Approach Note

CV

The project was based on 2 approaches – Inception Network and Convolution Neural Network. Inception network uses a large amount of resources to run and takes a lot of time while the Convolution Neural Network is able to train in a much shorter time.

The labeled images provided were divided into train data set and validation data set in 66:33. Also the training data set was augmented (the images were flipped horizontally) this doubled the training dataset size.

Due to limited computational power the CNN network was chosen over Inception (inception network consumes large amount of resources).

the input to the network is in batches with each image in batch being of 100x100 in RGB mode. Therefore, the input becomes a 4-D tensor of shape (batch size, height, width, channels) the CNN involves a couple of Convolution Layers, Max Pooling Layers which reduce the height and width and increases the number of channels of the tensor. After flattening the tensor, dense layers were applied with Dropout till dimensions were further reduced. In the end Soft max function was used.

L2 regularization was applied on every applicable layer to prevent overfitting.

If anyone wants to try and run the project in their own pc, please make sure to correct the path to train and test set.