python lda.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 50 fisherfaces from 855 faces

done in 0.151s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.012s

Fitting the classifier to the training set

done in 8.457s

Best estimator found by grid search:

SVC(C=5000.0, 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 0.002s

precision recall f1-score support

Colin Powell 0.96 0.84 0.90 64

Donald Rumsfeld 0.68 0.78 0.72 32

George W Bush 0.93 0.90 0.92 127

Gerhard Schroeder 0.73 0.83 0.77 29

Tony Blair 0.73 0.82 0.77 33

accuracy 0.86 285

macro avg 0.81 0.83 0.82 285

weighted avg 0.87 0.86 0.86 285

[[ 54 3 4 1 2]

[ 0 25 3 4 0]

[ 2 4 114 2 5]

[ 0 2 0 24 3]

[ 0 3 1 2 27]]

python lda.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 100 fisherfaces from 855 faces

done in 0.167s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.016s

Fitting the classifier to the training set

done in 4.802s

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 0.001s

precision recall f1-score support

Colin Powell 0.93 0.89 0.91 64

Donald Rumsfeld 0.74 0.81 0.78 32

George W Bush 0.97 0.91 0.94 127

Gerhard Schroeder 0.78 0.86 0.82 29

Tony Blair 0.81 0.91 0.86 33

accuracy 0.89 285

macro avg 0.85 0.88 0.86 285

weighted avg 0.90 0.89 0.89 285

[[ 57 4 1 1 1]

[ 1 26 2 2 1]

[ 3 4 116 2 2]

[ 0 0 1 25 3]

[ 0 1 0 2 30]]

python lda.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 150 fisherfaces from 855 faces

done in 0.218s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.015s

Fitting the classifier to the training set

done in 2.784s

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=0.0001,

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 0.001s

precision recall f1-score support

Colin Powell 0.88 0.92 0.90 64

Donald Rumsfeld 0.82 0.88 0.85 32

George W Bush 0.98 0.87 0.92 127

Gerhard Schroeder 0.71 0.93 0.81 29

Tony Blair 0.85 0.85 0.85 33

accuracy 0.89 285

macro avg 0.85 0.89 0.87 285

weighted avg 0.90 0.89 0.89 285

[[ 59 3 1 0 1]

[ 1 28 0 3 0]

[ 7 1 111 5 3]

[ 0 1 0 27 1]

[ 0 1 1 3 28]]

python lda.py

Total DATASET size:

n\_samples: 1140

n\_features: 2914

n\_classes: 5

Extracting the top 200 fisherfaces from 855 faces

done in 0.288s

Projecting the input data on the eigenfaces orthonormal basis

done in 0.015s

Fitting the classifier to the training set

done in 1.535s

Best estimator found by grid search:

SVC(C=5000.0, 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 0.001s

precision recall f1-score support

Colin Powell 0.88 0.88 0.88 64

Donald Rumsfeld 0.76 0.88 0.81 32

George W Bush 0.91 0.85 0.88 127

Gerhard Schroeder 0.72 0.79 0.75 29

Tony Blair 0.85 0.85 0.85 33

accuracy 0.85 285

macro avg 0.82 0.85 0.83 285

weighted avg 0.86 0.85 0.85 285

[[ 56 3 4 0 1]

[ 2 28 1 1 0]

[ 6 5 108 5 3]

[ 0 1 4 23 1]

[ 0 0 2 3 28]]