Thursday, January 9, 2020

12:31 PM

The result below is for task based emotion classification, it could estimate general emotions in certain tasks. However, as you may find that the accuracy is not as good as younger kid from our previous study, so it would be good to dig deeper into each task, and find out more inside.

Result of Scale range [1000]

And spectrum resize of [1000, 320]

Beoch = 100

Linear Kernal with C = 0.01, 0.1, 1, 10, 100

C = 0.01

1vs2

SVMAccuracy : 62.1212

SVMConfusionMatrix

70 30

45 55

1vs3

SVMAccuracy : 63.6364

SVMConfusionMatrix

73 27

45 55

2vs3

SVMAccuracy : 72.7273

SVMConfusionMatrix

82 18

36 64

1vs2vs3

SVMAccuracy : 50.5051

SVMConfusionMatrix

55 30 15

39 48 12

42 9 48

And we can see that when c = 0.01 provides the best result overall using Linear Kernal.

C = 0.1

1vs2

SVMAccuracy : 56.0606

SVMConfusionMatrix

55 45

42 58

1vs3

SVMAccuracy : 63.6364

SVMConfusionMatrix

79 21

52 48

2vs3

SVMAccuracy : 68.1818

SVMConfusionMatrix

73 27

36 64

1vs2vs3

SVMAccuracy : 46.4646

SVMConfusionMatrix

48 24 27

39 48 12

48 9 42

C = 1

1vs2

SVMAccuracy : 59.0909

SVMConfusionMatrix

61 39

42 58

1vs3

SVMAccuracy : 59.0909

SVMConfusionMatrix

73 27

55 45

2vs3

SVMAccuracy : 68.1818

SVMConfusionMatrix

70 30

33 67

1vs2vs3

SVMAccuracy : 45.4545

SVMConfusionMatrix

45 30 24

36 48 15

42 15 42

C = 10

1vs2

SVMAccuracy : 60.6061

SVMConfusionMatrix

61 39

39 61

1vs3

SVMAccuracy : 59.0909

SVMConfusionMatrix

67 33

48 52

2vs3

SVMAccuracy : 65.1515

SVMConfusionMatrix

67 33

36 64

1vs2vs3

SVMAccuracy : 39.3939

SVMConfusionMatrix

33 36 30

42 48 9

39 24 36

C = 100

1vs2

SVMAccuracy : 57.5758

SVMConfusionMatrix

58 42

42 58

1vs3

SVMAccuracy : 62.5

SVMConfusionMatrix

64 36

39 61

2vs3

SVMAccuracy : 65.1515

SVMConfusionMatrix

70 30

39 61

1vs2vs3

SVMAccuracy : 41.4141

SVMConfusionMatrix

36 36 27

36 52 12

39 24 36

Polynoimal Kernal with C = 0.01, 0.1, 1, 10, 100

C = 0.01

1vs2

SVMAccuracy : 57.5758

SVMConfusionMatrix

24 76

9 91

1vs3

SVMAccuracy : 57.5758

SVMConfusionMatrix

88 12

73 27

2vs3

SVMAccuracy : 59.0909

SVMConfusionMatrix

100 0

82 18

1vs2vs3

SVMAccuracy : 39.3939

SVMConfusionMatrix

6 85 9

9 91 0

27 52 21

And we can see that when c = 0.1 provides the best result overall using Polynomial Kernal.

C = 0.1

1vs2

SVMAccuracy : 65.1515

SVMConfusionMatrix

73 27

42 58

1vs3

SVMAccuracy : 59.0909

SVMConfusionMatrix

58 42

39 61

2vs3

SVMAccuracy : 66.6667

SVMConfusionMatrix

85 15

52 48

1vs2vs3

SVMAccuracy : 52.5253

SVMConfusionMatrix

61 30 9

39 61 0

48 15 36

C = 1

1vs2

SVMAccuracy : 62.1212

SVMConfusionMatrix

61 39

36 64

1vs3

SVMAccuracy : 50

SVMConfusionMatrix

27 73

27 73

2vs3

SVMAccuracy : 54.5455

SVMConfusionMatrix

52 48

42 58

1vs2vs3

SVMAccuracy : 40.404

SVMConfusionMatrix

27 27 45

21 39 39

24 21 55

C = 10

1vs2

SVMAccuracy : 62.1212

SVMConfusionMatrix

61 39

36 64

1vs3

SVMAccuracy : 50

SVMConfusionMatrix

24 76

24 76

2vs3

SVMAccuracy : 54.5455

SVMConfusionMatrix

52 48

42 58

1vs2vs3

SVMAccuracy : 43.4343

SVMConfusionMatrix

27 36 36

24 45 30

15 27 58

C = 100

1vs2

SVMAccuracy : 62.1212

SVMConfusionMatrix

61 39

36 64

1vs3

SVMAccuracy : 50

SVMConfusionMatrix

24 76

24 76

2vs3

SVMAccuracy : 54.5455

SVMConfusionMatrix

52 48

42 58

1vs2vs3

SVMAccuracy : 43.4343

SVMConfusionMatrix

27 36 36

24 45 30

15 27 58

RBF Kernal with C = 0.01, 0.1, 1, 10, 100

C = 0.01

1vs2

SVMAccuracy : 56.0606

SVMConfusionMatrix

27 73

15 85

1vs3

SVMAccuracy : 51.5152

SVMConfusionMatrix

21 79

18 82

2vs3

SVMAccuracy : 56.0606

SVMConfusionMatrix

18 82

6 94

1vs2vs3

SVMAccuracy : 40.404

SVMConfusionMatrix

24 0 76

9 18 73

18 3 79

RBF is complicated, when C = 1 and 10, it has better results

Personal perspective, I would say C = 1 better than C = 10.

C = 0.1

1vs2

SVMAccuracy : 56.0606

SVMConfusionMatrix

27 73

15 85

1vs3

SVMAccuracy : 51.5152

SVMConfusionMatrix

21 79

18 82

2vs3

SVMAccuracy : 56.0606

SVMConfusionMatrix

18 82

6 94

1vs2vs3

SVMAccuracy : 40.404

SVMConfusionMatrix

24 0 76

9 18 73

18 3 79

C = 1

1vs2

SVMAccuracy : 72.7273

SVMConfusionMatrix

85 15

39 61

1vs3

SVMAccuracy : 53.0303

SVMConfusionMatrix

30 70

24 76

2vs3

SVMAccuracy : 60.6061

SVMConfusionMatrix

42 58

21 79

1vs2vs3

SVMAccuracy : 45.4545

SVMConfusionMatrix

27 9 64

9 36 55

15 12 73

C = 10

1vs2

SVMAccuracy : 59.0909

SVMConfusionMatrix

33 67

15 85

1vs3

SVMAccuracy : 48.4848

SVMConfusionMatrix

24 76

27 73

2vs3

SVMAccuracy : 62.1212

SVMConfusionMatrix

45 55

21 79

1vs2vs3

SVMAccuracy : 50.5051

SVMConfusionMatrix

33 12 55

12 52 36

18 15 67

C = 100

1vs2

SVMAccuracy : 59.0909

SVMConfusionMatrix

33 67

15 85

1vs3

SVMAccuracy : 48.4848

SVMConfusionMatrix

24 76

27 73

2vs3

SVMAccuracy : 62.1212

SVMConfusionMatrix

45 55

21 79

1vs2vs3

SVMAccuracy : 50.5051

SVMConfusionMatrix

33 12 55

12 52 36

18 15 67