IST-687 Chapter Notes Template: After Completing Please Submit as a PDF.
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Name: Yicun Deng
Class: M003
Date: 10/27
Chapter Number: #18
Title of Chapter: 18 What's Your Vector, Victor?

Module 10 SVM - Lecture and Roundtables

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We are learning how to build support vector machine model this week
Train algorithm on an initial set of data.
Test algorithm on a new set of data.
Validate "trained" algorithm predicted the right outcome.
SVM is doing like deep learning(but you have to make sure your data is ground truth)
Grade predicting is another scene that SVM is useful for.
kernalab package

```
install.packages("kernlab")
library(kernlab)
data(spam)
str(spam)
dim(spam)
table(spam$type)
randIndex <- sample(1:dim(spam)[1])#create list/vector variable-random index
summary(randIndex)
length(randIndex)
head(randIndex)
cutPoint2_3<-floor(2*dim(spam)[1]/3)
cutPoint2_3
trainData<-spam[randIndex[1:cutPoint2_3],]
testData<-spam[randIndex[(cutPoint2_3+1):dim(spam)[1]],
svmOutput<-
ksvm(type~.,data=trainData,kernel="rbfdot",kpar="automatic",C=5,cross=3,prob.model=TRUE)
svmPred<-predict(svmOutput,testData,type="votes")
compTable<-data.frame(testData[,58],svmPred[1,])
table(compTable )
```

Title of Inset Box

Each chapter contains one or more inset "boxes" with special topics. Your notes should summarize each boxed topic. Whenever a box contains a formula, your notes should explain that formula.

Module 10 R Coding

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```
Bank_data=read.csv(datafile,sep=’;’, header=TRUE)
Str(bank_data)
Summary(bank_data)
Nrows<-nrow(bank_data)
cutPoint<-floor(nrows/3*2)
rand<-sample(1:nrows)
head(rand)
bd.train<-bd[rand[1:cutPoint],]
bd.test<-bd[rand[cutPoint+1:nrows],]
model<-ksvm(y~.,data-bd.train)
model

pred<-predict（model,bd.test）
table(pred,bd.test$y)
results<-table(pred,bd.test$y)
results
```

Exercise Review
Save the promotergene into a new dataset for usage
Library()kernlab package
Use nrow()to create cutpoint 2/3 for dataset
Use ksvm()to form model using 2/3 dataset
Use predict() to check if the model could predict test dataset
Use table() to calculate error rate

Question for Class
IMPORTANT: When would the midterm grade be out