1 Classification Results

IIIT-CFW

	Method	Accuracy	Precision	Recall	F1 Score
0	PCA + SVM	0.547619	0.587471	0.546260	0.549748
1	Kernel PCA + SVM	0.541667	0.578594	0.543806	0.546358
2	LDA + SVM	0.910714	0.911505	0.912389	0.909830
3	Kernel LDA + SVM	0.964286	0.970833	0.965852	0.967000
4	VGG Features + SVM	0.690476	0.698431	0.636413	0.646773
5	Resnet Features + SVM	0.982143	0.984707	0.978896	0.981410
6	Resnet + VGG Features + SVM	0.982143	0.983562	0.971320	0.976185
7	KPCA + KLDA + SVM	0.964286	0.970833	0.965852	0.967000
8	All Features + SVM	0.988095	0.986478	0.988366	0.987060
9	PCA + MLP	0.559524	0.570862	0.542123	0.546401
10	Kernel PCA + MLP	0.488095	0.476627	0.491794	0.473021
11	LDA + MLP	0.904762	0.903081	0.906410	0.903896
12	Kernel LDA + MLP	0.970238	0.978652	0.969885	0.973774
13	VGG Features + MLP	0.613095	0.577736	0.566576	0.565998
14	Resnet Features + MLP	0.964286	0.965909	0.958765	0.961838
15	Resnet + VGG Features + MLP	0.976190	0.972073	0.972970	0.972366
16	KPCA + KLDA + MLP	0.970238	0.978652	0.969885	0.973774
17	All Features + MLP	0.988095	0.992417	0.988366	0.990194
18	PCA + DT	0.357143	0.352834	0.367308	0.349520
19	Kernel PCA + DT	0.369048	0.369887	0.381702	0.363383
20	LDA + DT	0.857143	0.851082	0.840925	0.844428
21	Kernel LDA + DT	0.970238	0.962097	0.976269	0.967724
22	VGG Features + DT	0.660714	0.624008	0.618587	0.619381
23	Resnet Features + DT	0.940476	0.940123	0.919695	0.927059
24	Resnet + VGG Features + DT	0.940476	0.943819	0.926324	0.932967
25	KPCA + KLDA + DT	0.970238	0.962097	0.976269	0.967724
26	All Features + DT	0.922619	0.903497	0.908710	0.903520
27	PCA + LR	0.517857	0.508960	0.516417	0.503208
28	Kernel PCA + LR	0.404762	0.299131	0.369063	0.317915
29	LDA + LR	0.904762	0.899636	0.904490	0.900305
30	Kernel LDA + LR	0.964286	0.966210	0.965852	0.965111
31	VGG Features + LR	0.702381	0.679689	0.656171	0.662002
32	Resnet Features + LR	0.976190	0.973217	0.974864	0.973951
33	Resnet + VGG Features + LR	0.982143	0.983562	0.971320	0.976185
34	KPCA + KLDA + LR	0.964286	0.966210	0.965852	0.965111
35	All Features + LR	0.988095	0.986478	0.988366	0.987060

IMFDB

	Method	Accuracy	Precision	Recall	F1 Score
0	PCA + SVM	0.77	0.768945	0.764704	0.764351
1	Kernel PCA + SVM	0.77	0.765873	0.764704	0.762070
2	LDA + SVM	0.95	0.940799	0.948718	0.942069
3	Kernel LDA + SVM	0.95	0.944143	0.956250	0.947368
4	VGG Features + SVM	0.94	0.947287	0.934655	0.939313
5	Resnet Features + SVM	0.94	0.937946	0.932051	0.932417

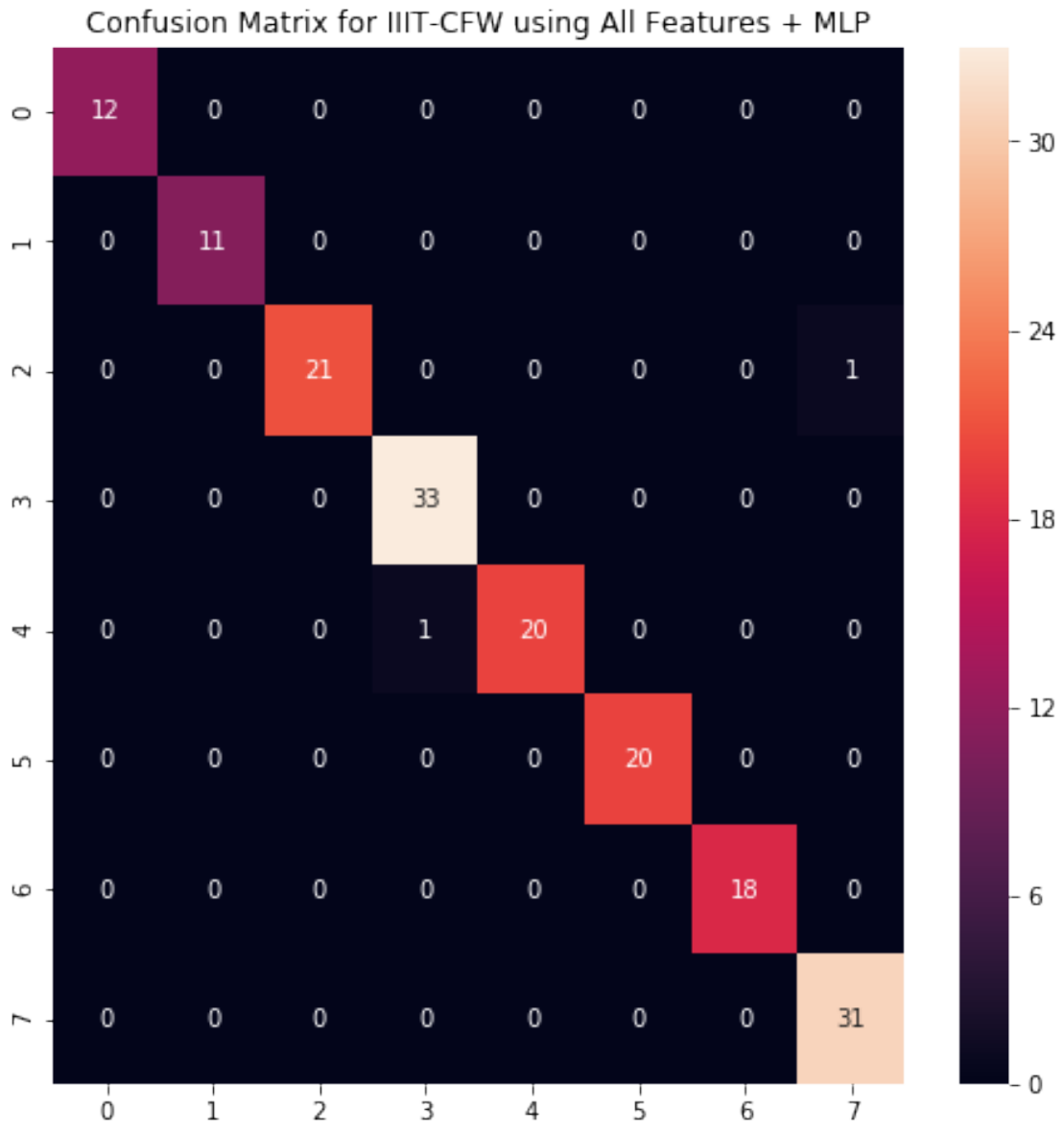
6	Resnet + VGG Features + SVM	0.97	0.966071	0.973437	0.967704
7	KPCA + KLDA + SVM	0.95	0.944143	0.956250	0.947368
8	All Features + SVM	0.99	0.992188	0.992188	0.991935
9	PCA + MLP	0.77	0.767053	0.776963	0.763249
10	Kernel PCA + MLP	0.75	0.751030	0.762139	0.751386
11	LDA + MLP	0.95	0.939410	0.946114	0.939624
12	Kernel LDA + MLP	0.95	0.953745	0.956771	0.953745
13	VGG Features + MLP	0.88	0.886275	0.881330	0.881616
14	Resnet Features + MLP	0.96	0.958019	0.956010	0.956353
15	Resnet + VGG Features + MLP	0.98	0.975000	0.981771	0.976644
16	KPCA + KLDA + MLP	0.95	0.954861	0.941667	0.946847
17	All Features + MLP	0.98	0.985294	0.983854	0.983845
18	PCA + DT	0.45	0.485176	0.466907	0.456760
19	Kernel PCA + DT	0.40	0.421533	0.407853	0.404365
20	LDA + DT	0.88	0.878337	0.877644	0.871423
21	Kernel LDA + DT	0.88	0.883063	0.870313	0.871396
22	VGG Features + DT	0.91	0.912118	0.901082	0.901820
23	Resnet Features + DT	0.92	0.939277	0.924239	0.927871
24	Resnet + VGG Features + DT	0.91	0.918030	0.915144	0.911691
25	KPCA + KLDA + DT	0.87	0.858631	0.865905	0.859753
26	All Features + DT	0.86	0.871726	0.874800	0.864582
27	PCA + LR	0.72	0.721295	0.736619	0.711573
28	Kernel PCA + LR	0.40	0.510376	0.453646	0.362852
29	LDA + LR	0.96	0.958097	0.964343	0.957463
30	Kernel LDA + LR	0.96	0.955941	0.964583	0.958830
31	VGG Features + LR	0.93	0.942079	0.933614	0.936483
32	Resnet Features + LR	0.95	0.947669	0.948197	0.946748
33	Resnet + VGG Features + LR	0.98	0.978299	0.983854	0.980272
34	KPCA + KLDA + LR	0.96	0.955941	0.964583	0.958830
35	All Features + LR	0.99	0.992188	0.992188	0.991935

Yale_face_database

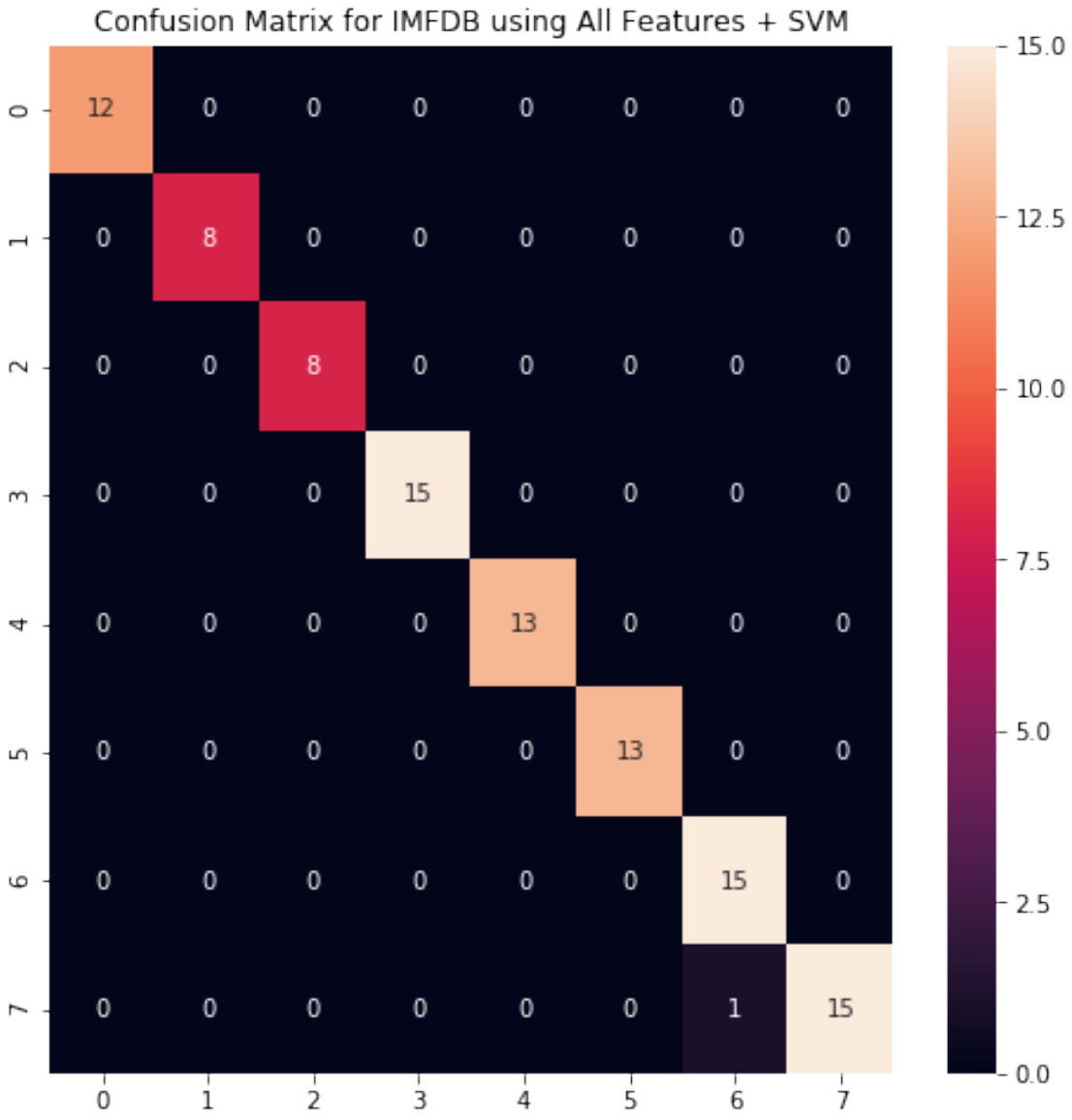
	Method	Accuracy	Precision	Recall	F1 Score
0	PCA + SVM	0.714286	0.754444	0.777778	0.720794
1	Kernel PCA + SVM	0.690476	0.715556	0.755556	0.685873
2	LDA + SVM	1.000000	1.000000	1.000000	1.000000
3	Kernel LDA + SVM	1.000000	1.000000	1.000000	1.000000
4	VGG Features + SVM	0.476190	0.507222	0.522222	0.445714
5	Resnet Features + SVM	0.976190	0.966667	0.977778	0.964444
6	Resnet + VGG Features + SVM	0.928571	0.966667	0.960000	0.949206
7	KPCA + KLDA + SVM	1.000000	1.000000	1.000000	1.000000
8	All Features + SVM	0.976190	0.983333	0.986667	0.983069
9	PCA + MLP	0.833333	0.838889	0.840000	0.795661
10	Kernel PCA + MLP	0.714286	0.751111	0.718889	0.681958
11	LDA + MLP	1.000000	1.000000	1.000000	1.000000
12	Kernel LDA + MLP	1.000000	1.000000	1.000000	1.000000
13	VGG Features + MLP	0.571429	0.497778	0.554444	0.489442
14	Resnet Features + MLP	0.976190	0.966667	0.977778	0.964444
15	Resnet + VGG Features + MLP	0.952381	0.961111	0.944444	0.941587

16	KPCA + KLDA + MLP	1.000000	1.000000	1.000000	1.000000
17	All Features + MLP	0.976190	0.966667	0.986667	0.970370
18	PCA + DT	0.523810	0.634444	0.607778	0.534762
19	Kernel PCA + DT	0.571429	0.603333	0.651111	0.595079
20	LDA + DT	0.761905	0.732222	0.778889	0.712035
21	Kernel LDA + DT	0.833333	0.853333	0.868889	0.824868
22	VGG Features + DT	0.428571	0.383333	0.433333	0.379596
23	Resnet Features + DT	0.761905	0.792063	0.793333	0.765926
24	Resnet + VGG Features + DT	0.761905	0.832222	0.813333	0.781770
25	KPCA + KLDA + DT	0.809524	0.850000	0.848889	0.824762
26	All Features + DT	0.714286	0.820000	0.803333	0.758010
27	PCA + LR	0.928571	0.936667	0.951111	0.934180
28	Kernel PCA + LR	0.357143	0.487807	0.513333	0.398034
29	LDA + LR	1.000000	1.000000	1.000000	1.000000
30	Kernel LDA + LR	1.000000	1.000000	1.000000	1.000000
31	VGG Features + LR	0.595238	0.525556	0.576667	0.496580
32	Resnet Features + LR	1.000000	1.000000	1.000000	1.000000
33	Resnet + VGG Features + LR	0.976190	0.983333	0.986667	0.983069
34	KPCA + KLDA + LR	1.000000	1.000000	1.000000	1.000000
35	All Features + LR	1.000000	1.000000	1.000000	1.000000

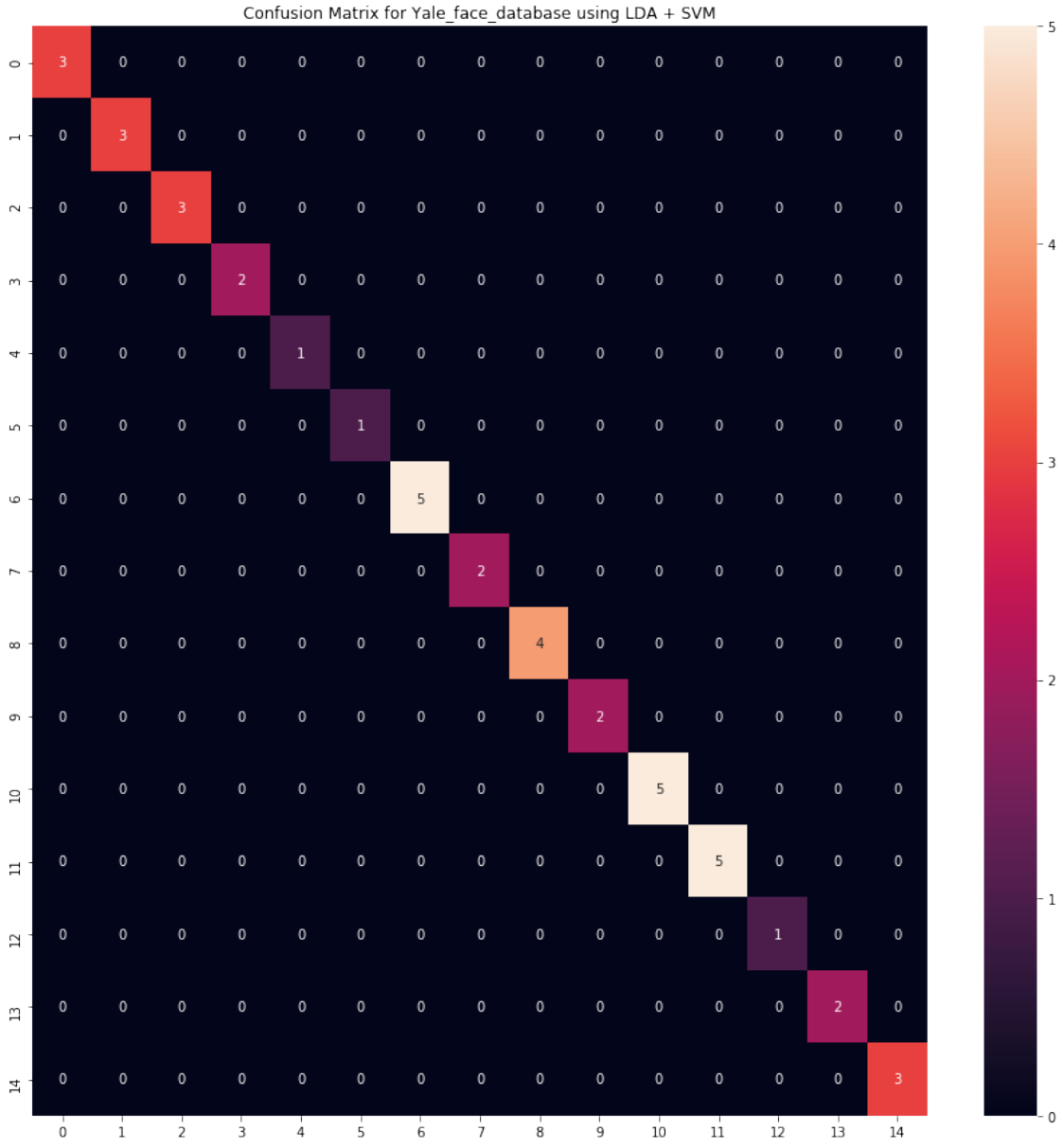
For IIIT-CFW best model is All Features + MLP



For IMFDB best model is All Features + SVM



For Yale_face_database best model is LDA + SVM



2 Face Verification Results

IIIT-CFW

	Method	Accuracy	Precision	Error
0	PCA with k=1	0.482143	0.497955	0.517857
1	Kernel PCA with k=1	0.494048	0.529458	0.505952
2	LDA with k=1	0.910714	0.905857	0.089286
3	Kernel LDA with k=1	0.964286	0.970833	0.035714
4	VGG Features with k=1	0.666667	0.639955	0.333333
5	Resnet Features with k=1	0.970238	0.967671	0.029762

6	Resnet + VGG Features with k=1	0.982143	0.983197	0.017857
7	KPCA + KLDA with k=1	0.964286	0.970833	0.035714
8	All Features with k=1	0.988095	0.992424	0.011905
9	PCA with k=3	0.476190	0.497630	0.523810
10	Kernel PCA with k=3	0.494048	0.529458	0.505952
11	LDA with k=3	0.910714	0.905857	0.089286
12	Kernel LDA with k=3	0.964286	0.970833	0.035714
13	VGG Features with k=3	0.666667	0.639955	0.333333
14	Resnet Features with k=3	0.970238	0.967671	0.029762
15	Resnet + VGG Features with k=3	0.982143	0.983197	0.017857
16	KPCA + KLDA with k=3	0.964286	0.970833	0.035714
17	All Features with k=3	0.988095	0.992424	0.011905
18	PCA with k=5	0.488095	0.505929	0.511905
19	Kernel PCA with k=5	0.494048	0.529458	0.505952
20	LDA with k=5	0.910714	0.905857	0.089286
21	Kernel LDA with k=5	0.964286	0.970833	0.035714
22	VGG Features with k=5	0.666667	0.639955	0.333333
23	Resnet Features with k=5	0.970238	0.967671	0.029762
24	Resnet + VGG Features with k=5	0.982143	0.983197	0.017857
25	KPCA + KLDA with k=5	0.964286	0.970833	0.035714
26	All Features with k=5	0.988095	0.992424	0.011905

IMFDB

	Method	Accuracy	Precision	Error
0	PCA with k=1	0.62	0.681574	0.38
1	Kernel PCA with k=1	0.65	0.703544	0.35
2	LDA with k=1	0.96	0.957516	0.04
3	Kernel LDA with k=1	0.95	0.957446	0.05
4	VGG Features with k=1	0.92	0.916203	0.08
5	Resnet Features with k=1	0.95	0.950000	0.05
6	Resnet + VGG Features with k=1	0.97	0.969370	0.03
7	KPCA + KLDA with k=1	0.95	0.957446	0.05
8	All Features with k=1	0.97	0.976366	0.03
9	PCA with k=3	0.62	0.681574	0.38
10	Kernel PCA with k=3	0.65	0.703544	0.35
11	LDA with k=3	0.96	0.957516	0.04
12	Kernel LDA with k=3	0.95	0.957446	0.05
13	VGG Features with k=3	0.92	0.916203	0.08
14	Resnet Features with k=3	0.95	0.950000	0.05
15	Resnet + VGG Features with k=3	0.97	0.969370	0.03
16	KPCA + KLDA with k=3	0.95	0.957446	0.05
17	All Features with k=3	0.97	0.976366	0.03
18	PCA with k=5	0.62	0.681574	0.38
19	Kernel PCA with k=5	0.65	0.703544	0.35
20	LDA with k=5	0.96	0.957516	0.04
21	Kernel LDA with k=5	0.95	0.957446	0.05
22	VGG Features with k=5	0.92	0.916203	0.08
23	Resnet Features with k=5	0.95	0.950000	0.05
24	Resnet + VGG Features with k=5	0.97	0.969370	0.03

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25            KPCA + KLDA with k=5      0.95   0.957446   0.05
26           All Features with k=5      0.97   0.976366   0.03
Yale_face_database
                           Method  Accuracy  Precision     Error
0                    PCA with k=1  0.761905   0.855556  0.238095
1              Kernel PCA with k=1  0.761905   0.855556  0.238095
2                    LDA with k=1  1.000000   1.000000  0.000000
3              Kernel LDA with k=1  1.000000   1.000000  0.000000
4            VGG Features with k=1  0.500000   0.396667  0.500000
5         Resnet Features with k=1  0.976190   0.983333  0.023810
6   Resnet + VGG Features with k=1  0.833333   0.888889  0.166667
7             KPCA + KLDA with k=1  1.000000   1.000000  0.000000
8            All Features with k=1  0.952381   0.961111  0.047619
9                    PCA with k=3  0.761905   0.855556  0.238095
10             Kernel PCA with k=3  0.761905   0.855556  0.238095
11                   LDA with k=3  1.000000   1.000000  0.000000
12             Kernel LDA with k=3  1.000000   1.000000  0.000000
13           VGG Features with k=3  0.500000   0.396667  0.500000
14        Resnet Features with k=3  0.976190   0.983333  0.023810
15  Resnet + VGG Features with k=3  0.833333   0.888889  0.166667
16            KPCA + KLDA with k=3  1.000000   1.000000  0.000000
17           All Features with k=3  0.952381   0.961111  0.047619
18                   PCA with k=5  0.761905   0.855556  0.238095
19             Kernel PCA with k=5  0.761905   0.855556  0.238095
20                   LDA with k=5  1.000000   1.000000  0.000000
21             Kernel LDA with k=5  1.000000   1.000000  0.000000
22           VGG Features with k=5  0.500000   0.396667  0.500000
23        Resnet Features with k=5  0.976190   0.983333  0.023810
24  Resnet + VGG Features with k=5  0.833333   0.888889  0.166667
25            KPCA + KLDA with k=5  1.000000   1.000000  0.000000
26           All Features with k=5  0.952381   0.961111  0.047619
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