CS 584 Assignment4 Data

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2.

data Info: (100, 3)

predict: [-1. -1. -1. -1. -1. -1. -1. -1. -1. -1. -1. -1. -1. -1. -1. -1. -1. -1.

-1. -1. -1. -1. -1. -1. -1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.

1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.]

TP: 25 25

FN: 0 0

FP: 0 0

TN: 25 25

----- confusion\_matrix: -----

[[25 0]

[ 0 25]]

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Accurcy 1 1.0

Precision 1 1.0

Recall 1 1.0

Fmeasure 1 1.0

Accurcy -1 1.0

Precision -1 1.0

Recall -1 1.0

Fmeasure -1 1.0

a: -1.21065796097

TP: 24 25

FN: 1 0

FP: 0 1

TN: 25 24

----- confusion\_matrix: -----

[[25 0]

[ 1 24]]

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Accurcy 1 0.98

Precision 1 1.0

Recall 1 0.96

Fmeasure 1 0.979591836735

Accurcy -1 0.98

Precision -1 0.961538461538

Recall -1 1.0

Fmeasure -1 0.980392156863

Total performance:

TP: 50

FN: 0

FP: 1

TN: 49

Accurcy total 0.99

Precision total 0.98

Recall total 1.0

Fmeasure total 0.989898989899

Non linear separable:

Two hand:

1)

TP: 15 13

FN: 10 12

FP: 12 10

TN: 13 15

----- confusion\_matrix: -----

[[13 12]

[10 15]]

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Accurcy 1 0.56

Precision 1 0.555555555556

Recall 1 0.6

Fmeasure 1 0.576923076923

Accurcy -1 0.56

Precision -1 0.565217391304

Recall -1 0.52

Fmeasure -1 0.541666666667

2)

TP: 12 17

FN: 13 8

FP: 8 13

TN: 17 12

----- confusion\_matrix: -----

[[17 8]

[13 12]]

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Accurcy 1 0.58

Precision 1 0.6

Recall 1 0.48

Fmeasure 1 0.533333333333

Accurcy -1 0.58

Precision -1 0.566666666667

Recall -1 0.68

Fmeasure -1 0.618181818182

a: -0.0863347897585

------- total performance ------

MeasureFunction("total",30,20,23,27,1)

TP: 30

FN: 20

FP: 23

TN: 27

Accurcy total 0.57

Precision total 0.6

Recall total 0.566037735849

Fmeasure total 0.582524271845

Kernel cross validation

DataSet: dataFile2.txt

data Info: (100, 3)

TP: 24 25

FN: 1 0

FP: 0 1

TN: 25 24

----- confusion\_matrix: -----

[[25 0]

[ 1 24]]

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Accurcy 1 0.98

Precision 1 1.0

Recall 1 0.96

Fmeasure 1 0.979591836735

Accurcy -1 0.98

Precision -1 0.961538461538

Recall -1 1.0

Fmeasure -1 0.980392156863

TP: 25 25

FN: 0 0

FP: 0 0

TN: 25 25

----- confusion\_matrix: -----

[[25 0]

[ 0 25]]

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Accurcy 1 1.0

Precision 1 1.0

Recall 1 1.0

Fmeasure 1 1.0

Accurcy -1 1.0

Precision -1 1.0

Recall -1 1.0

Fmeasure -1 1.0

TP: 50

FN: 0

FP: 1

TN: 49

Accurcy total 0.99

Precision total 0.98

Recall total 1.0

Fmeasure total 0.989898989899

Kernel

Dataset: dataKernel.txt

TP: 38 12

FN: 0 0

FP: 0 0

TN: 12 38

----- confusion\_matrix: -----

[[23 2]

[ 0 75]]

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Accurcy 1 1.0

Precision 1 1.0

Recall 1 1.0

Fmeasure 1 1.0

Accurcy -1 1.0

Precision -1 1.0

Recall -1 1.0

Fmeasure -1 1.0

Cross validation:

TP: 34 12

FN: 4 0

FP: 0 4

TN: 12 34

----- confusion\_matrix: -----

[[12 0]

[ 4 34]]

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Accurcy 1 0.92

Precision 1 1.0

Recall 1 0.894736842105

Fmeasure 1 0.944444444444

Accurcy -1 0.92

Precision -1 0.75

Recall -1 1.0

Fmeasure -1 0.857142857143

TP: 37 6

FN: 0 7

FP: 7 0

TN: 6 37

----- confusion\_matrix: -----

[[ 6 7]

[ 0 37]]

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Accurcy 1 0.86

Precision 1 0.840909090909

Recall 1 1.0

Fmeasure 1 0.913580246914

Accurcy -1 0.86

Precision -1 1.0

Recall -1 0.461538461538

Fmeasure -1 0.631578947368

TP:18;

FN:7

FP:4

TN:71

------- total performance ------

Accurcy total 0.89

Precision total 0.818181818182

Recall total 0.72

Fmeasure total 0.765957446809

External dataset:

Datafile.txt

Cross 1:

TP: 25 25

FN: 0 0

FP: 0 0

TN: 25 25

----- confusion\_matrix: -----

[[25 0]

[ 0 25]]

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Accurcy 1 1.0

Precision 1 1.0

Recall 1 1.0

Fmeasure 1 1.0

Accurcy -1 1.0

Precision -1 1.0

Recall -1 1.0

Fmeasure -1 1.0

TP: 25 24

FN: 0 1

FP: 1 0

TN: 24 25

----- confusion\_matrix: -----

[[24 1]

[ 0 25]]

-----------------------------

Accurcy 1 0.98

Precision 1 0.961538461538

Recall 1 1.0

Fmeasure 1 0.980392156863

Accurcy -1 0.98

Precision -1 1.0

Recall -1 0.96

Fmeasure -1 0.979591836735

------- total performance ------

TP:49:

FN:1

FP:0

TN:50

Accurcy total 0.99

Precision total 1.0

Recall total 0.98

Fmeasure total 0.989898989899

Kernel nonlinearly separable

Total

TP: 0 31

FN: 0 19

FP: 19 0

TN: 31 0

----- confusion\_matrix: -----

[[31 19]

[24 26]]

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Accurcy 1 0.62

Precision 1 0.0

Recall 1 0

Fmeasure 1 0

Accurcy -1 0.62

Precision -1 1.0

Recall -1 0.62

Fmeasure -1 0.765432098765

Cross 1:

TP: 15 13

FN: 10 12

FP: 12 10

TN: 13 15

----- confusion\_matrix: -----

[[13 12]

[10 15]]

-----------------------------

Accurcy 1 0.56

Precision 1 0.555555555556

Recall 1 0.6

Fmeasure 1 0.576923076923

Accurcy -1 0.56

Precision -1 0.565217391304

Recall -1 0.52

Fmeasure -1 0.541666666667

Cross 2:

TP: 10 19

FN: 15 6

FP: 6 15

TN: 19 10

----- confusion\_matrix: -----

[[19 6]

[15 10]]

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Accurcy 1 0.58

Precision 1 0.625

Recall 1 0.4

Fmeasure 1 0.487804878049

Accurcy -1 0.58

Precision -1 0.558823529412

Recall -1 0.76

Fmeasure -1 0.64406779661

Total:

TP: 31

FN:18

FP: 25

TN: 25

Accurcy total 0.565656565657

Precision total 0.553571428571

Recall total 0.632653061224

Fmeasure total 0.5904761904766

sub example:

TP: 43 4

FN: 3 0

FP: 0 3

TN: 4 43

----- confusion\_matrix: -----

[[ 4 0]

[ 3 43]]

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Accurcy 1 0.94

Precision 1 1.0

Recall 1 0.934782608696

Fmeasure 1 0.966292134831

Accurcy -1 0.94

Precision -1 0.571428571429

Recall -1 1.0

Fmeasure -1 0.727272727273

TP: 44 0

FN: 0 6

FP: 6 0

TN: 0 44

----- confusion\_matrix: -----

[[ 0 6]

[ 0 44]]

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Accurcy 1 0.88

Precision 1 0.88

Recall 1 1.0

Fmeasure 1 0.936170212766

Accurcy -1 0.88

Precision -1 0

Recall -1 0.0

Fmeasure -1 0

Total

TP: 4

FN:6

FP:3

TN:87

------- total performance ------

Accurcy total 0.91

Precision total 0.571428571429

Recall total 0.4

Fmeasure total 0.470588235294