*EE*511 : *ComputerVision*

LAB ASSIGNMENT – I

Student's Name: Madhur Jajoo
Roll Number: RB20211
Mobile No.: 7597389137
Branch: Data Science and Engineering

1 Question 1

In this part we had to load an random image from the imagenet dataset and resize that to $(256, 256)$, and then convert to it to grayscale. The Gray Image is as follows:

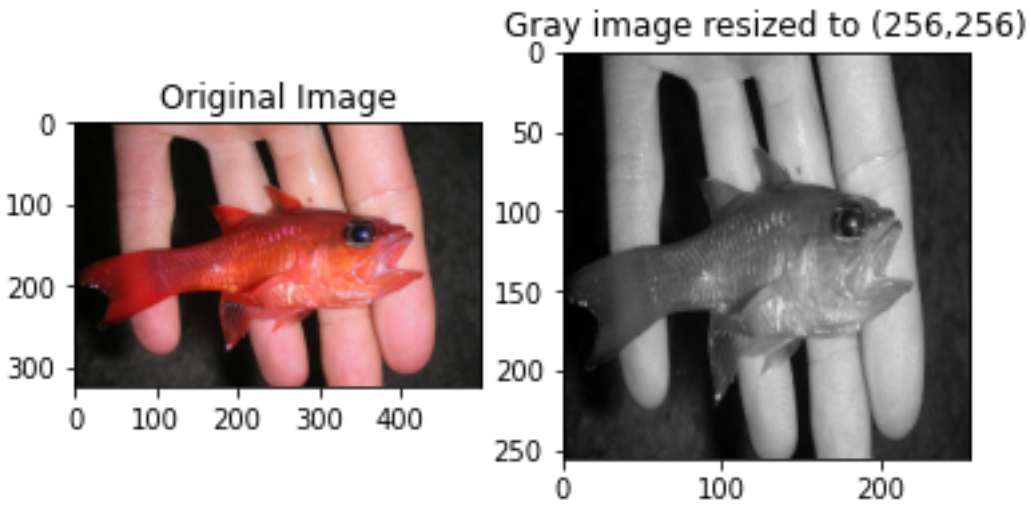

Figure 1: Original image and gray image side by side

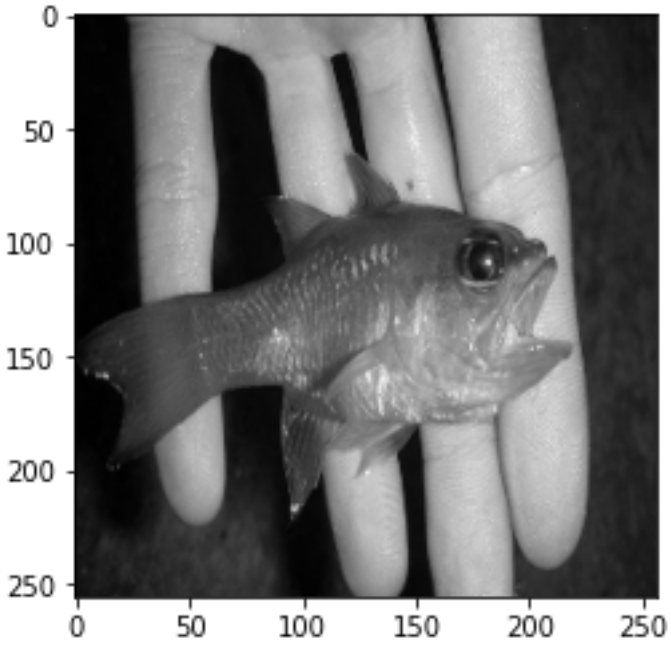

Figure 2: Gray Image

Then we had to perform flips on the image.

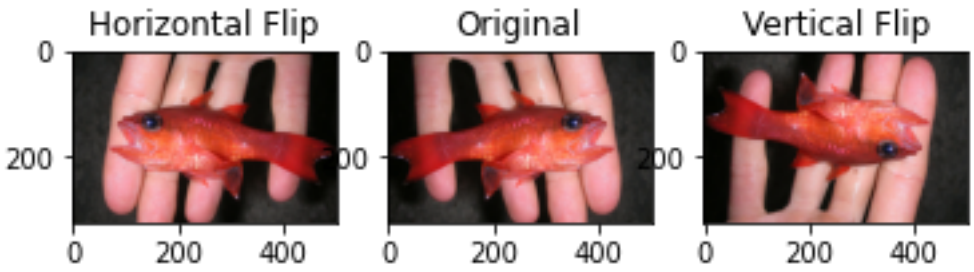

Figure 3: Flipped Images with original image side by side

In the last part of this question we had to do some random crops. the plot is :

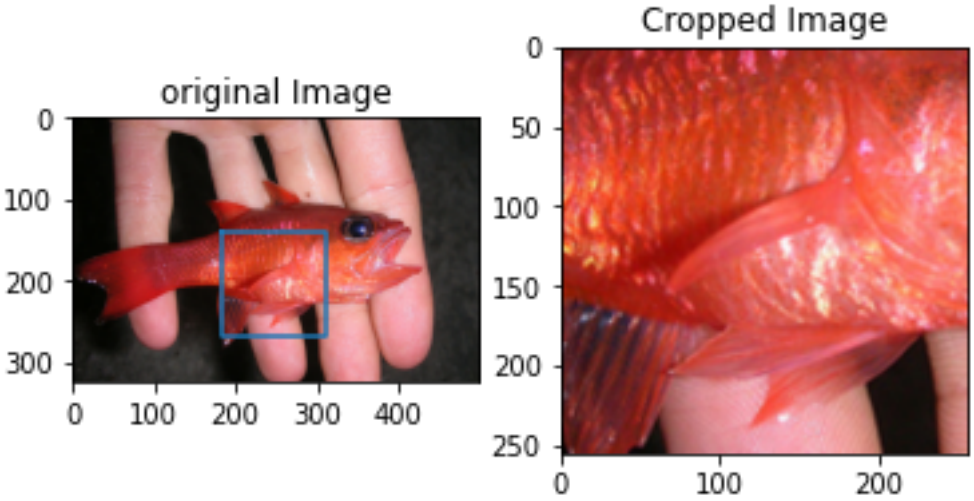

Figure 4: random crop of 128,128 on the image highlighted

2 Question 2

In this question we had to extract k^{th} frames from the videos where k is user specified, and is taken as input from the user.

3 Question 3

Frequency histogram of mnist dataset has to be saved in csv format in the first part of this question. After that we had to standardize the data in $N(0,1)$ which means mean $= 0$ and variance $= 1$

The third part asks for t-SNE plot of the original dataset. which is as follows: Least Square method

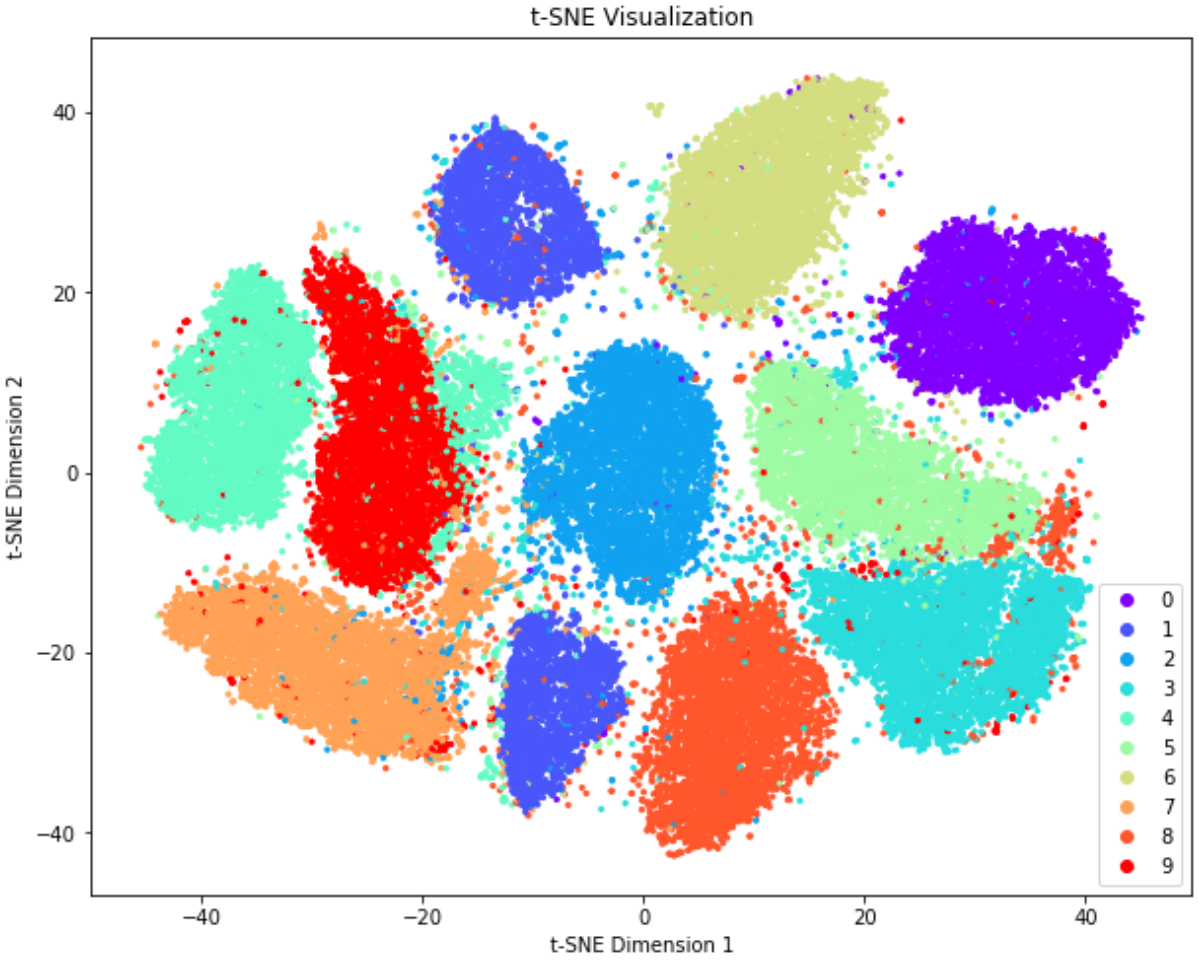

Figure 5: t-SNE plot for test data

in 4th part, first for any random 2 classes, then for all the classes
The accuracy score for class 1 and 6 is : 99.4%
The accuracy score for all the 10 classes is : 86.1%

4 Question 4

Pca

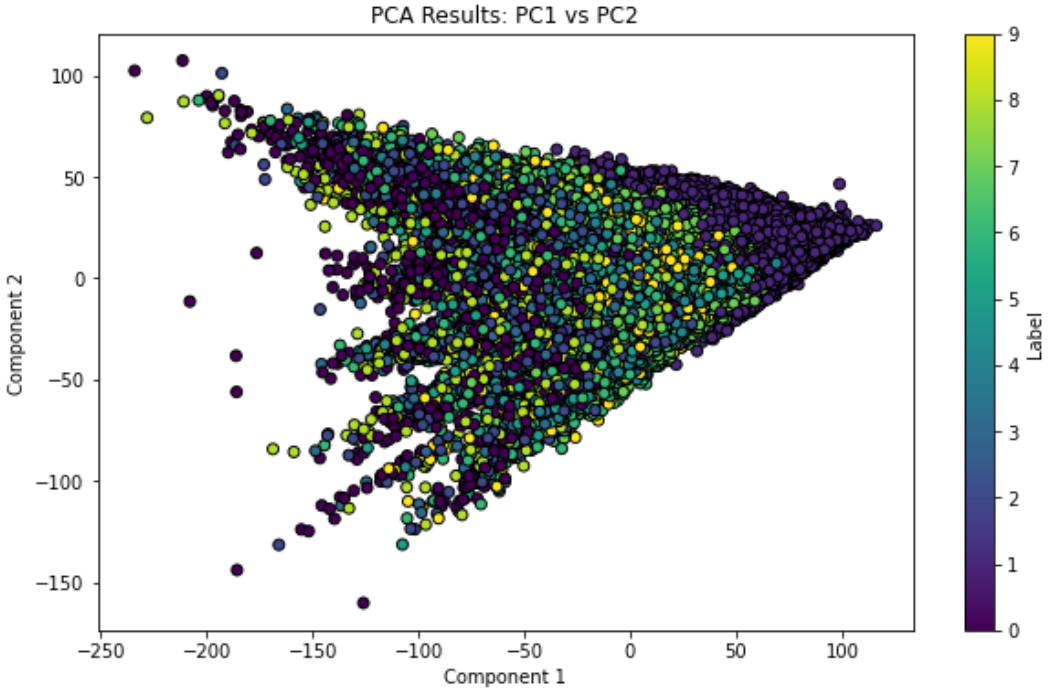

Figure 6: PCA on train data

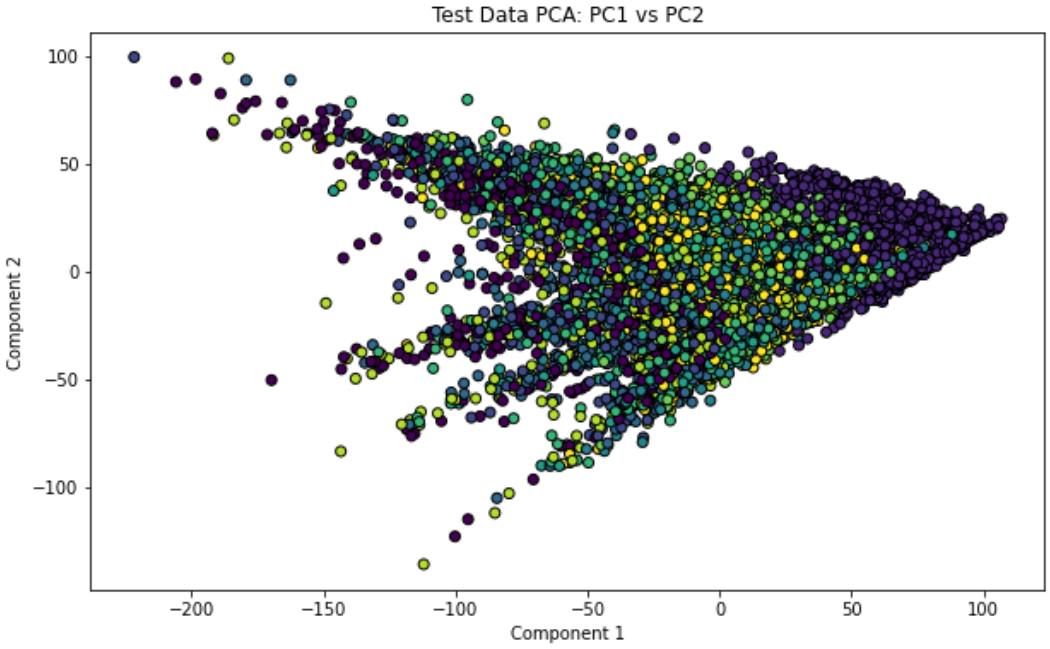

Figure 7: PCA on test data