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1. What are the advantages of containers?

1 / 1 point

- ☐ Containers can run any host OS
- ☐ Containers are never affected by the host machine
- ☐ Containers are always more secure
- ☒ Containers are more efficient than virtual machines because they don't require the overhead of a complete virtualization solution.

✔ **Correct**

Containers are portable and run on any platform that supports container technology. Containers provide isolation between applications, so one application cannot interfere with another.

2. What is an HTTP API?

1 / 1 point

- ☐ A website that only uses HTML and CSS.
- ☐ Websockets
- ☒ An HTTP API is an interface for communication between two systems using the Hypertext Transfer Protocol (HTTP).
- ☐ A website that uses JavaScript to make requests to a server.

✔ **Correct**

Another way of describing it would be a system that allows two applications to communicate with each other over the internet

3. What are the advantages of containerized Machine learning applications?

1 / 1 point

- ☒ Portability, flexibility, and reduced development and deployment time.
- ☐ Always more compatible
- ☐ Always use fewer resources
- ☐ Always less complex

☒ **Correct**

There are several advantages to containerized machine learning applications, including:

1. Increased portability and flexibility - Containers can be easily moved between different environments, making testing and deploying machine learning applications in various settings easy.
2. Improved resource utilization - Containers allow for more efficient use of resources, like multiple applications running on a single server or cluster of servers.
3. Isolation and security - Containers isolate applications from each other and the underlying operating system, providing an additional layer of security.
4. Reduced development and deployment time - Containers are quick to create and deploy, making it possible to iterate rapidly on machine learning applications.

4. What are the advantages of using ONNX for model interoperability?

1 / 1 point

- ☐ Lower complexity
- ☐ Universal compatibility
- ☒ Open standard supported by many tools and frameworks.
- ☐ Always supported

☒ **Correct**

There are several advantages to using ONNX for model interoperability:

1. ONNX is an open standard supported by many tools and frameworks.
2. ONNX models can be easily exported from one framework to another, allowing you to use the best tool for each task.
3. ONNX models are portable and can be deployed on various devices and platforms.

4. ONNX provides a consistent interface for model development, so you can easily switch between frameworks as your needs change.

5. What are the use cases for edge-based machine learning models?

1 / 1 point

- ☒ IoT devices
- ☐ Sensitive data
- ☐ Constantly changing data
- ☐ Large machine-learning models

✓ **Correct**

There are many potential use cases for edge-based machine learning models. For example, these models could improve the accuracy of predictions made by IoT devices or provide real-time feedback to users based on their interactions with a system. Additionally, edge-based machine learning models could be used to monitor and optimize the performance of industrial equipment. For example, to automatically detect and diagnose problems with machinery.

6. Which of the following is a common use case for DataOps?

1 / 1 point

- ☐ Managing application dependencies
- ☒ Streamlining data management, processing, and analytics workflows
- ☐ Website design
- ☐ Software development

✓ **Correct**

DataOps is a set of practices that aims to streamline data management, processing, and analytics workflows by applying principles from DevOps, Agile, and Lean methodologies. This includes improving collaboration, automating processes, and continuously monitoring and improving data pipelines.

7. What is the primary purpose of monitoring in MLOps?

1 / 1 point

- ☐ Creating and managing databases
- ☐ Debugging code
- ☐ Managing application dependencies
- ☒ Ensuring model performance, tracking model drift, and maintaining data quality

✓ **Correct**

The primary purpose of monitoring in MLOps is to ensure that machine learning models are performing as expected, track model drift, and maintain data quality. Monitoring can help identify issues early, allowing teams to take corrective action before problems become critical.

8. Which of the following is NOT a part of an MLOps pipeline?

1 / 1 point

- ☐ Data preprocessing
- ☒ Web application development
- ☐ Model deployment
- ☐ Model training

✓ **Correct**

Web application development is not a part of an MLOps pipeline. While web applications may be used to interact with machine learning models, the development of the web application itself is not a part of MLOps.

9. What is the role of Data Version Control (DVC) in a DataOps pipeline?

1 / 1 point

- ☒ Tracking and versioning datasets and machine learning models
- ☐ Creating and managing databases
- ☐ Managing application dependencies
- ☐ Debugging code

✓ **Correct**

Data Version Control (DVC) is a version control system for data science and machine learning projects. Its primary role in a DataOps pipeline is to track and version datasets and machine learning models, making it easier to reproduce experiments and share data and models with teammates.

10. What is a key benefit of using infrastructure as code (IaC) in DevOps pipelines?

1 / 1 point

- ☐ Debugging code
- ☐ Developing machine learning models
- ☐ Managing application dependencies
- ☒ Consistent, reproducible, and version-controlled infrastructure

✓ **Correct**

A key benefit of using infrastructure as code (IaC) in DevOps pipelines is the ability to create consistent, reproducible, and version-controlled infrastructure. This allows for easier management, provisioning, and deployment of resources, as well as better collaboration among team members.