Back

Assessment 2
Graded Assignment • 15 min

English **Due** Mar 21, 11:59 PM IST

Your grade: 100%

Your latest: **100%** • Your highest: **100%**
To pass you need at least 80%. We keep your highest score.

Next item →

1. What is the purpose of dimensionality reduction techniques in visualizing model results? 1 / 1 point

- ○ To reduce the size of the dataset for faster computation.
- ◉ To make the data easier to interpret visually by reducing it to 2D or 3D.
- ○ To remove noise from the dataset.
- ○ To enhance the accuracy of the model.

Correct
Correct! Dimensionality reduction helps in visualizing high-dimensional data in 2D or 3D.

2. How do you convert a graph into a dense adjacency matrix? 1 / 1 point

- ◉ By representing the graph using a 2D array where each cell (i, j) is 1 if there's an edge between nodes i and j, otherwise 0.
- ○ By listing all nodes and their adjacent nodes in a dictionary format.
- ○ By creating a list of edges with their corresponding weights.
- ○ By using a set to store all pairs of connected nodes.

Correct
Correct! This is a standard way to convert a graph into an adjacency matrix.

3. Which of the following are components of a Vision Transformer (ViT)? 1 / 1 point

- ☑ Image patches

Correct
Correct! Vision Transformers split images into patches as part of their processing pipeline.

- ☐ Convolutional layers
- ☑ Multihead self-attention

Correct
Correct! Multihead self-attention is a key component in Vision Transformers, allowing the model to focus on different parts of an image simultaneously.

- ☐ Recurrent layers
- ☑ Position embeddings

Correct
Correct! Position embeddings are used in Vision Transformers to retain the spatial information of image patches.

4. What are some benefits of using Vision Transformers in computer vision tasks? 1 / 1 point

- ☑ They can handle long-range dependencies in images.

Correct
Correct! Vision Transformers can handle long-range dependencies in images due to their self-attention mechanism.

- ☐ They are less computationally expensive than CNNs.
- ☑ They can leverage large-scale pre-trained models.

Correct
Correct! Vision Transformers can benefit from large-scale pre-trained models, which can improve their performance on various tasks.

- ☐ They require very little data for training.
- ☐ They are inherently better at image classification than any other model.

5. What is one primary advantage of using PyTorch Lightning over classical PyTorch implementation? 1 / 1 point

- ◉ Simplified code with less boilerplate
- ○ Increased model accuracy
- ○ Faster data processing
- ○ More available pretrained models

Correct