CS584 Hw3 Data

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1

dataset: spambase

numOfData: 4601

numOfFeature: 57

Accurcy 1 0.821739130435

Precision 1 0.0

Recall 1 0

Fmeasure 1 0

Accurcy 2 0.817391304348

Precision 2 1.0

Recall 2 0.817391304348

Fmeasure 2 0.8995215311

2-cross fold : 1

TP: 0 185

FN: 0 45

FP: 45 0

TN: 185 0

Accurcy 2 0.804347826087

Precision 2 1.0

Recall 2 0.804347826087

Fmeasure 2 0.89156626506

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TP: 0 186

FN: 0 44

FP: 44 0

TN: 186 0

Accurcy 2 0.808695652174

Precision 2 1.0

Recall 2 0.808695652174

Fmeasure 2 0.894230769231

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

2 is better than 1;

predice y

[ 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 1. 0. 1. 0. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0. 1. 0. 0.

0. 1. 1. 1. 0. 0. 0. 1. 1. 0. 1. 0. 0. 1. 1. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 1. 1. 1. 1. 0.

0. 0. 0. 0. 0. 1. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0. 1. 1.

1. 1. 1. 0. 0. 0. 1. 1. 1. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 1. 1. 1. 0. 0. 0. 0. 0. 0. 0. 0. 0. 1. 0. 0. 1.

0. 0. 1. 0. 0. 1. 1. 1. 1. 1. 0. 0. 0. 0. 0. 0. 1. 0.

1. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 1. 0. 0.

0. 0. 0. 0. 0. 0. 1. 0. 0. 0. 1. 1. 0. 1. 1. 0. 0. 0.

0. 0. 0. 1. 0. 0. 0. 0. 1. 0. 0. 0. 0. 1. 0. 0. 0. 0.

0. 0. 1. 0. 0. 0. 0. 0. 0. 0. 0. 1. 1. 1. 0. 0. 0. 1.

1. 0. 1. 1. 0. 0. 1. 1. 1. 0. 0. 0. 0. 0. 0. 1. 0. 0.

0. 0. 0. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0. 0. 1. 0. 1. 1.

0. 1. 0. 0. 0. 1. 1. 1. 1. 1. 1. 0. 1. 1. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 1. 0. 1. 0. 1. 1.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 1. 0. 0. 1. 0. 0.

0. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

1. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

true value:

[ 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

TP: 0 376

FN: 0 84

FP: 84 0

TN: 376 0

[[376 84]

[ 0 0]]

<testing data>

Accurcy 1 0.821739130435

Precision 1 0.0

Recall 1 0

Fmeasure 1 0

Accurcy 2 0.817391304348

Precision 2 1.0

Recall 2 0.817391304348

Fmeasure 2 0.8995215311

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

<total data test>

TP: 1212 2662

FN: 140 126

FP: 126 140

TN: 2662 1212

Accurcy 1 0.935748792271

Precision 1 0.905829596413

Recall 1 0.896449704142

Fmeasure 1 0.901115241636

Accurcy 2 0.935748792271

Precision 2 0.950035688794

Recall 2 0.954806312769

Fmeasure 2 0.952415026834

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

2-cross fold : 1

TP: 0 185

FN: 0 45

FP: 45 0

TN: 185 0

Accurcy 2 0.804347826087

Precision 2 1.0

Recall 2 0.804347826087

Fmeasure 2 0.89156626506

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TP: 0 186

FN: 0 44

FP: 44 0

TN: 186 0

Accurcy 2 0.808695652174

Precision 2 1.0

Recall 2 0.808695652174

Fmeasure 2 0.894230769231

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

b) no linear

numOfData: 4601

numOfFeature: 113

<test data test>

2 fold cross valiation:

TP: 0 182

FN: 0 48

FP: 48 0

TN: 182 0

Accurcy 2 0.791304347826

Precision 2 1.0

Recall 2 0.791304347826

Fmeasure 2 0.883495145631

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TP: 0 183

FN: 0 47

FP: 47 0

TN: 183 0

Accurcy 2 0.795652173913

Precision 2 1.0

Recall 2 0.795652173913

Fmeasure 2 0.886198547215

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<total data>

TP: 1185 2635

FN: 167 153

FP: 153 167

TN: 2635 1185

Accurcy 1 0.92270531401

Precision 1 0.885650224215

Recall 1 0.876479289941

Fmeasure 1 0.881040892193

Accurcy 2 0.92270531401

Precision 2 0.94039971449

Recall 2 0.94512195122

Fmeasure 2 0.942754919499

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3)

dataset: iris

numOfData: 150

numOfFeature: 4

[ 3. 3. 3. 3. 3. 3. 3.]

TP: 0 0 7

FN: 0 0 0

FP: 0 0 0

TN: 7 0 0

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

[[7]]

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Accurcy 3 1.0

Precision 3 1.0

Recall 3 1.0

Fmeasure 3 1.0

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

[ 3. 3. 3. 3. 3. 3. 3.]

TP: 0 0 7

FN: 0 0 0

FP: 0 0 0

TN: 7 0 0

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

[[7]]

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Accurcy 3 1.0

Precision 3 1.0

Recall 3 1.0

Fmeasure 3 1.0

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TP: 35 45 49

FN: 0 5 1

FP: 0 1 5

TN: 100 35 0

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

[[35 0 0]

[ 0 45 5]

[ 0 1 49]]

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Accurcy 1 1.0

Precision 1 1.0

Recall 1 1.0

Fmeasure 1 1.0

Accurcy 2 0.93023255814

Precision 2 0.978260869565

Recall 2 0.9

Fmeasure 2 0.9375

Accurcy 3 0.890909090909

Precision 3 0.907407407407

Recall 3 0.98

Fmeasure 3 0.942307692308

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Problem 2

The error for own MLP

DataSet: iris

numOfData: 150

numOfFeature: 4

(150, 4) (150, 1)

(4, 150)

Error: 1.99141711795

Error: 1.000042613

Error: 1.00007310197

Error: 1.00001931878

Error: 1.00000000047

Error: 1.0

Error: 1.0

Error: 1.00000000003

Error: 1.0

Error: 1.0

TP: 50 0 0

FN: 0 50 50

FP: 100 0 0

TN: 0 100 50

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

[[50 0 0]

[50 0 0]

[50 0 0]]

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Accurcy 1 0.333333333333

Precision 1 0.333333333333

Recall 1 1.0

Fmeasure 1 0.5

Accurcy 2 0.666666666667

Precision 2 0

Recall 2 0.0

Fmeasure 2 0

Accurcy 3 0.5

Precision 3 0

Recall 3 0.0

Fmeasure 3 0

<sklearn validation>

numOfData: 150

numOfFeature: 4

(150, 4) (150,)

15

y\_test: [ 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.]

y\_predict: [ 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.]

TP: 0 0 0

FN: 0 0 15

FP: 0 15 0

TN: 15 0 0

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

[[ 0 0]

[15 0]]

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Accurcy 1 1.0

Precision 1 0

Recall 1 0

Fmeasure 1 0

Accurcy 2 0.0

Precision 2 0.0

Recall 2 0

Fmeasure 2 0

Accurcy 3 0.0

Precision 3 0

Recall 3 0.0

Fmeasure 3 0

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<cross validation>

y\_test: [[ 3.] [ 3.] [ 3.][ 3.] [ 3.] [ 3.] [ 3.]]

y\_predict: [ 2. 2. 2. 2. 2. 2. 2.]

TP: 0 0 0

FN: 0 0 7

FP: 0 7 0

TN: 7 0 0

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

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Accurcy 1 1.0

Precision 1 0

Recall 1 0

Fmeasure 1 0

Accurcy 2 0.0

Precision 2 0.0

Recall 2 0

Fmeasure 2 0

Accurcy 3 0.0

Precision 3 0

Recall 3 0.0

Fmeasure 3 0

<cross validation 2>

y\_test: [[ 3.] [ 3.] [ 3.] [ 3.] [ 3.] [ 3.] [ 3.]]

y = column\_or\_1d(y, warn=True)

y\_predict: [ 1. 1. 1. 1. 1. 1. 1.]

TP: 0 0 0

FN: 0 0 7

FP: 7 0 0

TN: 0 7 0

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

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Accurcy 1 0.0

Precision 1 0.0

Recall 1 0

Fmeasure 1 0

Accurcy 2 1.0

Precision 2 0

Recall 2 0

Fmeasure 2 0

Accurcy 3 0.0

Precision 3 0

Recall 3 0.0

Fmeasure 3 0

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