python ica.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 50 eigenfaces from 855 faces

done in 0.432s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.027s

Fitting the classifier to the training set

done in 5.878s

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 0.012s

precision recall f1-score support

Colin Powell 0.95 0.89 0.92 64

Donald Rumsfeld 0.74 0.81 0.78 32

George W Bush 0.93 0.87 0.90 127

Gerhard Schroeder 0.69 0.76 0.72 29

Tony Blair 0.76 0.88 0.82 33

accuracy 0.86 285

macro avg 0.81 0.84 0.83 285

weighted avg 0.87 0.86 0.86 285

[[ 57 2 1 1 3]

[ 0 26 3 3 0]

[ 3 6 111 4 3]

[ 0 1 3 22 3]

[ 0 0 2 2 29]]

python ica.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 100 eigenfaces from 855 faces

done in 1.330s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.029s

Fitting the classifier to the training set

done in 8.782s

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=0.0005,

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 0.022s

precision recall f1-score support

Colin Powell 0.88 0.92 0.90 64

Donald Rumsfeld 0.83 0.78 0.81 32

George W Bush 0.94 0.91 0.92 127

Gerhard Schroeder 0.74 0.86 0.79 29

Tony Blair 0.88 0.85 0.86 33

accuracy 0.88 285

macro avg 0.85 0.86 0.86 285

weighted avg 0.89 0.88 0.88 285

[[ 59 2 1 1 1]

[ 1 25 1 3 2]

[ 7 3 115 2 0]

[ 0 0 3 25 1]

[ 0 0 2 3 28]]

python ica.py

Total dataset size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 150 eigenfaces from 855 faces

done in 1.963s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.029s

Fitting the classifier to the training set

done in 14.173s

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 0.032s

precision recall f1-score support

Colin Powell 0.86 0.89 0.88 64

Donald Rumsfeld 0.82 0.84 0.83 32

George W Bush 0.95 0.87 0.91 127

Gerhard Schroeder 0.72 0.90 0.80 29

Tony Blair 0.82 0.82 0.82 33

accuracy 0.87 285

macro avg 0.83 0.86 0.85 285

weighted avg 0.88 0.87 0.87 285

[[ 57 2 2 1 2]

[ 1 27 0 2 2]

[ 8 3 111 4 1]

[ 0 0 2 26 1]

[ 0 1 2 3 27]]

python ica.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 200 eigenfaces from 855 faces

done in 3.471s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.038s

Fitting the classifier to the training set

done in 19.076s

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=0.0005,

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 0.054s

precision recall f1-score support

Colin Powell 0.83 0.92 0.87 64

Donald Rumsfeld 0.82 0.88 0.85 32

George W Bush 0.93 0.87 0.90 127

Gerhard Schroeder 0.82 0.93 0.87 29

Tony Blair 0.96 0.82 0.89 33

accuracy 0.88 285

macro avg 0.87 0.88 0.88 285

weighted avg 0.89 0.88 0.88 285

[[ 59 2 3 0 0]

[ 1 28 1 1 1]

[ 10 4 111 2 0]

[ 1 0 1 27 0]

[ 0 0 3 3 27]]