Run Multiple Models with train()

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Just a simple example of how to run multiple types of models at once on the same dataset. This can be helpful if there is no one method that is thought to be best, thus making the testing of multiple types of algorithms necessary.

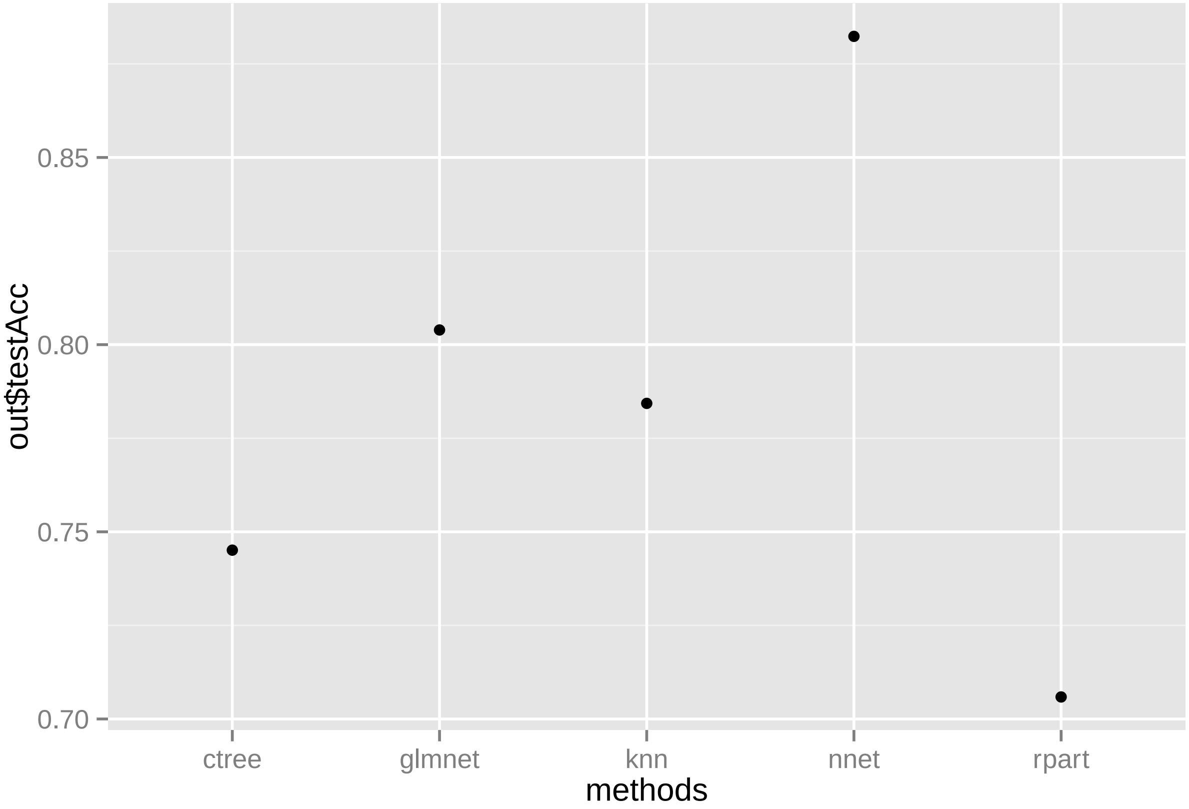
```
library(caret)
library(mlbench)
library(ggplot2)
data(Sonar)
#str(Sonar)

inTraining <- createDataPartition(Sonar$Class, p = 0.75, list = FALSE)
training <- Sonar[inTraining, ]
testing <- Sonar[-inTraining, ]
```

http://topepo.github.io/caret/training.html#pred

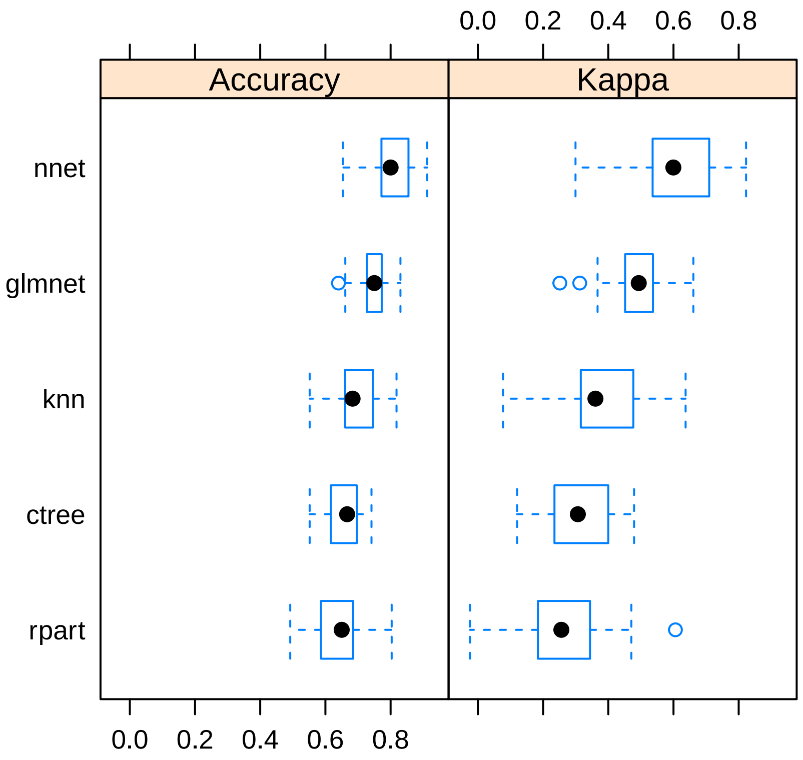
```
#specify method list
methods <- list()
methods <- c("glmnet","rpart","ctree","knn","nnet")



# function
auto.caret <- function(methods,trainData,testData,tune.n){
    n.methods <- length(methods)
    res <- list()

        for(i in 1:n.methods){
            res$trainRes[[i]] <- train(Class ~ ., trainData, method=methods[i],
                                      tuneLength=tune.n)
        }


            resamp.list <- noquote(methods)
            res$resamp <- resamples(res$train,modelNames=methods)

        for(i in 1:n.methods){
            pred <- predict(res$trainRes[[i]],testData)
            res$testAcc[i]<- confusionMatrix(data = pred, testData$Class)$overall[1]
        }

  res
}

# run
out <- auto.caret(methods=methods,trainData=training,testData=testing,tune.n=5)
```

Check out results

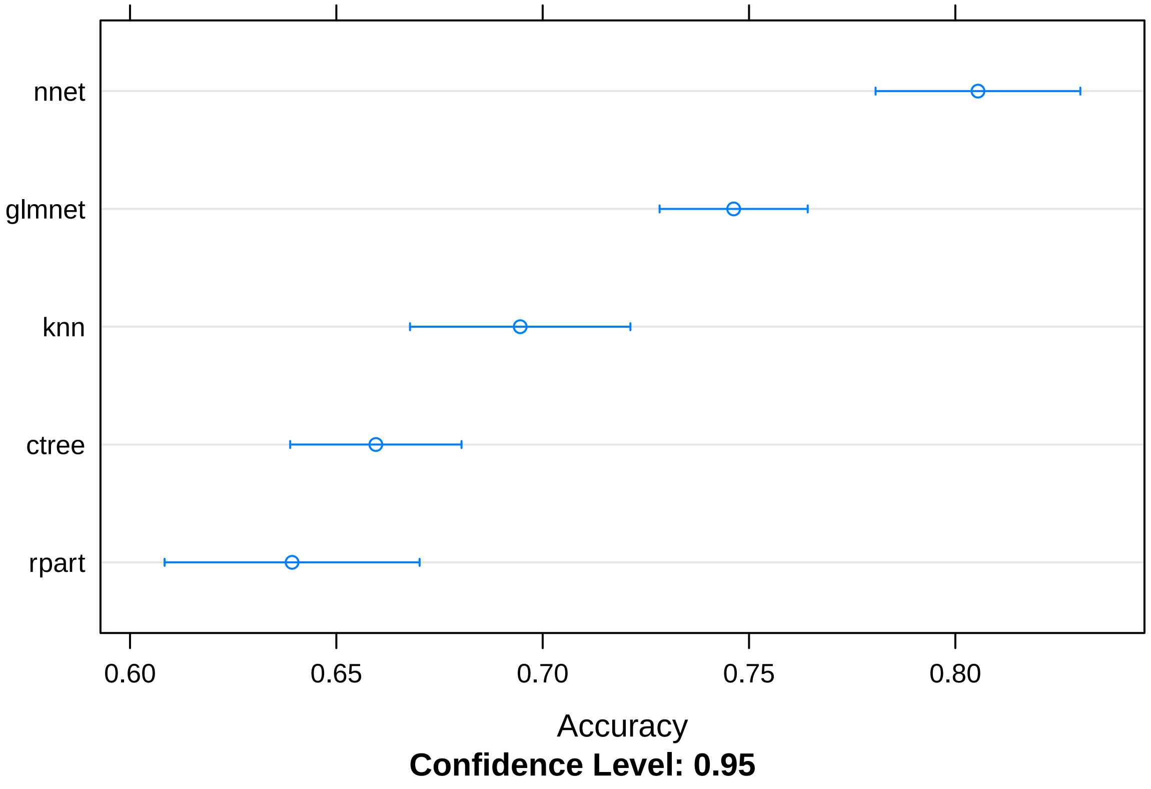
```
#plot(out$trainRes[[4]],main=methods[4])
qplot(x=methods,y=out$testAcc)
```



```
bwplot(out$resamp, layout = c(3, 1))
```



```
dotplot(out$resamp, metric = "Accuracy")
```


nnet
glmnet
knn
ctree
rpart
Accuracy
Confidence Level: 0.95