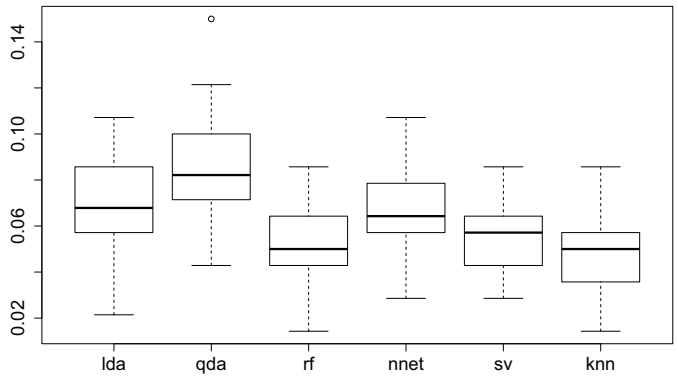
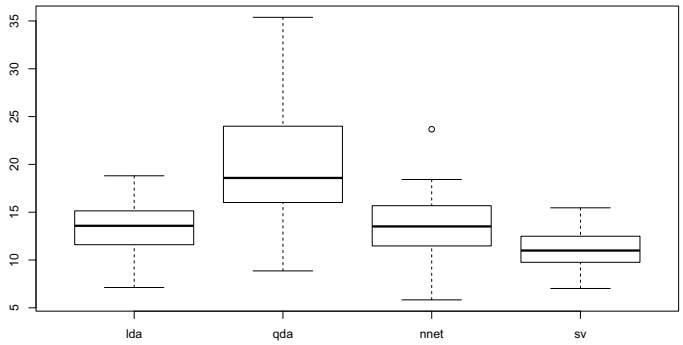
Glass - Comparing methods for discriminant analysis

January 5, 2012

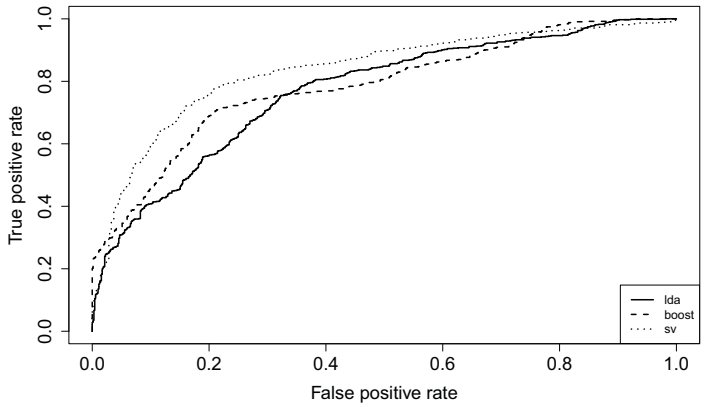
```
> library(catdata)
> data(glass)
> source("disc_comp_roc.r")

> table(glass$type)

type1 type2 type3 type5 type6 type7
   70    76    17    13     9    29

> data(glass)
> glass <- glass[glass$type == "type1" | glass$type ==
+     "type2" | glass$type == "type7", ]
> glass[, 10] <- factor(glass[, 10], labels = c("type1",
+     "type2", "type7"))
> x <- scale(as.matrix(glass[, 1:9]), center = T,
+     scale = T)

> test <- disc.comp(glass$type, x, methods = c("lda",
+     "qda", "rf", "neural", "sv", "knn"), nfold = 5,
+     ntimes = 50)

> par(cex.lab = 1.5, cex.axis = 1.5, mai = c(0.9,
+     0.9, 0.5, 0.5))
> boxplot(test$lda$misclass, test$qda$misclass,
+     test$rf$misclass, test$neural$misclass, test$sv$misclass,
+     test$knn$misclass, names = c("lda", "qda",
+         "rf", "nnet", "sv", "knn"), main = "")
```



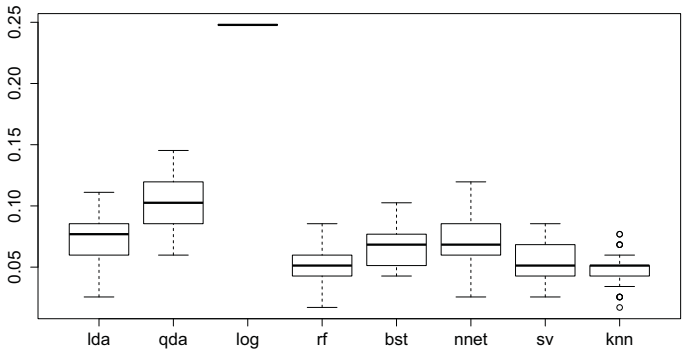

```
> boxplot(test$lda$sqerr, test$qda$sqerr, test$neural$sqerr,
+     test$sv$sqerr, names = c("lda", "qda", "nnet",
+         "sv"), main = "")
```



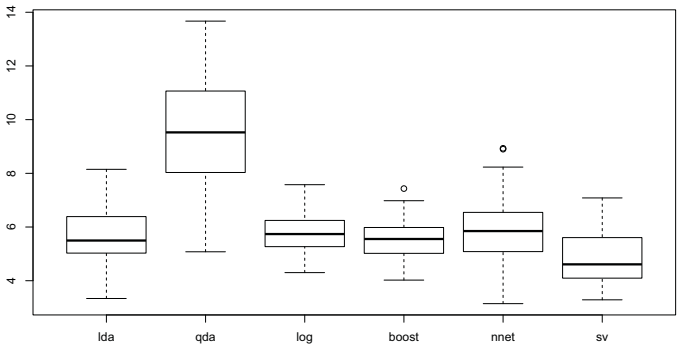

```
> data(glass)
> glass <- glass[glass$type == "type1" | glass$type ==
+     "type2", ]
> glass[, 10] <- factor(glass[, 10], labels = c("type1",
+     "type2"))
> x <- scale(as.matrix(glass[, 1:9]), center = T,
+     scale = T)

> test <- disc.comp(glass$type, x, nfold = 5, ntimes = 50)

> par(cex.lab = 1.5, cex.axis = 1.5, mai = c(0.9,
+     0.9, 0.5, 0.5))
> roc.curve(test, roc.k = c("lda", "boost", "sv"))
```




```
> par(cex.main = 1.5, cex.lab = 1.4, cex.axis = 1.4)
> boxplot(test$lda$misclass, test$qda$misclass,
+     test$logistic$misclass, test$rf$misclass,
+     test$boost$misclass, test$neural$misclass,
+     test$sv$misclass, test$knn$misclass, names = c("lda",
+         "qda", "log", "rf", "bst", "nnet", "sv",
+         "knn"), main = "")
```




```
> boxplot(test$lda$sqerr, test$qda$sqerr, test$logistic$sqerr,
+     test$boost$sqerr, test$neural$sqerr, test$sv$sqerr,
+     names = c("lda", "qda", "log", "boost", "nnet",
+         "sv"), main = "")
```


14
12
10
8
6
4
lda
qda
log
boost
nnet
sv