Experiment 13 K- Mean

K-means Clustering

Perform the following :

1. Finding Closest Centroids
2. Computing Centroid Means
3. K-means on example dataset
4. Random initialization
5. Equivalent Code using Scikit-Learn

you will implement the K-means algorithm and use it for image compression.

In this exercise, you will use the K-means algorithm to select the 16 colors that will be used to represent the compressed image. Concretely, you will treat every pixel in the original image as a data example and use the K-means algorithm to find the 16 colors that best group (cluster) the pixels in the 3-dimensional RGB space. Once you have computed the cluster centroids on the image, you will then use the 16 colors to replace the pixels in the original image.

(a) Load image
(b) Run K-Means
(c) Apply K-Means to compress an image
(d) Show the original images and compress images

Upload link:
https://forms.gle/v7K1qh944DoNdvrK9