In [ ]:
```r
# R语言

# Author :坚定的唯物主义鼠鼠

#R BCancer 支持向量机
#数据来源https://www.kaggle.com/uciml/breast-cancer-wisconsin-data

library(e1071)
library(caret)
set.seed(1234)
```

In [ ]:
```r
data=read.csv("./data/data_处理后.csv")
#这里的处理指的是将数据中的B、M转换为0、1

tdata=data[-1]
#取tdata的前519行
train=tdata[1:519,]
#取tdata的到最后部分
test=tdata[520:569,]
```

In [ ]:
```r
svm=svm(as.factor(diagnosis)~.,data=train)  #训练模型
svm
```

```
Call:
svm(formula = as.factor(diagnosis) ~ ., data = train)


Parameters:
   SVM-Type:  C-classification
 SVM-Kernel:  radial
       cost:  1

Number of Support Vectors:  114
```

In [ ]:
```r
forest.pred=predict(svm,test,type="class")   #下面懒得改了
forest.cf=confusionMatrix(as.factor(forest.pred),as.factor(test$diagnosis))
forest.cf
```

```
Confusion Matrix and Statistics

          Reference
Prediction  0  1
         0 39  0
         1  1 10

               Accuracy : 0.98
                 95% CI : (0.8935, 0.9995)
    No Information Rate : 0.8
    P-Value [Acc > NIR] : 0.0001927

                  Kappa : 0.9398

 Mcnemar's Test P-Value : 1.0000000

            Sensitivity : 0.9750
            Specificity : 1.0000
         Pos Pred Value : 1.0000
         Neg Pred Value : 0.9091
             Prevalence : 0.8000
         Detection Rate : 0.7800
   Detection Prevalence : 0.7800
      Balanced Accuracy : 0.9875

       'Positive' Class : 0
```

支持向量机结果准确率为98%，而随机森林结果准确率为100%，显然随机森林的准确率更高。（但它至少比人工神经网络的准确率高）