EEE 584/CNG 583 Assignment #2

- Use the link given below to download Caltech101 dataset (101_ObjectCategories.tar.gz (131Mbytes)).

  http://www.vision.caltech.edu/Image_Datasets/Caltech101/

- You will use two object classes in this dataset to implement a CNN based object recognition. The object classes are:

  1. Airplanes (Total 800 images)

  2. Motorbikes (Total 798 images)

  In a CNN based object classification, we need a significant number of images for training each of the classes. This is why we particularly selected these two objects: Airplanes and Motorbikes.

- For training these two classes, you will use the first 400 images of Airplanes, and the first 400 images of Motorbikes. Therefore, the rest of the images will be used for the testing (400 test images for Airplanes, 398 test images for Motorbikes).

  Training and testing images will be gray-scale with size 75x75.

- Design a CNN network (as I discussed in video lectures) to perform an optimal result.

- Display the Confusion Matrix, and calculate the accuracy of the classification.

You are free to use **any programming platform (e.g. Matlab, Python, etc)** with built-in functions/libraries.

Note: Provide the code, show the confusion matrix and accuracy. In addition, display some images from the dataset.