## Feature Selection with Forward Sequential Selection (FSS)

Forward Sequential Selection starts from an empty set and iteratively adds the feature that most improves a chosen criterion (e.g., validation accuracy), stopping by a rule or when performance no longer improves.

This example uses FSS (forward sequential selection) to build a subset of features by adding, at each step, the feature that most improves the evaluation criterion.

Prerequisites - R packages: daltoolbox, daltoolboxdp

# Feature Selection  
  
# Installation (if needed)  
#install.packages("daltoolboxdp")

# Loading packages  
library(daltoolbox)  
library(daltoolboxdp)

# Example data  
iris <- datasets::iris

# FSS - step by step  
  
# 1) Fit the selector with target "Species"  
myfeature <- fit(fs\_fss("Species"), iris)  
  
# 2) View selected features  
print(myfeature$features)

## [1] "Sepal.Length" "Petal.Length" "Petal.Width"

# 3) Transform data to keep selected features + target  
data <- transform(myfeature, iris)  
print(head(data))

## Sepal.Length Petal.Length Petal.Width Species  
## 1 5.1 1.4 0.2 setosa  
## 2 4.9 1.4 0.2 setosa  
## 3 4.7 1.3 0.2 setosa  
## 4 4.6 1.5 0.2 setosa  
## 5 5.0 1.4 0.2 setosa  
## 6 5.4 1.7 0.4 setosa

References - Whitney, A. W. (1971). A direct method of nonparametric measurement selection. IEEE Trans. Computers, 20(9), 1100–1103.