rm(list=ls())

library("ElemStatLearn")

library("clustvarsel")

data(nci)

dim(nci)

dat <- apply(nci,1,var)

highdat <- order(dat, decreasing = T)[1:250]

nci <- nci[highdat, ]

ncicol <- as.factor(colnames(nci))

nci <- t(nci)

nci <- data.frame(cl = ncicol, nci)

clust.fit <- clustvarsel(nci, G = 1:9, search = "greedy", direction = "forward")

clust.fit

clust.fit$subset

Output of this code clustvarsel

Stepwise (forward/backward) greedy search

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Variable proposed Type of step BIC difference Decision

1 X99 Add 147.10967 Accepted

2 X39 Add 131.58678 Accepted

3 X60 Add 323.07781 Accepted

4 X99 Remove 51.05747 Rejected

5 X200 Add 34.32259 Accepted

6 X39 Remove -11.97349 Accepted

7 X39 Add -11.97349 Rejected

8 X99 Remove 103.59784 Rejected

Selected subset: X99, X60, X200

> clust.fit$subset

X99 X60 X200

100 61 201

> clust.fit1

Headlong (forward/backward) search

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Variable proposed Type of step BIC difference Decision

1 X99 Add 147.109669 Accepted

2 X64 Add 50.917093 Accepted

3 X39 Add 12.032581 Accepted

4 X64 Remove -68.637103 Accepted

5 X60 Add 323.077814 Accepted

6 X60 Remove 323.077814 Rejected

7 X204 Add 2.814599 Accepted

8 X204 Remove 2.814599 Rejected

9 X200 Add 6.423350 Accepted

10 X204 Remove -25.084643 Accepted

11 X234 Add 13.622079 Accepted

12 X234 Remove 13.622079 Rejected

13 X191 Add -21.829725 Rejected

14 X234 Remove 13.622079 Rejected

Selected subset: X99, X39, X60, X200, X234

> clust.fit1$subset

X99 X39 X60 X200 X234

100 40 61 201 235