python pca.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 50 eigenfaces from 855 faces

done in 0.127s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.011s

Fitting the classifier to the training set

done in 5.431s

Best estimator found by grid search:

SVC(C=1000.0, break\_ties=False, cache\_size=200, class\_weight='balanced',

coef0=0.0, decision\_function\_shape='ovr', degree=3, gamma=0.01,

kernel='rbf', max\_iter=-1, probability=False, random\_state=None,

shrinking=True, tol=0.001, verbose=False)

Predicting people's names on the test set

done in 0.008s

precision recall f1-score support

Colin Powell 0.95 0.84 0.89 64

Donald Rumsfeld 0.79 0.84 0.82 32

George W Bush 0.88 0.95 0.91 127

Gerhard Schroeder 0.81 0.59 0.68 29

Tony Blair 0.77 0.82 0.79 33

accuracy 0.86 285

macro avg 0.84 0.81 0.82 285

weighted avg 0.86 0.86 0.86 285

[[ 54 3 4 1 2]

[ 0 27 4 1 0]

[ 2 3 121 1 0]

[ 0 1 5 17 6]

[ 1 0 4 1 27]]

python pca.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 100 eigenfaces from 855 faces

done in 0.129s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.012s

Fitting the classifier to the training set

done in 10.226s

Best estimator found by grid search:

SVC(C=1000.0, break\_ties=False, cache\_size=200, class\_weight='balanced',

coef0=0.0, decision\_function\_shape='ovr', degree=3, gamma=0.005,

kernel='rbf', max\_iter=-1, probability=False, random\_state=None,

shrinking=True, tol=0.001, verbose=False)

Predicting people's names on the test set

done in 0.017s

precision recall f1-score support

Colin Powell 0.91 0.91 0.91 64

Donald Rumsfeld 0.90 0.81 0.85 32

George W Bush 0.90 0.95 0.92 127

Gerhard Schroeder 0.85 0.76 0.80 29

Tony Blair 0.87 0.82 0.84 33

accuracy 0.89 285

macro avg 0.88 0.85 0.87 285

weighted avg 0.89 0.89 0.89 285

[[ 58 1 2 1 2]

[ 0 26 4 2 0]

[ 5 1 121 0 0]

[ 1 0 4 22 2]

[ 0 1 4 1 27]]

python pca.py

Total dataset size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 150 eigenfaces from 855 faces

done in 0.169s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.015s

Fitting the classifier to the training set

done in 17.068s

Best estimator found by grid search:

SVC(C=1000.0, break\_ties=False, cache\_size=200, class\_weight='balanced',

coef0=0.0, decision\_function\_shape='ovr', degree=3, gamma=0.005,

kernel='rbf', max\_iter=-1, probability=False, random\_state=None,

shrinking=True, tol=0.001, verbose=False)

Predicting people's names on the test set

done in 0.033s

precision recall f1-score support

Colin Powell 0.90 0.94 0.92 64

Donald Rumsfeld 0.96 0.72 0.82 32

George W Bush 0.86 0.95 0.91 127

Gerhard Schroeder 0.96 0.83 0.89 29

Tony Blair 0.97 0.85 0.90 33

accuracy 0.90 285

macro avg 0.93 0.86 0.89 285

weighted avg 0.90 0.90 0.90 285

[[ 60 0 4 0 0]

[ 0 23 7 1 1]

[ 6 0 121 0 0]

[ 1 0 4 24 0]

[ 0 1 4 0 28]]

python pca.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 200 eigenfaces from 855 faces

done in 0.215s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.016s

Fitting the classifier to the training set

done in 23.499s

Best estimator found by grid search:

SVC(C=1000.0, break\_ties=False, cache\_size=200, class\_weight='balanced',

coef0=0.0, decision\_function\_shape='ovr', degree=3, gamma=0.001,

kernel='rbf', max\_iter=-1, probability=False, random\_state=None,

shrinking=True, tol=0.001, verbose=False)

Predicting people's names on the test set

done in 0.040s

precision recall f1-score support

Colin Powell 0.89 0.88 0.88 64

Donald Rumsfeld 0.90 0.84 0.87 32

George W Bush 0.87 0.93 0.90 127

Gerhard Schroeder 0.93 0.86 0.89 29

Tony Blair 0.90 0.79 0.84 33

accuracy 0.88 285

macro avg 0.90 0.86 0.88 285

weighted avg 0.89 0.88 0.88 285

[[ 56 1 5 1 1]

[ 0 27 3 1 1]

[ 7 2 118 0 0]

[ 0 0 3 25 1]

[ 0 0 7 0 26]]