

Computational Intelligence Laboratory Exercise 2

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1 Task One

```
D:\libsvm-3.24\windows>svm-train -t 0 iris2_train.txt iris2_modle0.txt
*
optimization finished, #iter = 13
nu = 0.021996
obj = -0.748057, rho = -1.452844
nSV = 3, nBSV = 0
*
optimization finished, #iter = 3
nu = 0.005127
obj = -0.169205, rho = -2.289340
nSV = 2, nBSV = 0
*
optimization finished, #iter = 26
nu = 0.187323
obj = -9.104039, rho = -9.329489
nSV = 15, nBSV = 11
Total nSV = 19

D:\libsvm-3.24\windows>svm-predict iris2_test.txt iris2_modle0.txt predict_result0.txt
Accuracy = 96% (48/50) (classification)
```

```
D:\libsvm-3.24\windows>svm-train -t 1 iris2_train.txt iris2_model1.txt
*
optimization finished, #iter = 19
nu = 0.000276
obj = -0.009399, rho = -1.135758
nSV = 3, nBSV = 0
*
optimization finished, #iter = 23
nu = 0.000024
obj = -0.000787, rho = -1.372318
nSV = 5, nBSV = 0
.*
optimization finished, #iter = 126
nu = 0.050868
obj = -2.655578, rho = -21.575711
nSV = 6, nBSV = 2
Total nSV = 12

D:\libsvm-3.24\windows>svm-predict iris2_test.txt iris2_model1.txt predict1_result.txt
Accuracy = 92% (46/50) (classification)

D:\libsvm-3.24\windows>
```

```

C:\Windows\system32\cmd.exe
D:\>cd libsvm-3.24\tools
D:\libsvm-3.24\tools>subset.py iris2.txt 100 iris2_train.txt iris2_test.txt
D:\libsvm-3.24\tools>cd \
D:\>cd libsvm-3.24\windows
D:\libsvm-3.24\windows>svm-train iris2_train.txt iris2_train_model.txt
(*)
optimization finished, #iter = 20
nu = 0.067748
obj = -2.399249, rho = 0.053673
nSV = 8, nBSV = 2
*
optimization finished, #iter = 17
nu = 0.054628
obj = -1.802721, rho = 0.094569
nSV = 8, nBSV = 0
I*
optimization finished, #iter = 44
nu = 0.299474
obj = -13.333559, rho = 0.129589
nSV = 25, nBSV = 18
Total nSV = 33
D:\libsvm-3.24\windows>svm-predict iris2_test.txt iris2_train_model.txt iris2_predict_result.txt
Accuracy = 96% (48/50) (classification)
D:\libsvm-3.24\windows>_

```

From the result of predict accuracy, we can know that using Polynomial Kernel perform little worse than the left two Kernel way using libsvm toolbox in classifying iris_data.