Results for Support Vector Machines

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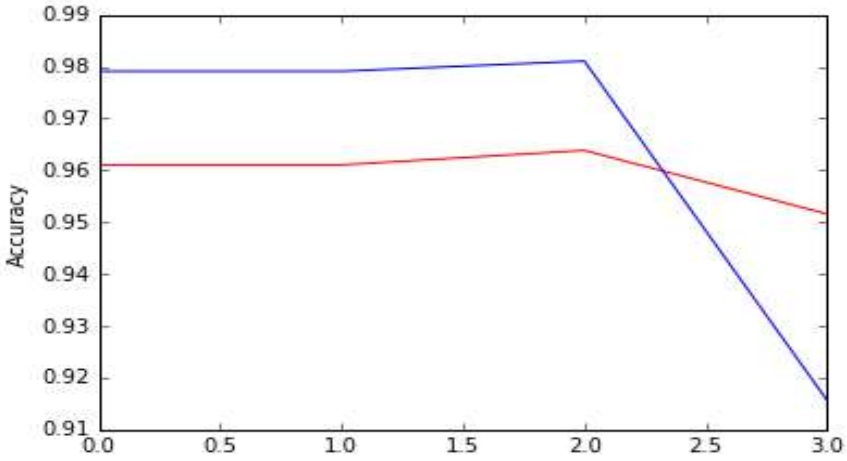
Contents:

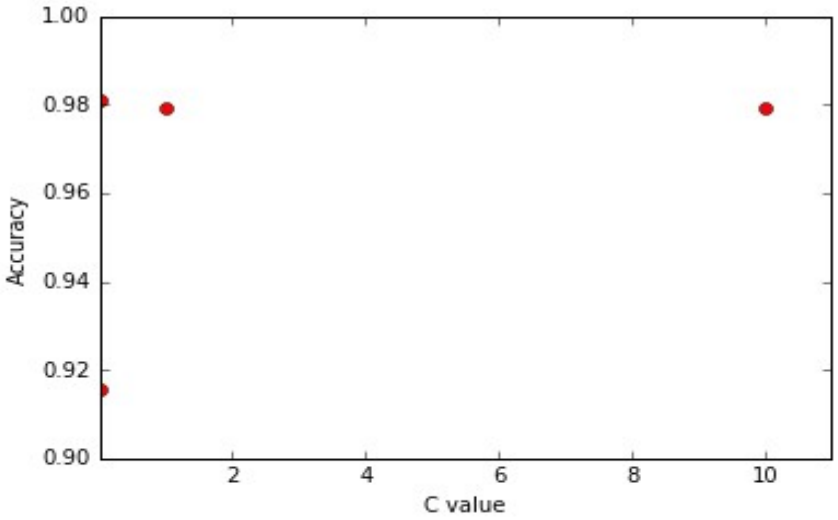
1. Support Vector Machines:

1.1 Digit Recognition Dataset

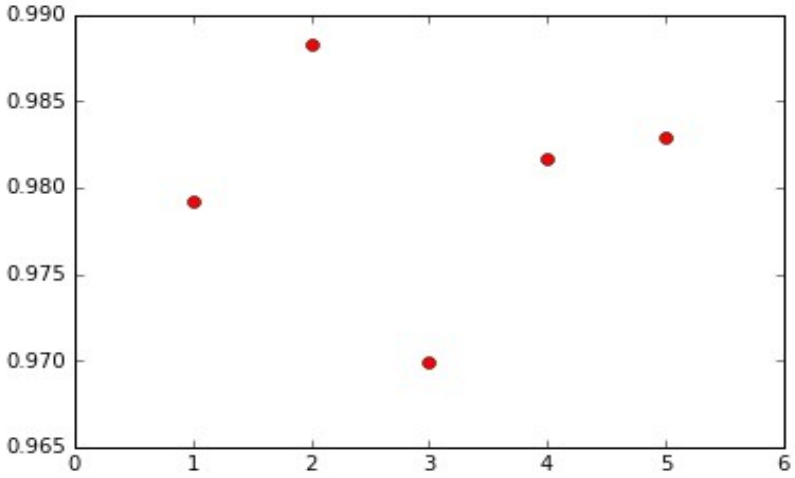
Sample rbf
Training Accuracy 1:
0.491824722041
****
Sample 1
Training Accuracy 1:
0.979071288424
****
Sample 2
Training Accuracy 2:
0.979071288424
****
Sample 3
Training Accuracy 3:
0.981033355134
Scores: [0.97916667 0.98826597 0.96985583 0.98165138 0.98291721]
****
Sample 4
Training Accuracy 4:
0.915631131458
****
Test Sample 0 rbf kernel
Testing Accuracy 1:
0.561804008909
****
Test Sample 1
Testing Accuracy 1:
0.961024498886
****
Test Sample 2
Testing Accuracy 2:
0.961024498886
****
Test Sample 3
Testing Accuracy 3:
0.963808463252
****
Test Sample 4
Testing Accuracy 2:
0.951559020045



The graph above shows the accuracy for cross-validation in red and testing in blue.



The graph above shows the accuracy for cross-validation with different values of C parameter.



The graph above shows the scores for 5 folds cross-validation for C=0.001.

1.2 Amazon Dataset

1. Kernel is rbf and accuracy is 58%.

```
[5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 5]
Accuracy:
0.58
```

2. Kernel is linear and accuracy is 42.66%.

```
[5 5 5 5 5 2 5 4 5 5 3 3 2 5 4 5 5 5 5 5 5 5 3 5 5 5 5 1 5 5 2 5 5 4 3 2 2
 5 5 5 1 5 4 2 4 3 3 5 1 5 5 5 1 5 4 4 4 3 5 3 1 5 3 5 5 4 5 5 5 5 1 1 5 1
 4 2 4 5 4 4 4 5 5 5 2 1 5 1 5 1 5 5 5 4 3 4 2 5 5 5 5 5 5 5 5 5 5 4 1 4 5
 5 4 3 5 5 5 5 5 5 5 5 5 1 5 2 5 5 4 5 4 1 5 4 5 5 5 2 5 5 5 5 5 5 5 1 5 2
 4 4]
Accuracy:
0.426666666667
```

3. Kernel is polynomial and accuracy is 58%.

```
[5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 5]
Accuracy:
0.58
```