400X			
Model	Feature	Technique	Accuracy
DL	Xception	LSTM	0.92
HF + ML	LBP + LPQ	Linear SVM	0.8549
DL		ResNet 152	0.8351
HF + ML	LBP + LPQ + GLCM	Linear SVM	0.8335
DL + ML (TL)	VGG 19 + RESNET 152	SVM	0.8305
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	SVM	0.829
HF + ML	LBP + LPQ	SVM	0.829
HF + ML	LBP + LPQ	Gradient Boosting	0.8152
HF + ML	LBP + LPQ + GLCM	Gradient Boosting	0.8152
DL + ML	VGG 19	Random Forest	0.8122
DL + ML	VGG 19	Extremely Trees	0.8106
DL + ML	VGG 19	SVM	0.8106
HF + ML	LBP + LPQ + GLCM	SVM	0.8106
HF + ML	LBP	SVM	0.8076
HF + ML	LBP	Linear SVM	0.8061
HF + ML	LBP + LPQ	Adaboost	0.7984
HF + ML	LBP + LPQ + GLCM	Adaboost	0.7954
DL + ML (TL)	VGG 19 + RESNET 152	Adaboost	0.7923
DL + ML (TL)	VGG 19 + RESNET 152	Gradient Boosting	0.7877
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Adaboost	0.7801
HF + ML	LPQ	Gradient Boosting	0.777
HF + ML	LBP + LPQ + GLCM	Random Forest	0.777
HF + ML	LPQ	Adaboost	0.7755
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Gradient Boosting	0.774
HF + ML	LPQ	Linear SVM	0.774
DL + ML	VGG 19	SGD	0.7725
DL + ML	VGG 19	Adaboost	0.7725
DL + ML	VGG 19	Gradient Boosting	0.7725
DL + ML (TL)	VGG 19 + RESNET 152	Random Forest	0.7725
DL + ML	VGG 19	Linear SVM	0.7709
DL + ML (TL)	VGG 19 + RESNET 152	Linear SVM	0.7709
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Linear SVM	0.7709
HF + ML	LBP	Random Forest	0.7709
HF + ML	LBP	Extremely Trees	0.7664
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Random Forest	0.7648
HF + ML	LBP	Gradient Boosting	0.7618
DL + ML (FT)	VGG 19 + RESNET 152	SGD	0.7603
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Extremely Trees	0.7587
HF + ML	LBP	Adaboost	0.7587
DL + ML (TL)	VGG 19 + RESNET 152	Extremely Trees	0.7572
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	SGD	0.7572
HF + ML	LBP + LPQ	Random Forest	0.7557
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Linear SVM	0.7541
HF + ML	LBP + LPQ + GLCM	Extremely Trees	0.7496
DL + ML (FT)	VGG 19 + RESNET 152	Linear SVM	0.748
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Random Forest	0.748
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Extremely Trees	0.745
DL + ML (FT)	VGG 19	Random Forest	0.7419
DL + ML (FT)	VGG 19 + RESNET 152	Gradient Boosting	0.7404
DL + ML (FT)	VGG 19 + RESNET 152	Random Forest	0.7404
HF + ML	LPQ	Random Forest	0.7389
DL + ML	VGG 19	KNN	0.7374
DL + ML (TL)	VGG 19 + RESNET 152	KNN	0.7374
DL + ML (TL)	VGG 19 + RESNET 152	KNN	0.7374
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	KNN	0.7374
DL + ML (FT)	VGG 19 + RESNET 152	Extremely Trees	0.7374
HF + ML	LBP + LPQ	KNN	0.7358
HF + ML	Haralick	SVM	0.7328
HF + ML	LPQ	KNN	0.7282
DL + ML (FT)	VGG 19 + RESNET 152	Adaboost	0.7251
HF + ML	Haralick	Linear SVM	0.7251
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Gradient Boosting	0.7236
HF + ML	LBP	Decision Tree	0.7236
HF + ML	LBP + LPQ	Extremely Trees	0.7236
DL + ML (FT)	VGG 19	SVM	0.7221
DL + ML (FT)	VGG 19 + RESNET 152	SVM	0.7221
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Adaboost	0.7221
DL + ML (FT)	VGG 19	Extremely Trees	0.7206
DL + ML (FT)	VGG 19	Linear SVM	0.719
DL + ML (TL)	VGG 19 + RESNET 152	SGD	0.716
DL + ML (FT)	RESNET 152	Linear SVM	0.7129
HF + ML	LBP	KNN	0.7114
HF + ML	LPQ	Extremely Trees	0.7114
HF + ML	LBP + LPQ	Decision Tree	0.7099
HF + ML	LPQ	SVM	0.7083
HF + ML	LBP + LPQ + GLCM	Decision Tree	0.7038
DL + ML (FT)	VGG 19	Gradient Boosting	0.7022
HF + ML	LBP + LPQ	SGD	0.7022
DL + ML (TL)	VGG 19 + RESNET 152	Decision Tree	0.6992
DL + ML (FT)	VGG 19	SGD	0.6977
DL + ML (TL)	RESNET 152	Random Forest	0.6961

400X			
Model	Feature	Technique	AUC
DL		ResNet 152	1
HF + ML	LBP + LPQ	Linear SVM	0.92
DL	Xception	LSTM	0.92
HF + ML	LBP + LPQ	SVM	0.91
HF + ML	LBP + LPQ + GLCM	Gradient Boosting	0.9
HF + ML	LBP + LPQ + GLCM	Linear SVM	0.9
HF + ML	LBP + LPQ + GLCM	SVM	0.9
DL + ML	VGG 19	Random Forest	0.89
DL + ML	VGG 19	Extremely Trees	0.89
DL + ML (TL)	VGG 19 + RESNET 152	SVM	0.89
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	SVM	0.89
HF + ML	LBP + LPQ	Gradient Boosting	0.89
DL + ML	VGG 19	SVM	0.88
HF + ML	LBP	Linear SVM	0.88
HF + ML	LBP	SVM	0.88
HF + ML	LBP + LPQ	Adaboost	0.88
HF + ML	LBP + LPQ + GLCM	Adaboost	0.88
DL + ML	VGG 19	Linear SVM	0.85
DL + ML (TL)	VGG 19 + RESNET 152	Adaboost	0.85
DL + ML (TL)	VGG 19 + RESNET 152	Gradient Boosting	0.85
DL + ML (TL)	VGG 19 + RESNET 152	Linear SVM	0.85
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Linear SVM	0.85
HF + ML	LBP	Random Forest	0.85
HF + ML	LBP	Extremely Trees	0.85
DL + ML	VGG 19	Adaboost	0.84
DL + ML	VGG 19	Gradient Boosting	0.84
DL + ML (TL)	VGG 19 + RESNET 152	Random Forest	0.84
DL + ML (TL)	VGG 19 + RESNET 152	Extremely Trees	0.84
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Adaboost	0.84
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Random Forest	0.84
HF + ML	LBP	Adaboost	0.84
HF + ML	LBP	Gradient Boosting	0.84
HF + ML	LPQ	Gradient Boosting	0.84
HF + ML	LPQ	Linear SVM	0.84
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Gradient Boosting	0.83
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Extremely Trees	0.83
HF + ML	LBP + LPQ	Random Forest	0.83
HF + ML	LBP + LPQ + GLCM	Random Forest	0.83
DL + ML (FT)	VGG 19 + RESNET 152	Linear SVM	0.82
HF + ML	LPQ	Adaboost	0.82
HF + ML	LPQ	SVM	0.82
HF + ML	LBP + LPQ	Extremely Trees	0.82
HF + ML	LBP + LPQ + GLCM	Extremely Trees	0.82
HF + ML	LBP + LPQ	SGD	0.81
DL + ML	VGG 19	SGD	0.8
DL + ML	VGG 19	Naive Bayes	0.8
DL + ML (FT)	VGG 19 + RESNET 152	Random Forest	0.8
DL + ML (FT)	VGG 19 + RESNET 152	Extremely Trees	0.8
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Random Forest	0.8
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Extremely Trees	0.8
HF + ML	LPQ	SGD	0.8
HF + ML	LPQ	Random Forest	0.8
DL + ML (TL)	VGG 19 + RESNET 152	Naive Bayes	0.79
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	SGD	0.79
DL + ML (FT)	VGG 19	Linear SVM	0.79
DL + ML (FT)	VGG 19	SVM	0.79
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Linear SVM	0.79
HF + ML	LPQ	Extremely Trees	0.79
DL + ML	VGG 19	KNN	0.78
DL + ML (TL)	VGG 19 + RESNET 152	KNN	0.78
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	KNN	0.78
DL + ML (FT)	VGG 19	SGD	0.78
DL + ML (FT)	VGG 19	Random Forest	0.78
DL + ML (FT)	VGG 19 + RESNET 152	Gradient Boosting	0.78
DL + ML (TL)	RESNET 152	Linear SVM	0.77
DL + ML (TL)	VGG 19 + RESNET 152	SGD	0.77
DL + ML (FT)	VGG 19	Adaboost	0.77
DL + ML (FT)	VGG 19	Gradient Boosting	0.77
DL + ML (FT)	VGG 19	Extremely Trees	0.77
DL + ML (FT)	VGG 19 + RESNET 152	SVM	0.77
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Gradient Boosting	0.77
HF + ML	LBP + LPQ	KNN	0.77
HF + ML	LBP + LPQ + GLCM	SGD	0.77
DL + ML (TL)	RESNET 152	Adaboost	0.76
DL + ML (FT)	VGG 19 + RESNET 152	Adaboost	0.76
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Adaboost	0.76
HF + ML	Haralick	SVM	0.76
HF + ML	LBP	KNN	0.76
HF + ML	LBP	Naive Bayes	0.76
DL + ML (TL)	RESNET 152	Gradient Boosting	0.75

DL + ML (TL)	RESNET 152	Linear SVM	0.6946
DL + ML (TL)	VGG 19 + RESNET 152	Naive Bayes	0.6946
DL + ML (FT)	VGG 19	Adaboost	0.6946
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Naive Bayes	0.693
DL + ML	VGG 19	Decision Tree	0.6916
DL + ML (TL)	RESNET 152	Adaboost	0.69
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Decision Tree	0.69
DL + ML (FT)	RESNET 152	Extremely Trees	0.69
DL + ML (TL)	RESNET 152	Extremely Trees	0.687
HF + ML	LPQ	Decision Tree	0.687
DL + ML (TL)	RESNET 152	Gradient Boosting	0.6824
DL + ML (FT)	VGG 19 + RESNET 152	Decision Tree	0.6824
DL + ML	VGG 19	Naive Bayes	0.6809
HF + ML	LBP	SGD	0.6778
DL + ML (FT)	VGG 19 + RESNET 152	Naive Bayes	0.6732
DL + ML (FT)	RESNET 152	Random Forest	0.6702
DL + ML (TL)	RESNET 152	SVM	0.6687
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Naive Bayes	0.6671
DL + ML (FT)	VGG 19	Naive Bayes	0.6656
DL + ML (FT)	RESNET 152	SVM	0.6641
DL + ML (FT)	VGG 19	KNN	0.661
DL + ML (TL)	RESNET 152	KNN	0.6549
HF + ML	LBP + LPQ + GLCM	Naive Bayes	0.6534
DL + ML (TL)	RESNET 152	Decision Tree	0.6488
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Decision Tree	0.6488
DL + ML (FT)	RESNET 152	Adaboost	0.6458
HF + ML	HOG	Extremely Trees	0.6458
HF + ML	Haralick	Gradient Boosting	0.6458
HF + ML	Haralick	Random Forest	0.6427
DL + ML (FT)	RESNET 152	SGD	0.6396
HF + ML	LBP + LPQ	Naive Bayes	0.6396
DL + ML (TL)	IV3	Linear SVM	0.6381
DL + ML (TL)	IV3	SVM	0.6381
DL + ML (FT)	IV3	SVM	0.6381
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	SVM	0.6381
HF + ML	HOG	SVM	0.6381
HF + ML	SIFT	Linear SVM	0.6381
HF + ML	SIFT	SVM	0.6381
HF + ML	LPQ	SGD	0.6381
HF + ML	Haralick	Extremely Trees	0.6369
DL + ML (FT)	RESNET 152	Naive Bayes	0.6335
HF + ML	Haralick	Adaboost	0.6335
DL + ML (FT)	VGG 19 + RESNET 152	KNN	0.632
DL + ML (TL)	RESNET 152	Naive Bayes	0.629
DL + ML (FT)	VGG 19	Decision Tree	0.629
HF + ML	HOG	Random Forest	0.629
DL + ML (FT)	RESNET 152	Gradient Boosting	0.6274
HF + ML	LPQ	Naive Bayes	0.6213
DL + ML (TL)	RESNET 152	SGD	0.6106
HF + ML	HOG	SGD	0.6091
HF + ML	LBP + LPQ + GLCM	KNN	0.6091
DL + ML (FT)	RESNET 152	Decision Tree	0.6061
DL + ML (FT)	RESNET 152	KNN	0.6045
HF + ML	SIFT	Gradient Boosting	0.6
HF + ML	HOG	Gradient Boosting	0.5954
HF + ML	HOG	Adaboost	0.5908
HF + ML	HOG	Linear SVM	0.5893
HF + ML	HOG	Naive Bayes	0.5877
HF + ML	Haralick	KNN	0.5877
HF + ML	SIFT	KNN	0.5832
HF + ML	SIFT	Extremely Trees	0.5832
HF + ML	SIFT	Decision Tree	0.5786
HF + ML	SIFT	Random Forest	0.574
HF + ML	LBP	Naive Bayes	0.5725
HF + ML	Haralick	Decision Tree	0.5694
HF + ML	HOG	Decision Tree	0.5648
HF + ML	SIFT	SGD	0.5648
HF + ML	SIFT	Adaboost	0.5648
DL + ML (TL)	IV3	Extremely Trees	0.5618
DL + ML (FT)	IV3	Decision Tree	0.5541
DL + ML (TL)	IV3	Random Forest	0.5511
HF + ML	SIFT	Naive Bayes	0.548
DL + ML (FT)	IV3	Random Forest	0.5419
DL + ML (TL)	IV3	SGD	0.5328
DL + ML (TL)	IV3	Decision Tree	0.5297
DL + ML (TL)	IV3	Gradient Boosting	0.5282
DL + ML (FT)	IV3	Extremely Trees	0.5282
HF + ML	LBP + LPQ + GLCM	SGD	0.5267
DL + ML (FT)	RESNET 152	KNN	0.5251
DL + ML (FT)	IV3	Linear SVM	0.5251
DL + ML (FT)	IV3	Gradient Boosting	0.5236
DL + ML (FT)	IV3	Adaboost	0.519

DL + ML (TL)	RESNET 152	Random Forest	0.75
DL + ML (TL)	RESNET 152	Extremely Trees	0.75
DL + ML (FT)	RESNET 152	Linear SVM	0.75
HF + ML	LPQ	KNN	0.75
DL + ML (TL)	RESNET 152	SGD	0.74
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Naive Bayes	0.74
DL + ML (FT)	RESNET 152	Random Forest	0.74
HF + ML	Haralick	Linear SVM	0.74
HF + ML	LBP	SGD	0.74
DL + ML (FT)	RESNET 152	Extremely Trees	0.73
DL + ML (TL)	RESNET 152	SVM	0.72
HF + ML	LBP	Decision Tree	0.72
HF + ML	Haralick	SGD	0.71
HF + ML	Haralick	Naive Bayes	0.71
DL + ML (TL)	RESNET 152	Naive Bayes	0.7
DL + ML (TL)	VGG 19 + RESNET 152	Decision Tree	0.7
DL + ML (FT)	VGG 19	KNN	0.7
DL + ML (FT)	RESNET 152	Gradient Boosting	0.7
HF + ML	HOG	Naive Bayes	0.7
DL + ML	VGG 19	Decision Tree	0.69
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Decision Tree	0.69
HF + ML	HOG	Random Forest	0.69
HF + ML	HOG	Extremely Trees	0.69
DL + ML (TL)	RESNET 152	KNN	0.68
DL + ML (FT)	RESNET 152	Adaboost	0.68
DL + ML (FT)	RESNET 152	SVM	0.68
HF + ML	Haralick	Gradient Boosting	0.68
HF + ML	Haralick	Extremely Trees	0.68
HF + ML	LBP + LPQ	Decision Tree	0.67
HF + ML	LBP + LPQ + GLCM	Decision Tree	0.67
DL + ML (FT)	VGG 19 + RESNET 152	Decision Tree	0.66
HF + ML	Haralick	Adaboost	0.66
HF + ML	Haralick	Random Forest	0.66
DL + ML (FT)	VGG 19	Decision Tree	0.65
DL + ML (FT)	VGG 19 + RESNET 152	KNN	0.65
HF + ML	HOG	Linear SVM	0.65
HF + ML	HOG	SVM	0.64
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Decision Tree	0.63
HF + ML	HOG	Gradient Boosting	0.63
HF + ML	LPQ	Decision Tree	0.63
HF + ML	LBP + LPQ + GLCM	KNN	0.63
DL + ML (TL)	RESNET 152	Decision Tree	0.62
HF + ML	HOG	Adaboost	0.62
DL + ML (FT)	RESNET 152	KNN	0.61
DL + ML (FT)	RESNET 152	Naive Bayes	0.61
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Naive Bayes	0.61
HF + ML	HOG	SGD	0.61
HF + ML	SIFT	Gradient Boosting	0.61
HF + ML	SIFT	Extremely Trees	0.61
DL + ML (FT)	VGG 19	Naive Bayes	0.6
DL + ML (FT)	VGG 19 + RESNET 152	Naive Bayes	0.6
HF + ML	LBP + LPQ + GLCM	Naive Bayes	0.6
HF + ML	SIFT	KNN	0.59
HF + ML	Haralick	KNN	0.59
HF + ML	LBP + LPQ	Naive Bayes	0.59
HF + ML	HOG	KNN	0.58
HF + ML	SIFT	Random Forest	0.58
HF + ML	LPQ	Naive Bayes	0.58
DL + ML (FT)	RESNET 152	Decision Tree	0.57
DL + ML (TL)	IV3	Linear SVM	0.56
DL + ML (FT)	IV3	Random Forest	0.56
HF + ML	SIFT	SGD	0.56
HF + ML	SIFT	Naive Bayes	0.56
HF + ML	SIFT	Adaboost	0.56
HF + ML	SIFT	Linear SVM	0.56
HF + ML	SIFT	SVM	0.56
HF + ML	Haralick	Decision Tree	0.56
DL + ML (FT)	IV3	Gradient Boosting	0.55
DL + ML (FT)	IV3	Extremely Trees	0.55
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	SGD	0.55
DL + ML (TL)	IV3	Extremely Trees	0.54
DL + ML (FT)	IV3	KNN	0.54
DL + ML (FT)	IV3	Adaboost	0.54
HF + ML	HOG	Decision Tree	0.54
HF + ML	SIFT	Decision Tree	0.54
DL + ML (TL)	IV3	Random Forest	0.53
DL + ML (FT)	IV3	Decision Tree	0.53
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	SVM	0.53
DL + ML (FT)	RESNET 152	SGD	0.52
DL + ML (FT)	IV3	Linear SVM	0.52
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	KNN	0.52
DL + ML (FT)	IV3	SGD	0.51

DL + ML (FT)	VGG 19 + RESNET 152 + IV3	KNN	0.5083
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	SGD	0.5007
DL + ML (TL)	RESNET 152	KNN	0.4977
DL + ML (TL)	IV3	Adaboost	0.4839
DL + ML (FT)	IV3	SGD	0.4641
HF + ML	Haralick	SGD	0.4595
HF + ML	Haralick	Naive Bayes	0.4458
DL + ML (TL)	IV3	Naive Bayes	0.4427
HF + ML	HOG	KNN	0.3877
DL + ML (FT)	IV3	Naive Bayes	0.3832

DL + ML (TL)	IV3	Gradient Boosting	0.5
DL + ML (TL)	IV3	SVM	0.5
DL + ML (FT)	VGG 19 + RESNET 152	SGD	0.5
DL + ML (FT)	IV3	Naive Bayes	0.49
DL + ML (TL)	IV3	Decision Tree	0.48
DL + ML (FT)	IV3	SVM	0.47
DL + ML (TL)	IV3	KNN	0.46
DL + ML (TL)	IV3	Adaboost	0.45
DL + ML (TL)	IV3	Naive Bayes	0.44
DL + ML (TL)	IV3	SGD	0.41