

## **Machine Learning Assignment**

### **Problem Statement**

Implement a 3-class Image Classifier, using a CNN, on a dataset, which consists of 1000 images each of panda, cat and dog. The CNN used should be custom designed. You'll have to achieve >85% validation accuracy.

To achieve that, you can experiment with but not limited to:

1. Number of layers
2. Parameters inside the layers
3. Optimizers and learning rate schedulers [You can even get good results without a learning rate scheduler]
4. Regularization techniques like Data augmentation, Dropout, BatchNorm
5. Number of epochs

### **Tasks**

The submission will be in the form of a jupyter notebook. The notebook must contain the following :

1. Understanding of Problem statement
2. Explore the Data
3. Data Preparation(Image Transforms, Data Loaders etc)
4. Training Configuration
5. Model definition
6. Training
7. Validation
8. Plot Loss and Accuracy
9. Display Confusion Matrix
10. Sample Prediction