

LDA

```
#```{r child="classif_lda.Rmd", echo=FALSE}
#```

library(mlr3)

## Warning: package 'mlr3' was built under R version 3.6.3
library(mlr3viz)

## Warning: package 'mlr3viz' was built under R version 3.6.3
library(precrec)

## Warning: package 'precrec' was built under R version 3.6.3
library(mlr3learners)

## Warning: package 'mlr3learners' was built under R version 3.6.3
path <- getwd()
source("../read_data.R")

##
## Attaching package: 'janitor'
## The following objects are masked from 'package:stats':
##
##      chisq.test, fisher.test

setwd(path)
source("../train.R")

# define lda learner with cross validation (resampling)
learner <- lrn("classif_lda", id = "lda")
resampling = rsmp("cv", folds = 5)

#model <- train_model(tasks[["dl"]][["dummy"]], learner, resampling)
#evaluate_result(model)

models <- train_all(tasks, learner, resampling)

## [1] "dl_dummy"
## INFO [04:59:41.181] Applying learner 'lda' on task 'dl_dummy' (iter 1/5)
## INFO [04:59:41.815] Applying learner 'lda' on task 'dl_dummy' (iter 2/5)
## INFO [04:59:42.380] Applying learner 'lda' on task 'dl_dummy' (iter 3/5)
## INFO [04:59:42.946] Applying learner 'lda' on task 'dl_dummy' (iter 4/5)
## INFO [04:59:43.375] Applying learner 'lda' on task 'dl_dummy' (iter 5/5)
## <ResampleResult> of 5 iterations
## * Task: dl_dummy
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
## [1] "dl_oh"
## INFO [04:59:43.893] Applying learner 'lda' on task 'dl_oh' (iter 1/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
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## INFO [04:59:44.449] Applying learner 'lda' on task 'dl_oh' (iter 2/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:45.123] Applying learner 'lda' on task 'dl_oh' (iter 3/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:45.806] Applying learner 'lda' on task 'dl_oh' (iter 4/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:46.405] Applying learner 'lda' on task 'dl_oh' (iter 5/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## <ResampleResult> of 5 iterations
## * Task: dl_oh
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
## [1] "dl_iv"
## INFO [04:59:47.054] Applying learner 'lda' on task 'dl_iv' (iter 1/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:47.339] Applying learner 'lda' on task 'dl_iv' (iter 2/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:47.623] Applying learner 'lda' on task 'dl_iv' (iter 3/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:48.020] Applying learner 'lda' on task 'dl_iv' (iter 4/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:48.294] Applying learner 'lda' on task 'dl_iv' (iter 5/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## <ResampleResult> of 5 iterations
## * Task: dl_iv
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
## [1] "mf_dummy"
## INFO [04:59:48.655] Applying learner 'lda' on task 'mf_dummy' (iter 1/5)
## INFO [04:59:49.328] Applying learner 'lda' on task 'mf_dummy' (iter 2/5)
## INFO [04:59:50.109] Applying learner 'lda' on task 'mf_dummy' (iter 3/5)
## INFO [04:59:50.911] Applying learner 'lda' on task 'mf_dummy' (iter 4/5)
## INFO [04:59:51.585] Applying learner 'lda' on task 'mf_dummy' (iter 5/5)
## <ResampleResult> of 5 iterations
## * Task: mf_dummy
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
## [1] "mf_oh"
## INFO [04:59:52.353] Applying learner 'lda' on task 'mf_oh' (iter 1/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:53.240] Applying learner 'lda' on task 'mf_oh' (iter 2/5)

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## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:54.209] Applying learner 'lda' on task 'mf_oh' (iter 3/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:55.185] Applying learner 'lda' on task 'mf_oh' (iter 4/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:55.990] Applying learner 'lda' on task 'mf_oh' (iter 5/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## <ResampleResult> of 5 iterations
## * Task: mf_oh
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
## [1] "mf_iv"
## INFO [04:59:56.992] Applying learner 'lda' on task 'mf_iv' (iter 1/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:57.358] Applying learner 'lda' on task 'mf_iv' (iter 2/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:57.743] Applying learner 'lda' on task 'mf_iv' (iter 3/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:58.131] Applying learner 'lda' on task 'mf_iv' (iter 4/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [04:59:58.528] Applying learner 'lda' on task 'mf_iv' (iter 5/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## <ResampleResult> of 5 iterations
## * Task: mf_iv
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
## [1] "mice_dummy"
## INFO [04:59:59.096] Applying learner 'lda' on task 'mice_dummy' (iter 1/5)
## INFO [04:59:59.732] Applying learner 'lda' on task 'mice_dummy' (iter 2/5)
## INFO [05:00:00.411] Applying learner 'lda' on task 'mice_dummy' (iter 3/5)
## INFO [05:00:01.097] Applying learner 'lda' on task 'mice_dummy' (iter 4/5)
## INFO [05:00:01.726] Applying learner 'lda' on task 'mice_dummy' (iter 5/5)
## <ResampleResult> of 5 iterations
## * Task: mice_dummy
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
## [1] "mice_oh"
## INFO [05:00:02.609] Applying learner 'lda' on task 'mice_oh' (iter 1/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [05:00:03.433] Applying learner 'lda' on task 'mice_oh' (iter 2/5)
## Warning in lda.default(x, grouping, ...): variables are collinear

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## INFO [05:00:04.406] Applying learner 'lda' on task 'mice_oh' (iter 3/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [05:00:05.222] Applying learner 'lda' on task 'mice_oh' (iter 4/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [05:00:06.043] Applying learner 'lda' on task 'mice_oh' (iter 5/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## <ResampleResult> of 5 iterations
## * Task: mice_oh
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
## [1] "mice_iv"
## INFO [05:00:06.937] Applying learner 'lda' on task 'mice_iv' (iter 1/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [05:00:07.333] Applying learner 'lda' on task 'mice_iv' (iter 2/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [05:00:07.719] Applying learner 'lda' on task 'mice_iv' (iter 3/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [05:00:08.091] Applying learner 'lda' on task 'mice_iv' (iter 4/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## INFO [05:00:08.585] Applying learner 'lda' on task 'mice_iv' (iter 5/5)
## Warning in lda.default(x, grouping, ...): variables are collinear
## <ResampleResult> of 5 iterations
## * Task: mice_iv
## * Learner: lda
## * Warnings: 0 in 0 iterations
## * Errors: 0 in 0 iterations
for(m in models){
  name <- m$task$id
  acc <- m$prediction()$score(msr("classif.acc"))[[1]]
  print(sprintf("%10s: %.4f", name, acc))
}

## [1] " dl_dummy: 0.9841"
## [1] "    dl_oh: 0.9841"
## [1] "    dl_iv: 0.9838"
## [1] " mf_dummy: 0.9843"
## [1] "    mf_oh: 0.9843"
## [1] "    mf_iv: 0.9838"
## [1] "mice_dummy: 0.9843"
## [1] "   mice_oh: 0.9843"
## [1] "   mice_iv: 0.9838"

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