10 Question

1. What is image segmentation?

**Ans:** Image segmentation is the process of partitioning or dividing an image into multiple segments as per object boundaries available in a digital image. By segmentation, we can extract a particular type of object from a given digital image.

1. What are the different applications of segmentation?

**Ans:** The following are some of the applications of segmentation

* 1. Computer vision
  2. Locating tumor in the human body
  3. Surgery planning
  4. Face detection
  5. Self-driving cars
  6. Detecting objects in satellite imaging
  7. Face recognition, etc

1. What is the MobileNetV2 model?

**Ans:** MobileNetV2 is a convolution neural network that can run on mobile devices or devices with mobile architecture. They are good at extracting features from images with comparatively good performance and acceptable accuracy.

1. What is the U-Net model?

**Ans:** U-Net is an end-to-end fully convolution network. It only contains convolution layers and does not contain any dense layer. The U-Net is a convolutional network architecture for fast and precise segmentation of images.

1. Why augmentation is required?

**Ans:** Augmentation helps in adding more images in training datasets without making model overfit as an augmented image is different than the original images. We can use different kinds of transformations and rotations.

1. Why use the pre-trained models?

**Ans:** Pre-trained models can be easily re-trained with fewer images still can produce good accuracy.

1. Is the VOC challenge winner model published?

**Ans:** No, the model of the VOC competition winner is not published.

1. How this model can further be improved?

**Ans:** If we want to use this model in applications that require high accuracy we need to use some other encoder with dense layers. We can further improve this model by using the MobileNetV3 and more images.

1. Can this trained model be used for image classification?

**Ans:** Yes, this model can be used for image classification however we need to tweak the last layer of the model to produce only 22 classes per image rather than producing 22 classes for each pixel.

1. What are the advantges of MobileNetV2?

**Ans:** Main advantage of the MobileNetV2 is, it performs well on mobile architecture devices. The MobileNetV2 produces high accuracy results while keeping the parameters and mathematical operations as low as possible.