ML-Algos hyperparameters:

SVM - C=10, gamma=10 for PCA on flattened layer + C=10, gamma = 0.0001 for fully connected layer found based on multiple gridsearches

Decision Tree - all parameters are as per scikitlearn defaults

Random Forest - multiple forest sizes are tried out in combination with crossentropy and gini for classification and the best turned out to be 100 with gini entropy

PCA - correct reshape size is taken in accordance with 90-95% variance cumulative sum

XGBOOST- binary logistic objective function with 100 estimators; loss->logloss

MLP- maximum 3000 iterations with early stopping if loss didn't improve

PCA # of components:

CNN1 - 3500

CNN2 - 4000

CNN3 - 3500

VGG16 - 6000

Alexnet - 4500

CNN4 - 5000

CNN5 - 5000

CNN6 - 3000

RESNET152 - 5000

Test-Train Split- 80:20