Report:

In GPU task 1, A small dataset of 16 images is taken where 8 images belongs to Louie and 8 does not contain Louie. When we try to train this model with 2 epochs the result gives a 50% accuracy on Louie classifier. Next when we increase the number of epochs and the network AlexNet remains same. We get a 100% accuracy on image classification. But this accuracy is achieved only with the limited set of images. That network has *overfit:* it is only effective on the exact images that it was exposed to during training.

In GPU task 2, a data set of Cats and dogs containing 18750 images are taken. When we use AlexNet network with SGD optimizer. The best model gives an accuracy of 81.9% with 5 epochs.

In GPU task 3, we learn to deploy our trained model. We take our trained neural network model that can classify dogs and cats *from*DIGITS to create an application *around* it. A couple of python scripts runs defining the architecture and weights file of trained model. Then we create a classifier and treat our network as function.

In GPU task 4, for this one we start with a pretrained model and then try to implement study more where we end up overfitting model by increasing number of epochs and slowing and fixing the learning rate.

In GPU task 5, introduces with three different approaches. The first one uses the sliding window approach to perform image classification. Approach 2 uses rebuilding from an existing neural network. AlexNet model is converted to fully convolutional network. And approach 3 uses object detection method.