The Fourth Industrial Revolution?
* Enhanced design.
* Automation
* Big Data
* Al personal assistants.
Explanation

https://research.com/careers/what-is-the-fourth-industrial-revolution

Artificial Intelligence (AI) is playing a major role in the rapid development of the Fourth Industrial Revolution. AI technologies are enabling the automation of many processes that were previously carried out by humans or machines, which has greatly increased the speed, efficiency, and accuracy of these processes.

Automation is one of the main contributions of AI to the Fourth Industrial Revolution, as it has greatly increased the productivity of

businesses and industries, while reducing the cost of production and improving the quality of products.

References: https://www.bcs.org/more/certifications/foundation-certificate-in-artificial-intelligence/ https://www

NEW QUESTION 37

What does Prof David Chalmers describe the hard consciousness problem to be as comples as?
* Psychology.
* Turbulence.
* Quantum mechanics.
* The universe.
Explanation

Prof David Chalmers describes the hard consciousness problem to be as complex as the universe. He argues that understanding consciousness is as hard as understanding the universe itself, due to the number of variables and dimensions involved. He has compared the complexity of the problem to that of turbulence, quantum mechanics, and psychology, but believes that the problem of consciousness is even more complex than all of these.

References:

[1] https://www.bcs.org/upload/pdf/foundation-certificate-ai-syllabus-v1.pdf [2] https://www.apmg-international

David J. Chalmers, “The Hard Problem of Consciousness”, in J. Shear (ed.), Explaining Consciousness: The “Hard Problem”, MIT Press, 1997.

NEW QUESTION 38

What term do computer scientists and economists use to describe how happy an agent is?
* Index.
* Warm.
* Return
* Utility.
Explanation

https://griffinshare.fontbonne.edu/cgi/viewcontent.cgi?article=1008&context=ijds Computer scientists and economists use the term “utility” to describe how happy an agent is. Utility is a measure of satisfaction or preference, and it is used to evaluate an agent’s satisfaction with a particular outcome. Utility can be used to determine the optimal decision or action for an agent to take in order to maximize its satisfaction. References:

[1] BCS Foundation Certificate In Artificial Intelligence Study Guide, “Decision Making and Planning”, p.99-100.
[2] APMG-International.com, “Foundations of Artificial Intelligence” [3] EXIN.com, “Foundations of Artificial Intelligence”

NEW QUESTION 39

How could machine learning make a robot autonomous?
* Use OCR, optical character recognition, to read documents
* Use NLP (Natural Language Processing) to listen
* Use actuators to modify its environment
* Learn from sensor data and plan to carry out a task.

Explanation

Machine learning can be used to make robots autonomous by allowing them to learn from sensor data and plan how to carry out a task. This involves using algorithms to analyze data from sensors and use this data to make decisions and take actions. By using machine learning, robots can learn from their environment and become more autonomous. References:

[1] BCS Foundation Certificate In Artificial Intelligence Study Guide, “Robotics”, p.98. [2] APMG-International.com, “Foundations of Artificial Intelligence” [3] EXIN.com, “Foundations of Artificial Intelligence”

Q&As with Explanations Verified & Correct Answers:
https://www.vceprep.com/Artificial-Intelligence-Foundation-latest-vce-prep.html]