Congratulations! You passed!

Next Item

1. Select all correct answers:

1 / 1 points

- [x] Data Science uses statistics and ML to monetize information in data.

  Correct
  This is a correct answer.

- [ ] Machine Intelligence aims at a symbiosis of AI and human intelligence.

  Un-selected is correct

- [x] Machine Learning (ML) is a sub-field of AI that teaches computers to perform tasks from experience.

  Correct
  This is a correct answer.

- [x] Artificial Intelligence (AI) deals with machines that achieve a human-level performance at specific tasks such as face or speech recognition, machine translation, credit approvals, etc.

  Correct
  This is a correct answer.

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2. Select all correct answers:

1 / 1 points

- [ ] A rational AI agent should select a performance measure that allows it to compute optimal actions in a most efficient way.

  Un-selected is correct

- [x] A rational AI agent should select actions that are expected to maximize its performance measure.

  Correct
  This is a correct answer.

- [x] AI studies intelligent agents that perceive their environment and perform actions to solve tasks that involve mimicking cognitive functions of humans.

  Correct
  This is a correct answer.

- [x] AI agents can perceive a physical environment in real time via sensors, or by reading digital data collected from an environment.

  Correct
  This is a correct answer.

- [ ] A rational AI agent should not use any built-in knowledge about its environment.

  Un-selected is correct

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3. What is the goal of learning in Machine Learning?

1 / 1 points

- ( ) The goal of learning is to store all information relevant for your business problem, so that you would be able to quickly find it when needed.
- (•) The goal of learning is the ability to generalize from data.

  Correct
  This is the correct answer.

- ( ) Specifically for Finance, the goal of learning is to learn how to make the most money in a shortest time.

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4. Select all correct answers

1 / 1 points

- [ ] Machine Learning methods are focused on inferring causal relationships.

  Un-selected is correct

- [x] Machine Learning deals with both probabilistic and non-probabilistic methods.

  Correct
  This is a correct answer.

- [x] Scalability of Machine Learning methods is often a major concern in industrial applications.

  Correct
  This is a correct answer.

- [ ] "Non-parametric" means a model that has no parameters.

  Un-selected is correct

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5. Choose all correct statements:

1 / 1 points

- [x] Most of available data for Machine Learning is unsupervised data.

  Correct
  This is a correct answer.

- [x] Reinforcement Learning is in a sense an intermediate case between Supervised and Unsupervised Learning, as some feedback about right actions is available, but it is incomplete.

  Correct
  This is a correct answer.

- [ ] Reinforcement Learning forces Unsupervised Learning algorithms to behave in a similar way to Supervised Learning algorithms using the latest groundbreaking research in Deep Learning.

  Un-selected is correct

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6. Pick all correct statements:

1 / 1 points

- [ ] Modern ML packages unify Supervised and Unsupervised algorithms using generic APIs: if you replace all labels in a dataset by NaNs (Not a Number), the algorithm will assume that your problem is an Unsupervised Learning problem.

  Un-selected is correct

- [x] Clustering could also be thought as a special type of Representation Learning when the output space is a discrete set.

  Correct
  Correct!

- [x] The difference between (direct) Reinforcement Learning and Inverse Reinforcement Learning is that in the latter case, there is no information about rewards received by the agent.

  Correct
  Correct!

- [x] Both clustering and classification construct a map of a multi-dimensional input vector onto a discrete set of labels. The only difference is that for classification, there are class labels that make the problem an example of Supervised Learning, while clustering is an example of Unsupervised Learning.

  Correct
  Correct!

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7. Pick all correct statements.

1 / 1 points

- ( ) In the name "Deep Learning", the word "Deep" refers to new ideas that came to Computer Science from Physics around 2006-2007.
- (•) All types of Machine Learning algorithms can be implemented via neural networks, hence they offer a universal framework.

  Correct
  Correct!

- ( ) As Neural Networks won in all applications they have been tried on so far, Neural Networks is all I need to learn in Machine Learning.

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8. Which of these statements are correct?

1 / 1 points

- [x] Reinforcement Learning is a suitable framework for portfolio optimization, even though it can also be done with Supervised Learning using some pre-specified models of the world.

  Correct
  Correct!

- [x] Modeling corporate defaults is an exercise in Unsupervised Learning because we do not know the future.

  Correct
  This is a correct answer.

- [ ] Regime-change detection is a Supervised Learning task, as we always know the regime for each given day.

  Un-selected is correct

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9. Why can perception tasks in Finance involve Reinforcement Learning?

1 / 1 points

- (•) In Finance, expectations regarding the future are sometimes embedded in perception of today's environment. If this future is influenced by actions of rational agents, Reinforcement Learning might be an appropriate framework.

  Correct
  Correct!

- ( ) Simply by induction: As Reinforcement Learning is a sort of Deep Learning, and Deep Learning always beats any other ML algorithms, it follows that all perception tasks in Finance should better start with Reinforcement Learning.
- ( ) All this is a way too abstract stuff for me. Can we move on to TensorFlow demos please?

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10. Choose all correct answers: What are the main differences between Machine Learning in Finance and Machine Learning in Tech?

1 / 1 points

- [x] Financial data is typically non-stationary.

  Correct
  This is a correct answer.

- [x] In Finance, relevant data is often of a medium-to-large size.

  Correct
  This is a correct answer.

- [ ] There are no differences, really. The Gradient Boosting algorithm always works. Now, can you show us some TensorFlow demos, please?

  Un-selected is correct

- [x] The noise-to-signal ratio is typically higher for Financial data than for data used in Tech applications.

  Correct
  This is a correct answer.