Segmented Stacked Autoencoder

Segmentation: 1-35, 36-104, 105-200

Hidden layers: 13, 13, 13 (total 39 instead of 40)

Features: 6, 7, 7 (total 20)

Training: 100 epochs

SVM

kernel = 'rbf', gamma=100, C=100.

Training accuracy: 0.77638640429338102

Validation accuracy: 0.76048780487804879

Test accuracy: 0.77658536585365856

Predicted 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 All

Acctual

1 11 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 13

2 0 196 3 3 0 0 0 0 0 16 74 13 0 0 0 0 305

3 0 19 99 2 0 0 0 0 0 4 37 6 0 0 0 0 167

4 0 12 2 25 0 0 0 0 0 3 6 0 0 0 0 0 48

5 1 0 0 0 82 2 0 0 0 0 2 0 0 3 1 0 91

6 0 0 0 1 0 143 0 0 0 0 0 0 0 0 5 0 149

7 0 0 0 0 0 0 5 0 0 0 0 0 0 0 0 0 5

8 0 0 0 0 0 0 0 103 0 0 0 0 0 0 0 0 103

9 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 2

10 0 9 2 0 2 0 0 0 0 128 37 8 0 0 0 0 186

11 0 30 14 1 1 0 0 0 1 35 401 5 0 0 2 0 490

12 0 21 2 2 0 0 0 0 0 8 15 55 0 0 0 0 103

13 0 0 0 0 0 0 0 0 0 0 1 0 42 0 2 0 45

14 0 0 0 0 4 1 0 0 0 0 1 0 1 238 4 0 249

15 0 0 1 0 5 3 0 0 0 0 0 0 2 17 51 0 79

16 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 13 15

All 12 288 123 34 94 150 5 105 1 194 575 87 45 258 66 13 2050

S-SAE + SVM

Features: 3, 3, 4 (total 10)

Training accuracy: 0.73296470970889571

Validation accuracy: 0.72634146341463413

Test accuracy: 0.72585365853658534

Predicted 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Acctual

0 4 0 0 0 0 0 0 6 0 0 0 0 0 0 0 0

1 0 185 6 1 1 0 0 0 0 20 84 8 0 0 0 0

2 0 18 87 2 0 0 0 0 0 2 53 13 0 0 0 0

3 0 13 0 17 0 2 1 0 0 1 14 1 0 0 0 0

4 0 0 0 0 46 2 0 1 0 0 2 1 0 29 0 0

5 0 0 0 0 0 131 0 0 0 0 0 0 0 0 4 0

6 0 0 0 0 0 0 2 2 0 0 0 0 0 0 0 0

7 0 0 0 0 0 0 0 112 0 0 0 0 0 0 0 0

8 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0

9 0 11 6 0 0 1 0 0 0 117 64 4 0 0 0 0

10 0 38 15 0 1 0 0 1 0 23 413 5 0 0 2 0

11 0 11 7 0 0 0 0 0 0 4 20 62 0 0 0 0

12 0 0 0 0 0 1 0 0 0 0 0 0 25 0 4 0

13 0 0 0 0 8 1 0 0 0 0 0 0 0 242 2 0

14 0 0 0 0 6 13 0 0 2 0 0 0 3 21 26 0

15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 19

All 4 276 121 20 62 152 3 122 2 167 650 94 28 292 38 19

Predicted All

Acctual

0 10

1 305

2 175

3 49

4 81

5 135

6 4

7 112

8 1

9 203

10 498

11 104

12 30

13 253

14 71

15 19

All 2050