Quiz 9

Score: 10/10

1. What is computer vision?

A technology that allows computers to hear and understand human speech.

A field of study focused on enabling computers to interpret and understand visual information from the real world.

A method for computers to understand and interpret tactile information.

A process that helps computers understand and react to human emotions.

Explanation

Computer vision is a field of study that enables computers to interpret and understand the visual world. It seeks to automate tasks that the human visual system can do.

2. Which of the following is NOT a common application of computer vision?

Healthcare diagnostics

Weather forecasting

Autonomous vehicles

Facial recognition

Explanation

While computer vision can be applied to various domains, weather forecasting is not typically considered a common application of computer vision. Common applications include object recognition, image retrieval, video tracking, and more.

3. Which feature extraction technique is commonly used in computer vision?

Principal Component Analysis (PCA)

Local Binary Patterns (LBP)

Histogram of Oriented Gradients (HOG)

Scale-Invariant Feature Transform (SIFT)

Explanation

Histogram of Oriented Gradients (HOG) is a feature descriptor used in computer vision and image processing for the purpose of object detection. It represents the distribution of intensity gradients or edge directions in an image.

4. Which of the following algorithms is commonly used for object detection in computer vision?

AlexNet

YOLO (You Only Look Once)

ResNet

VGG16

Explanation

YOLO (You Only Look Once) is a popular algorithm for real-time object detection in computer vision. It divides the input image into a grid and predicts bounding boxes and class probabilities directly.

5. **In computer vision, what does the acronym CNN stand for?**

Complex Neural Network

Convolutional Neural Network

Computerized Neuron Network

Core Neural Network

Explanation

In computer vision, CNN stands for Convolutional Neural Network. It is a class of deep, feed-forward artificial neural networks most commonly applied to analyzing visual imagery.

6. **Which programming language is commonly used for computer vision tasks?**

Java

Python

C#

R

Explanation

Python is widely used for computer vision tasks due to its extensive libraries like OpenCV and TensorFlow, which provide powerful tools for image processing, machine learning, and neural networks.

7. **True or False: Edge detection is a common image processing technique used in computer vision.**

True

False

Explanation

True. Edge detection is a fundamental technique in computer vision used to identify points in a digital image where the brightness of the pixels changes sharply.

8. **Which of the following is a method for depth perception in computer vision?**

Point cloud reconstruction

Depth-from-focus

Explanation

Stereo vision is a technique where two cameras are used to simulate human binocular vision,

Stereo vision

Color constancy

allowing depth perception by comparing the visual information from both cameras.

9. **What is the purpose of non-maximum suppression in computer vision?**

To maximize the intensity of all pixels in an image

To suppress non-maximum pixels, keeping only the local maxima as object candidates

To enhance the contrast of an image

To preprocess the image for feature extraction

Explanation

Non-maximum suppression is a technique used in object detection to suppress non-maximum pixels, keeping only the local maxima as object candidates, which helps in reducing the number of spurious detections.

10. **In computer vision, what does the term 'ROI' stand for?**

Random Object Identification

Region of Interest

Relative Object Inspection

Recognized Object Identifier

Explanation

In computer vision, ROI stands for Region of Interest. It refers to a specific area within an image that is the focus of attention or analysis, usually for extracting features or applying algorithms.