

code KNN du cours

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KNN

```
library(AppliedPredictiveModeling)

## Warning: package 'AppliedPredictiveModeling' was built under R version
## 3.4.4

data(twoClassData)

train.set <- list(x=predictors, y= classes)

computeDistance <- function(x.to.class,X.data.frame){
  apply(predictors,1,function(x) sum((x.to.class-x)^2))
}

compute.posterior<-function(index.of.knn,y){
  vote <- table(y[index.of.knn])
  posterior<- vote / sum(vote)
}

knn.predict<-function(x,train.set,k=3){
  distance.to.x <-computeDistance(x,train.set$x)
  index.of.knn  <- order( distance.to.x)[1:k]
  compute.posterior(index.of.knn,train.set$y)
}

prediction<-matrix(0,nrow(predictors),length(levels(classes)))
for (i in 1:nrow(predictors))
  prediction[i,]<-knn.predict(predictors[i,],train.set,k=3)

table(apply(prediction, 1, which.max) , train.set$y)

##
##      Class1 Class2
## 1      95      15
## 2      16      82
```