EE5175: Image Signal Processing

Lab-11

K-Means Clustering

Apr. 22 (Batch-A) and Apr. 23 (Batch-B)

Problem Statement

Perform K-means clustering on the input image 'car.ppm' for $K = 3$ clusters. Use only Euclidean distance as the distance measure for all iterations. Basic data units to be clustered are vectors containing pixel data, i.e., [r g b]. Perform 5 iterations of the algorithm. Initial cluster means are :

- cluster1 - [255 0 0]
- cluster2 - [0 0 0]
- cluster3 - [255 255 255]

Note:

- In this assignment, you will be working with a color image 'car.ppm'.
- Each pixel in a color image has (R,G,B) components. The matrix containing color image data is a 3 dimensional matrix (e.g. - height*width*3). So [img(m,n,1) img(m,n,2) img(m,n,3)] will give the R,G,B components at (m,n) pixel respectively.
- People with Windows machines, please install Irfanview software in order to display .ppm files.

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