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DL + ML (TL) IV3				
DL + ML (TL) IV3	DL + ML (TL)	IV3	Extremely Trees	63.3130846
DL + ML (TL) V3	DL + ML (TL)	IV3	Adaboost	63.3180005
DL + ML (TL) IV3	DL + ML (TL)	IV3	KNN	63.4519806
DL + ML (TL) RESNET 152 SGD	DL + ML (TL)	IV3	Linear SVM	63.6620036
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DL + ML (TL) RESNET 152	DL + ML (TL)	RESNET 152	Naive Bayes	74.6239344
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HF + ML SIFT Gradient Boosting 139.395007 HF + ML SIFT Random Forest 139.435389 HF + ML SIFT Extremely Trees 139.441087 HF + ML SIFT Adaboost 139.457503 HF + ML SIFT Linear SVM 139.603040 HF + ML SIFT KNN 140.306748 HF + ML LBP Decision Tree 143.389238 HF + ML LBP Naive Bayes 143.389294 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP KNN 143.433971 HF + ML LBP KNN 143.4323				
HF + ML SIFT Random Forest 139.435389 HF + ML SIFT Extremely Trees 139.441087 HF + ML SIFT Adaboost 139.457503 HF + ML SIFT Linear SVM 139.603040 HF + ML SIFT SVM 139.729403 HF + ML SIFT KNN 140.306748 HF + ML LBP Decision Tree 143.389238 HF + ML LBP Naive Bayes 143.389294 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43323			<u> </u>	
HF + ML SIFT Extremely Trees 139.441087 HF + ML SIFT Adaboost 139.457503 HF + ML SIFT Linear SVM 139.603040 HF + ML SIFT SVM 139.729403 HF + ML SIFT KNN 140.306748 HF + ML LBP Decision Tree 143.389238 HF + ML LBP Naive Bayes 143.389294 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML SIFT Adaboost 139.457503 HF + ML SIFT Linear SVM 139.603040 HF + ML SIFT SVM 139.729403 HF + ML SIFT KNN 140.306748 HF + ML LBP Decision Tree 143.389238 HF + ML LBP Naive Bayes 143.389294 HF + ML LBP SGD 143.389601 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML SIFT Linear SVM 139.603040 HF + ML SIFT SVM 139.729403 HF + ML SIFT KNN 140.306748 HF + ML LBP Decision Tree 143.389238 HF + ML LBP Naive Bayes 143.389294 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423			<u> </u>	
HF + ML SIFT SVM 139.729403 HF + ML SIFT KNN 140.306748 HF + ML LBP Decision Tree 143.389238 HF + ML LBP Naive Bayes 143.389294 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423			+	
HF + ML SIFT KNN 140.306748 HF + ML LBP Decision Tree 143.389238 HF + ML LBP Naive Bayes 143.389601 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML LBP Decision Tree 143.389238 HF + ML LBP Naive Bayes 143.389294 HF + ML LBP SGD 143.389601 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML LBP Naive Bayes 143.389294 HF + ML LBP SGD 143.389601 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML LBP SGD 143.389601 HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML LBP Gradient Boosting 143.390356 HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423			<u> </u>	
HF + ML LBP Linear SVM 143.407656 HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML LBP Adaboost 143.418376 HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423			 	
HF + ML LBP Random Forest 143.42387 HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML LBP Extremely Trees 143.431889 HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423				
HF + ML LBP SVM 143.433971 HF + ML LBP KNN 143.43423	HF + MI			
HF + ML LBP KNN 143.43423		ILRA		
	HF + ML		· · · · · · · · · · · · · · · · · · ·	
LOT.J47.177	HF + ML HF + ML	LBP	SVM	143.433971

	40X		
Model	Feature	Technique	GPU Time
HF + ML	Haralick	SGD	22.014562
HF + ML HF + ML	Haralick Haralick	Naive Bayes Decision Tree	22.014565 22.014762
HF + ML	Haralick	Gradient Boosting	22.014762
HF + ML	Haralick	Linear SVM	22.019804
HF + ML	Haralick	Adaboost	22.035865
HF + ML	Haralick	KNN	22.044454
HF + ML	Haralick	Extremely Trees	22.045911
HF + ML	Haralick	Random Forest	22.048565
HF + ML	Haralick	SVM	22.057565
HF + ML	HOG	SGD Decision Tree	42.608852
HF + ML HF + ML	HOG HOG	Gradient Boosting	42.612352 42.622237
HF + ML	HOG	Naive Bayes	42.629047
HF + ML	HOG	Random Forest	42.669741
HF + ML	HOG	Extremely Trees	42.697897
HF + ML	HOG	Adaboost	43.060957
DL + ML (TL)	IV3	SGD	44.4243668
DL + ML (TL)	IV3	Decision Tree	44.4244783
	IV3	Naive Bayes Gradient Boosting	44.4257905 44.4261133
DL + ML (TL)	IV3	Random Forest	44.4668422
DL + ML (TL)	IV3	Extremely Trees	44.4772949
	IV3	Adaboost	44.4795152
DL + ML (TL)	IV3	KNN	44.5470707
	IV3	Linear SVM	44.8396251
DL + ML (TL)	IV3	SVM	44.9628635
HF + ML	HOG	SVM	46.061957
HF + ML HF + ML	HOG HOG	Linear SVM KNN	46.262852 49.825909
DL + ML (TL)	RESNET 152	SGD	50.657991
DL + ML (TL)	RESNET 152	Decision Tree	50.658274
DL + ML (TL)	RESNET 152	Naive Bayes	50.6598499
DL + ML (TL)	RESNET 152	Gradient Boosting	50.6605329
DL + ML (TL)	RESNET 152	Random Forest	50.7064583
DL + ML (TL)	RESNET 152	Extremely Trees	50.718916
DL + ML (TL) DL + ML (TL)	RESNET 152 RESNET 152	Adaboost Linear SVM	50.7272289
	RESNET 152	SVM	50.8848801 51.0300788
DL + ML (TL)	RESNET 152	KNN	51.1526342
DL + ML (FT)	IV3	SGD	52.4752718
DL + ML (FT)	IV3	Decision Tree	52.4753995
	IV3	Naive Bayes	52.4771305
	IV3	Gradient Boosting	52.4779813
DL + ML (FT) DL + ML (FT)	IV3	Random Forest Extremely Trees	52.524928
DL + ML (FT)	IV3	Adaboost	52.5364879 52.5413023
	IV3	KNN	52.6707805
DL + ML (FT)	IV3	Linear SVM	52.6908275
DL + ML (FT)	IV3	SVM	52.9053607
DL + ML (FT)	RESNET 152	SGD	67.2366011
DL + ML (FT)	RESNET 152	Decision Tree	67.2367274
DL + ML (FT) DL + ML (FT)	RESNET 152	Naive Bayes Gradient Boosting	67.238307
DL + ML (FT)	RESNET 152 RESNET 152	Random Forest	67.2393185 67.2884074
DL + ML (FT)	RESNET 152	Extremely Trees	67.296964
	RESNET 152	Adaboost	67.2997586
DL + ML (FT)	RESNET 152	KNN	67.4171175
DL + ML (FT)	RESNET 152	Linear SVM	67.4637834
DL + ML (FT)	RESNET 152	SVM	67.6803358
HF + ML HF + ML	LPQ LPQ	SGD Decision Tree	89.1961301 89.196652
HF + ML	LPQ	Naive Bayes	89.196652
HF + ML	LPQ	Gradient Boosting	89.1986944
HF + ML	LPQ	Random Forest	89.231693
HF + ML	LPQ	Extremely Trees	89.2369245
HF + ML	LPQ	Adaboost	89.2594865
HF + ML	LPQ	Linear SVM	89.4202045
HF + ML HF + ML	LPQ	SVM	89.5956944
HF + ML	LPQ LBP	KNN Decision Tree	89.6521035 121.877688
HF + ML	LBP	Naive Bayes	121.877750
HF + ML	LBP	SGD	121.878002
HF + ML	LBP	Gradient Boosting	121.878702
HF + ML	LBP	Linear SVM	121.882812
HF + ML	LBP	Adaboost	121.898612
HF + ML	LBP	Random Forest	121.907711
HF + ML HF + ML	LBP	KNN Extremely Trees	121.917703 121.917822
HF + ML	LBP	SVM	121.917822
HF + ML	LBP + LPQ	SGD	211.073365

HF + ML	l	In	1 264 24266
	LBP + LPQ	Decision Tree	264.349669
HF + ML	LBP + LPQ	Naive Bayes	264.351833
HF + ML	LBP + LPQ	Gradient Boosting	264.351846
HF + ML	LBP + LPQ	Random Forest	264.385854
HF + ML	,		264.393777
	LBP + LPQ	Extremely Trees	-
HF + ML	LBP + LPQ	Adaboost	264.422003
HF + ML	LBP + LPQ	Linear SVM	264.508712
HF + ML	LBP + LPQ	SVM	264.735884
HF + ML	LBP + LPQ	KNN	264.767551
	·		
DL	Xception	LSTM	482.246409
HF + ML	Haralick	Decision Tree	528.329990
HF + ML	Haralick	SGD	528.330021
HF + ML	Haralick	Naive Bayes	528.330033
HF + ML	Haralick	Gradient Boosting	
			528.331124
HF + ML	Haralick	Adaboost	528.354130
HF + ML	Haralick	Linear SVM	528.356877
HF + ML	Haralick	KNN	528.364690
HF + ML	Haralick	Random Forest	528.368216
			+
HF + ML	Haralick	Extremely Trees	528.380074
HF + ML	Haralick	SVM	528.389451
HF + ML	LBP + LPQ + GLCM	SGD	792.679097
HF + ML	LBP + LPQ + GLCM	Decision Tree	792.679274
	·	+	+
HF + ML	LBP + LPQ + GLCM	Naive Bayes	792.681300
HF + ML	LBP + LPQ + GLCM	Gradient Boosting	792.681607
HF + ML	LBP + LPQ + GLCM	Random Forest	792.714568
HF + ML	LBP + LPQ + GLCM	Extremely Trees	792.722525
	·	•	
HF + ML	LBP + LPQ + GLCM	Adaboost	792.749908
HF + ML	LBP + LPQ + GLCM	Linear SVM	792.828665
HF + ML	LBP + LPQ + GLCM	KNN	793.069916
HF + ML	LBP + LPQ + GLCM	SVM	793.080465
DL + ML (FT)	VGG 19	SGD	855.696395
		1	
DL + ML (FT)	VGG 19	Decision Tree	855.696543
DL + ML (FT)	VGG 19	Naive Bayes	855.698908
DL + ML (FT)	VGG 19	Gradient Boosting	855.699528
DL + ML (FT)	VGG 19	Random Forest	855.745053
DL + ML (FT)	VGG 19	Extremely Trees	
		'	855.763953
DL + ML (FT)	VGG 19	Adaboost	855.770089
DL + ML (FT)	VGG 19	Linear SVM	855.825589
DL + ML (FT)	VGG 19	KNN	856.041138
DL + ML (FT)	VGG 19	SVM	856.194353
		-	+
DL + ML (FT)	VGG 19 + RESNET 152	SGD	946.922436
DL + ML (FT)	VGG 19 + RESNET 152	Decision Tree	946.923881
DL + ML (FT)	VGG 19 + RESNET 152	Gradient Boosting	946.925684
DL + ML (FT)	VGG 19 + RESNET 152	Naive Bayes	946.928638
DL + ML (FT)	VGG 19 + RESNET 152	Random Forest	946.971081
		+	
DL + ML (FT)	VGG 19 + RESNET 152	Extremely Trees	946.989926
DL + ML (FT)	VGG 19 + RESNET 152	Adaboost	947.047074
DL + ML (FT)	VGG 19 + RESNET 152	Linear SVM	947.217077
DL + ML (FT)	VGG 19 + RESNET 152	KNN	947.454184
DL + ML (FT)	VGG 19 + RESNET 152	SVM	947.89905
		Decision Tree	
DL + ML (TL)	VGG 19	+	1018.3266
DL + ML (TL)	VGG 19	SGD	1018.32696
DL + ML (TL)	VGG 19	Gradient Boosting	1018.32962
DL + ML (TL)	VGG 19	Naive Bayes	1018.33061
DL + ML (TL)	VGG 19	Random Forest	1018.38221
DL + ML (TL)			
	VGG 19	Extremely Trees	1018.3918
DL + ML (TL)	VGG 19	Adaboost	1018.4042
DL + ML (TL)			
DL + IVIL (IL)	VGG 19	KNN	1018.44106
DL + ML (TL)			
DL + ML (TL)	VGG 19 VGG 19	KNN Linear SVM	1018.44106 1018.4822
DL + ML (TL) DL + ML (TL)	VGG 19 VGG 19 VGG 19	KNN Linear SVM SVM	1018.44106 1018.4822 1018.81031
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD	1018.44106 1018.4822 1018.81031 1024.54647
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree	1018.44106 1018.4822 1018.81031 1024.54647 1024.548
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD	1018.44106 1018.4822 1018.81031 1024.54647
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree	1018.44106 1018.4822 1018.81031 1024.54647 1024.548
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (FT) DL + ML (FT) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree Naive Bayes	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.61376 1024.63456 1024.6499 1024.87 1025.53124
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923
DL + ML (TL) DL + ML (TL) DL + ML (FT)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843 1092.95111
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL) DL + ML (TL) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 VGG 19 + RESNET 152	KNN Linear SVM SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3	KNN Linear SVM SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843 1092.95111
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL) DL + ML (TL) DL + ML (TL) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843 1092.95111 1092.95178 1092.95311
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1025.53124 1026.28923 1092.94843 1092.95111 1092.95311 1092.99268
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843 1092.95111 1092.95178 1092.95311 1092.99268 1093.01617
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.61376 1024.63456 1024.63456 1024.6499 1025.53124 1026.28923 1092.94843 1092.95111 1092.95178 1092.95311 1092.99268 1093.01617 1093.02568
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843 1092.95111 1092.95178 1092.95311 1092.99268 1093.01617
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM	1018.44106 1018.4822 1018.81031 1024.54647 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1025.53124 1026.28923 1092.94843 1092.95111 1092.95178 1092.95311 1092.99268 1093.01617 1093.02568 1093.39873
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM SOD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM SVM	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1025.53124 1025.53124 1092.94843 1092.95111 1092.95178 1092.95311 1092.99268 1093.01617 1093.02568 1093.39873 1093.70176
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM SVM	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843 1092.95111 1092.95178 1092.95311 1092.99268 1093.01617 1093.02568 1093.70176 1095.27368
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM SVM SVM KNN SSGD	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.61376 1024.63456 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843 1092.95111 1092.95178 1092.95311 1092.99268 1093.01617 1093.02568 1093.39873 1095.27368 1156.20618
DL + ML (TL) DL + ML (TL) DL + ML (FT) DL + ML (TL)	VGG 19 VGG 19 VGG 19 VGG 19 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152	KNN Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM SGD Gradient Boosting Decision Tree Naive Bayes Random Forest Extremely Trees Adaboost Linear SVM SVM	1018.44106 1018.4822 1018.81031 1024.54647 1024.548 1024.55287 1024.55502 1024.61376 1024.63456 1024.6499 1024.87 1025.53124 1026.28923 1092.94843 1092.95111 1092.95178 1092.95311 1092.99268 1093.01617 1093.02568 1093.70176 1095.27368

HF + ML	LBP + LPQ	Decision Tree	211.073788
HF + ML	LBP + LPQ	Gradient Boosting	211.075470
HF + ML	LBP + LPQ	Naive Bayes	211.075694
HF + ML	LBP + LPQ	Extremely Trees	211.096065
HF + ML	LBP + LPQ	Random Forest	211.101858
HF + ML	LBP + LPQ	Adaboost	211.141858
HF + ML	LBP + LPQ	Linear SVM	211.218551
HF + ML	LBP + LPQ	SVM	211.418558
HF + ML	LBP + LPQ	KNN	211.454470
HF + ML	LBP + LPQ + GLCM	SGD	233.087974
HF + ML	LBP + LPQ + GLCM	Decision Tree	233.088580
HF + ML	LBP + LPQ + GLCM	Gradient Boosting	233.089415
HF + ML HF + ML	LBP + LPQ + GLCM	Naive Bayes	233.090324
HF + ML	LBP + LPQ + GLCM LBP + LPQ + GLCM	Extremely Trees Random Forest	233.110380 233.115774
HF + ML	LBP + LPQ + GLCM	Adaboost	233.113774
HF + ML	LBP + LPQ + GLCM	Linear SVM	233.231415
HF + ML	LBP + LPQ + GLCM	SVM	233.393805
HF + ML	LBP + LPQ + GLCM	KNN	233.465715
DL	Xception	LSTM	470.745466
DL + ML (FT)	VGG 19	SGD	528.772925
DL + ML (FT)	VGG 19	Decision Tree	528.773104
DL + ML (FT)	VGG 19	Naive Bayes	528.774974
DL + ML (FT)	VGG 19	Gradient Boosting	528.775653
DL + ML (FT)	VGG 19	Random Forest	528.818747
DL + ML (FT)	VGG 19	Extremely Trees	528.829247
DL + ML (FT)	VGG 19	Adaboost	528.837234
DL + ML (FT)	VGG 19	Linear SVM	528.919538
DL + ML (FT)	VGG 19	KNN	529.040095
DL + ML (FT)	VGG 19	SVM	529.19874
DL + ML (FT)	VGG 19 + RESNET 152	SGD	596.009066
DL + ML (FT)	VGG 19 + RESNET 152	Decision Tree	596.009641
	VGG 19 + RESNET 152	Naive Bayes	596.012235
. ,	VGG 19 + RESNET 152	Gradient Boosting	596.012536
DL + ML (FT)	VGG 19 + RESNET 152	Random Forest	596.055229
DL + ML (FT)	VGG 19 + RESNET 152	Extremely Trees	596.06447
DL + ML (FT)	VGG 19 + RESNET 152	Adaboost	596.109328
DL + ML (FT)	VGG 19 + RESNET 152	Linear SVM	596.261376
DL + ML (FT)	VGG 19 + RESNET 152	KNN	596.496106
DL + ML (FT)	VGG 19 + RESNET 152	SVM	596.879083
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	SGD	648.484062
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Decision Tree	648.48495
			—
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Naive Bayes	648.489191
DL + ML (FT) DL + ML (FT)	VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	Naive Bayes Gradient Boosting	648.489191 648.489853
DL + ML (FT) DL + ML (FT) DL + ML (FT)	VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	Naive Bayes Gradient Boosting Random Forest	648.489191 648.489853 648.528275
DL + ML (FT) DL + ML (FT) DL + ML (FT) DL + ML (FT)	VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	Naive Bayes Gradient Boosting Random Forest Extremely Trees	648.489191 648.489853 648.528275 648.535981
DL + ML (FT)	VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost	648.489191 648.489853 648.528275 648.535981 648.616793
DL + ML (FT) DL + ML (FT) DL + ML (FT) DL + ML (FT)	VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	Naive Bayes Gradient Boosting Random Forest Extremely Trees	648.489191 648.489853 648.528275 648.535981
DL + ML (FT)	VGG 19 + RESNET 152 + IV3 VGG 19 + RESNET 152 + IV3	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055
DL + ML (FT)	VGG 19 + RESNET 152 + IV3	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267
DL + ML (FT) HF + ML HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269
DL + ML (FT) HF + ML HF + ML HF + ML HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258
DL + ML (FT) HF + ML HF + ML HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.561919 717.594358 717.625458 717.760267 717.871028
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM KNN	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM SVM SVM SVM SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.299594
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM SVM SVM SVM SVM SVM KNN SGD Decision Tree Naive Bayes	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.299594 779.301189
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM Extremely Trees Adaboost Linear SVM SVM SVM GRAD Decision Tree Naive Bayes Gradient Boosting	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.301189 779.301189
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM SVM SVM SVM SVM SVM KNN SGD Decision Tree Naive Bayes	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.299594 779.301189
DL + ML (FT) HF + ML	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM STON Extremely Trees Adaboost Company Trees Adaboost Extremely Trees Adaboost Company Trees	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552269 717.552269 717.561919 717.561919 717.60267 717.871028 718.195458 779.299445 779.299594 779.301189 779.301831 779.344871 779.358412
DL + ML (FT) HF + ML H	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SOD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.561919 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.299594 779.301189 779.301831 779.344871
DL + ML (FT) HF + ML H	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM Extremely Trees Adaboost Compare SVM SVM Compare SVM SVM Extremely Trees Adaboost Compare SVM SVM Extremely Trees Compare SVM SVM Extremely Trees Compare SVM SVM Extremely Trees Compare SVM Extremely Trees	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.391189 779.301189 779.301831 779.344871 779.358412 779.3655323
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM Extremely Trees Adaboost SVM SVM Extremely Trees Adaboost Linear SVM SVM Extremely Trees Adaboost Linear SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.299594 779.301189 779.301831 779.344871 779.358412 779.365323 779.399631
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM Extremely Trees Adaboost SVM Extremely Trees Adaboost Linear SVM Extremely Trees Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM Extremely Trees Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550269 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.299594 779.301189 779.301891 779.344871 779.358412 779.365323 779.399631 779.679924
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM Extremely Trees Adaboost Linear SVM SVM Exno Extremely Tree Naive Bayes Gradient Boosting Extremely Trees Adaboost Linear SVM SVM Exno Extremely Trees Adaboost Linear SVM Extremely Trees Adaboost Linear SVM SVM Extremely Trees Adaboost Linear SVM SVM Extremely Trees	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299445 779.301189 779.301189 779.301831 779.344871 779.358412 779.365323 779.399631 779.679924 780.119499
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM Extremely Trees Adaboost Linear SVM SVM Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Adaboost Linear SVM SVM KNN SGD Decision Tree	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552258 717.561919 717.594358 717.760267 717.871028 718.195458 779.299445 779.301189 779.301831 779.344871 779.358412 779.365323 779.399631 779.679924 780.119499 829.956808
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299594 779.301831 779.301831 779.344871 779.358412 779.365323 779.399631 779.679924 780.119499 829.956808 829.957264
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552258 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299544 779.301831 779.301831 779.344871 779.358412 779.365323 779.399631 779.679924 780.119499 829.956808 829.957264 829.959579 829.960309 829.989666
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM SVM SVM Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550269 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299544 779.301189 779.301891 779.301891 779.304871 779.358412 779.358412 779.365323 779.399631 779.679924 780.119499 829.956808 829.957264 829.959579 829.960309 829.989666 829.998758
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550269 717.550269 717.552269 717.552269 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299594 779.301189 779.301891 779.344871 779.344871 779.358412 779.365323 779.399631 779.679924 780.119499 829.956808 829.957264 829.959579 829.960309 829.989666 829.988758 830.038974
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552258 717.561919 717.594358 717.760267 717.871028 718.195458 779.299544 779.301831 779.301831 779.344871 779.358412 779.365323 779.399631 779.399631 779.679924 780.119499 829.956808 829.957264 829.959579 829.960309 829.989666 829.98758 830.038974 830.185481
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM SVM SVM SVM SVM Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM Extremely Trees Adaboost Linear SVM SVM Extremely Trees Adaboost Linear SVM SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.561919 717.561919 717.594358 717.625458 717.760267 717.871028 718.195458 779.299544 779.301831 779.301831 779.344871 779.358412 779.365323 779.399631 779.3799631 779.679924 780.119499 829.956808 829.957264 829.959579 829.960309 829.989666 829.98758 830.038974 830.185481 830.563787
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SVM SVM SVM SVM SVM SVM Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM Extremely Trees Adaboost Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550269 717.550269 717.552258 717.552269 717.561919 717.594358 717.625458 717.625458 717.760267 717.871028 718.195458 779.299445 779.399594 779.30189 779.30189 779.30189 779.30189 779.30189 779.304871 779.358412 779.365323 779.399631 779.36924 780.119499 829.956808 829.957264 829.957264 829.959579 829.960309 829.98056 829.98758 830.038974 830.185481 830.563787
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550267 717.550269 717.552258 717.552258 717.561919 717.594358 717.760267 717.871028 718.195458 779.299445 779.301189 779.301189 779.301831 779.344871 779.358412 779.365323 779.399631 779.365323 779.399631 779.679924 780.119499 829.956808 829.957264 829.9579 829.960309 829.989666 829.98758 830.038974 830.185481 830.563787 831.544629 874.380528
DL + ML (FT) HF + ML DL + ML (TL)	VGG 19 + RESNET 152 + IV3 SIFT SIFT SIFT SIFT SIFT SIFT SIFT SIFT	Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM KNN SVM SVM SVM SVM SVM SVM SVM Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM Extremely Trees Adaboost Linear SVM SVM SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM KNN SGD Decision Tree Naive Bayes Gradient Boosting Random Forest Extremely Trees Adaboost Linear SVM SVM	648.489191 648.489853 648.528275 648.535981 648.616793 648.79019 649.241055 649.762156 717.550269 717.550269 717.552269 717.552269 717.561919 717.594358 717.625458 717.625458 717.760267 717.871028 718.195458 779.299445 779.399594 779.301189 779.301891 779.344871 779.358412 779.365323 779.399631 779.369924 780.119499 829.956808 829.957264 829.957264 829.959579 829.960309 829.98758 830.038974 830.185481 830.563787

DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Gradient Boosting	1156.21114
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Random Forest	1156.24687
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Extremely Trees	1156.26252
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Adaboost	1156.30514
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Linear SVM	1156.58255
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	SVM	1157.00454
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	KNN	1159.08987
DL		ResNet 152	29352.1486

DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Gradient Boosting	874.384952
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Random Forest	874.414454
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Extremely Trees	874.430089
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Adaboost	874.495166
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	Linear SVM	874.713991
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	SVM	875.13043
DL + ML (TL)	VGG 19 + RESNET 152 + IV3	KNN	876.759505
DL		ResNet 152	9051.44