Module 10: Unsupervised Learning

Case Study – 2

Case Study – 2

Objective:

- Use k-means clustering for image segmentation and to identify the dominant color in the image.

Question:

1. Open and display the image “dog.jpeg”. Convert the image into a numpy array, so that it can be used in further processing.

   [Hint: Use the PIL module from python]

2. Find out the dimensions of the image and convert it into a two-dimensional array.

3. Use K-means clustering with k set to 3 and cluster the image.

[Hint: Refer to k-means module of scikit learn]

4. Predict the cluster label of every pixel in the image and plot it back as an image.

5. Find out the three dominant colors in the image.

   [Hint: The cluster centers should correspond to three dominant colors]