Blatt 05

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Aufgabe 1

Mittelwerte

Die Mittelwerte der drei Populationen

$$\mu_{\mathrm{P1}} = \begin{pmatrix} 6.01 \\ 3.01 \end{pmatrix} \text{ , } \mu_{P-0-10000} = \begin{pmatrix} 0.03 \\ 3.03 \end{pmatrix} \text{ und } \mu_{P-0-1000} = \begin{pmatrix} 0.01 \\ 3.01 \end{pmatrix} \tag{1}$$

Kovarianzmatrizen

Die Summierten Kovarianzmatrizen sind

$$S^{P0} = \begin{pmatrix} 121388.56 & 81082.17 \\ 81082.17 & 66628.71 \end{pmatrix} \text{ und } S^{P1} = \begin{pmatrix} 123917.64 & 8719.56 \\ 8719.56 & 43976.48 \end{pmatrix} \tag{2}$$

Die Summierte Kovarianzmatrix hat die From

$$S^{P01,P00} = \begin{pmatrix} 245306.20 & 898011.72 \\ 89801.72 & 110605.19 \end{pmatrix} \tag{3}$$

Fisher-Diskriiminante

Die Fisherdiskrimante λ beträgt

$$\lambda = \begin{pmatrix} -0.77 \\ 0.63 \end{pmatrix} \tag{4}$$

Die Gradengleichung ergibt sich somit zu

$$f(x) = -0.82 \cdot x \text{ bzw } x_i = \lambda^T \vec{x}_i \tag{5}$$

Population

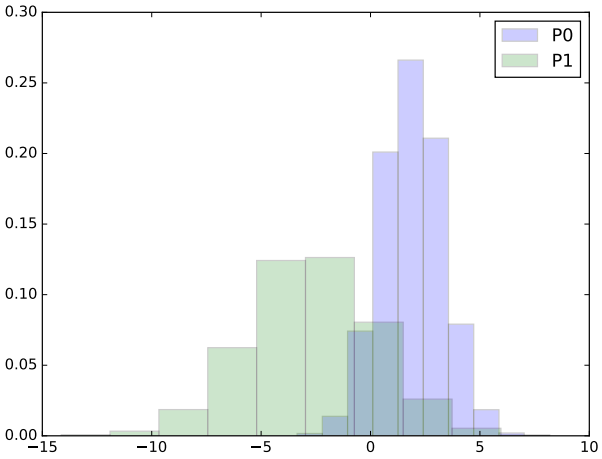


Abbildung 1: Abbildung der Populstionen auf die Grade

Reinheit

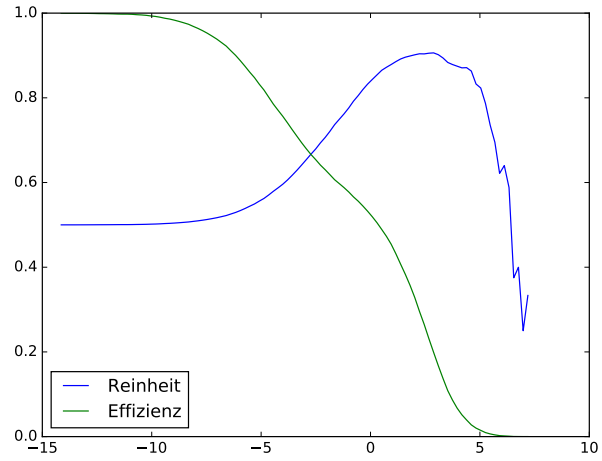


Abbildung 2: Reinheit in Abhängigkeit des Schnittes

Signal zu Untergrundverhältnis

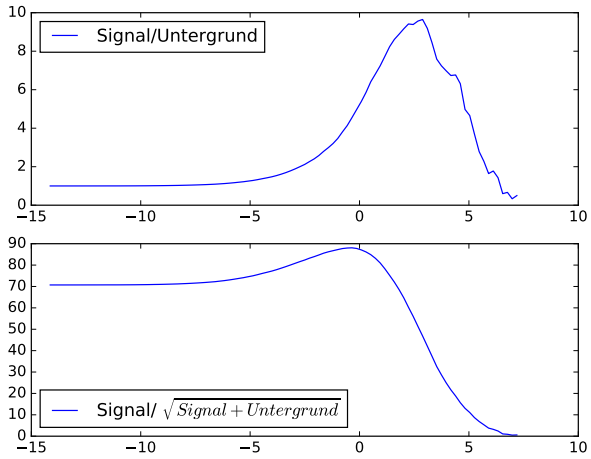


Abbildung 3: Signal zu Untergrundverhältnis sowie Signifikanz

Für die andere Population

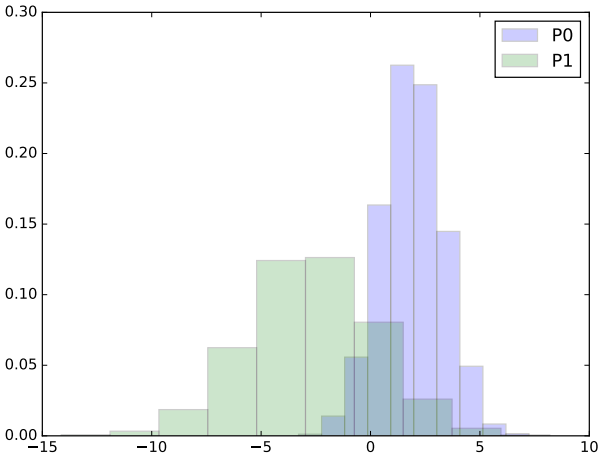


Abbildung 4: Abbildung der Populstionen auf die Grade

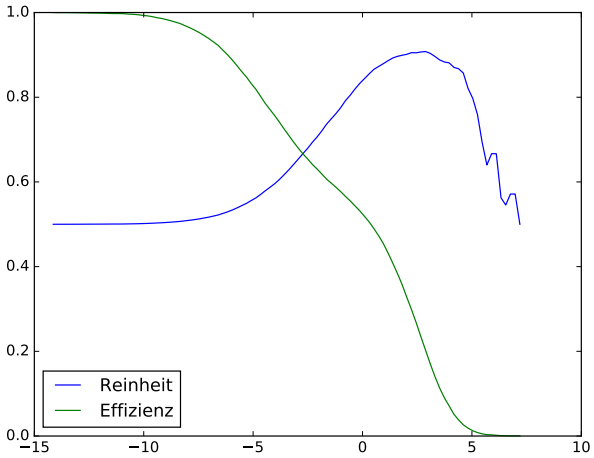


Abbildung 5: Reinheit in Abhängigkeit des Schnittes

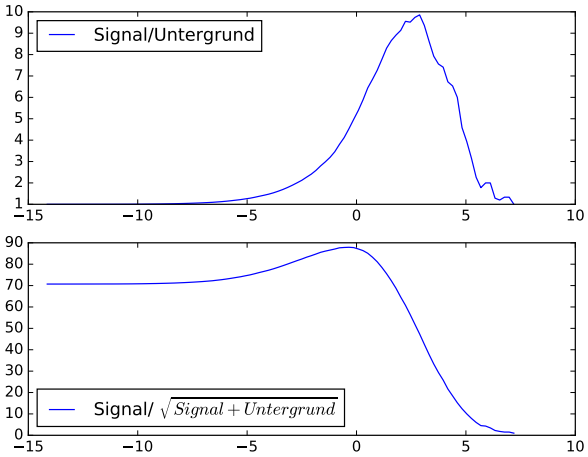
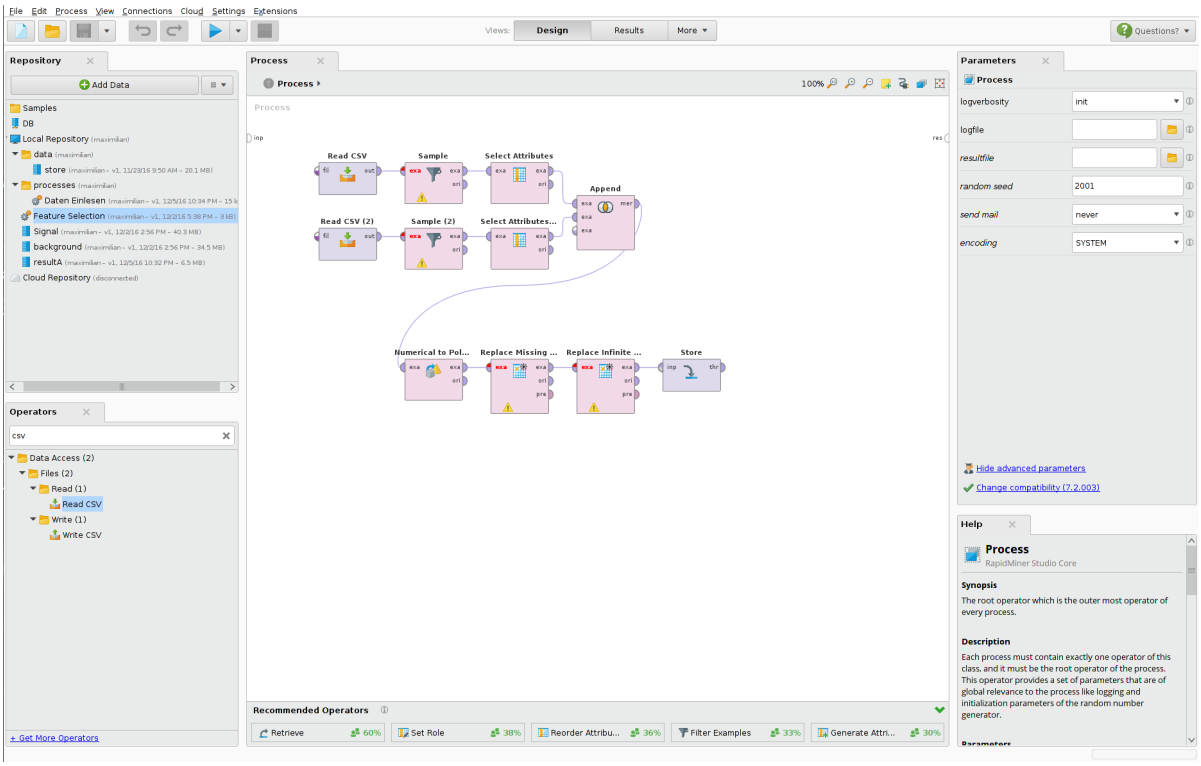


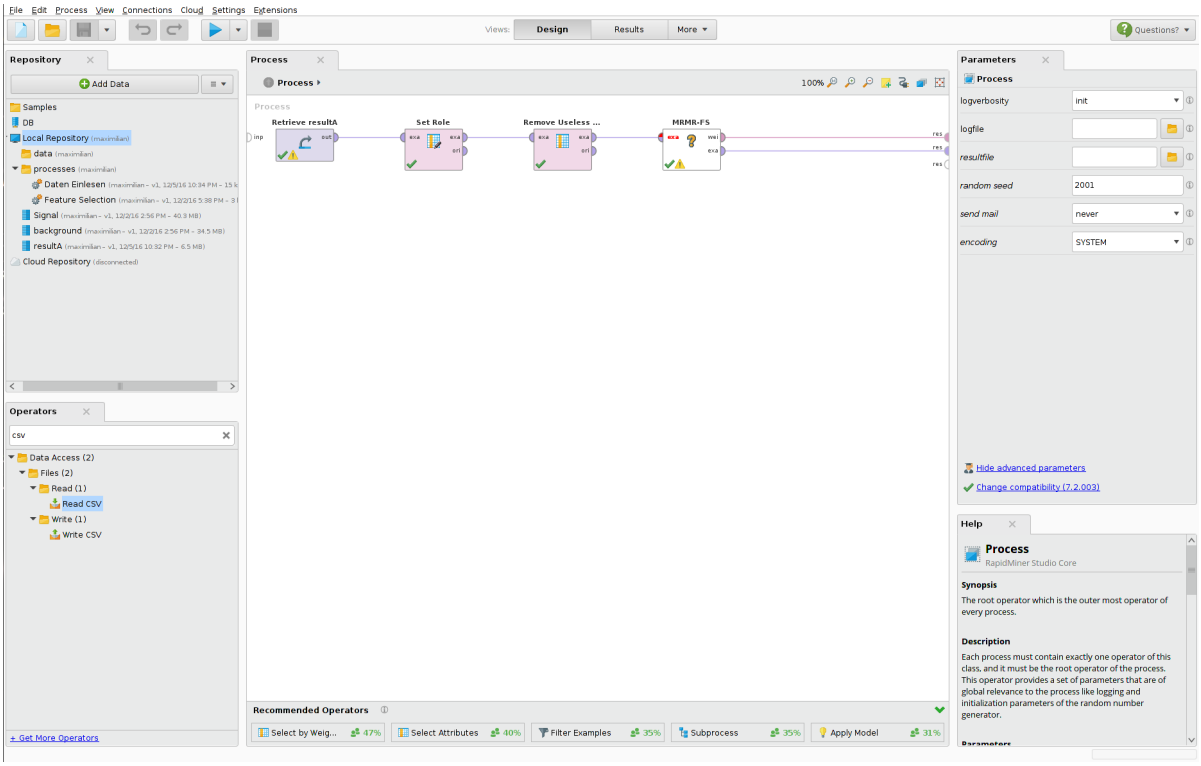
Abbildung 6: Signal zu Untergrundverhältnis sowie Signifikanz

Aufgabe 3

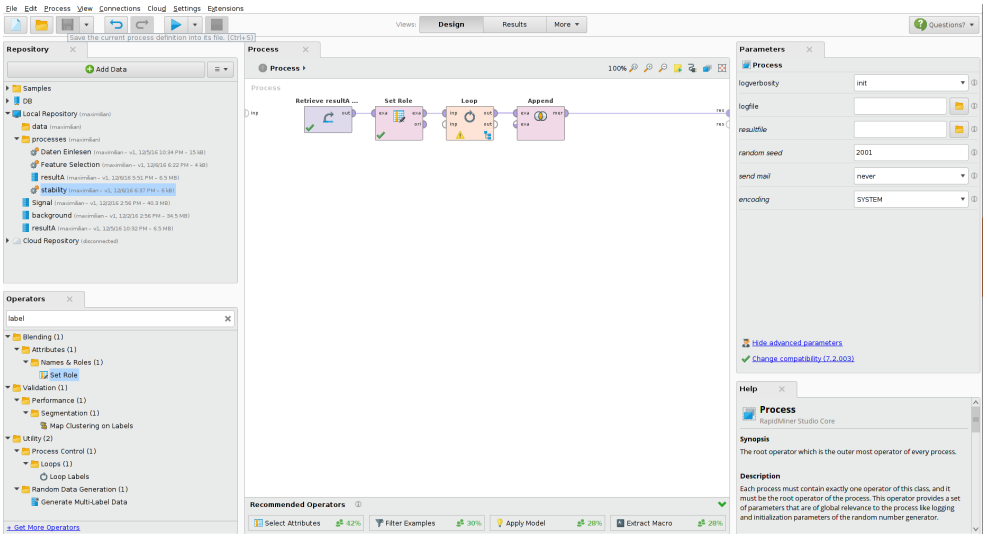
Einlesen und aussortieren der Daten

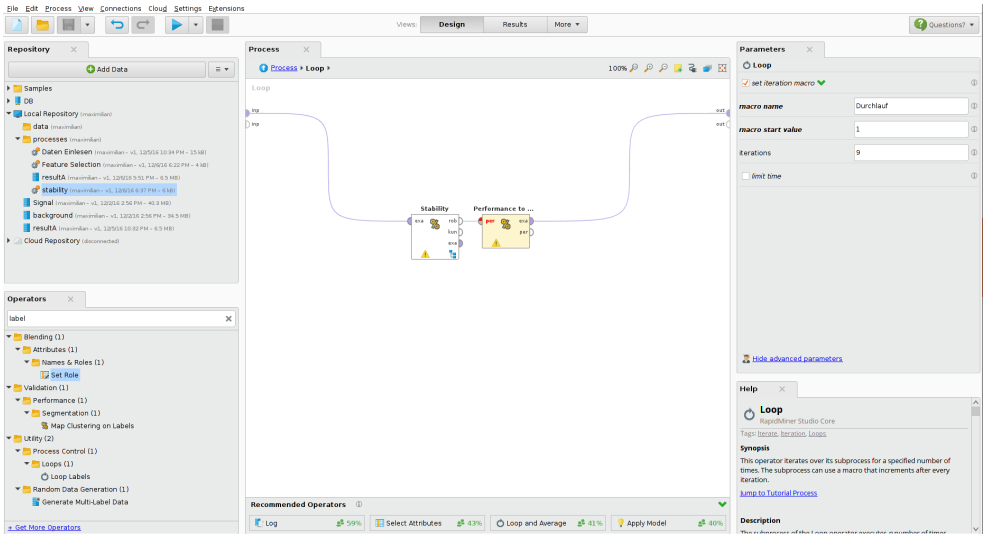


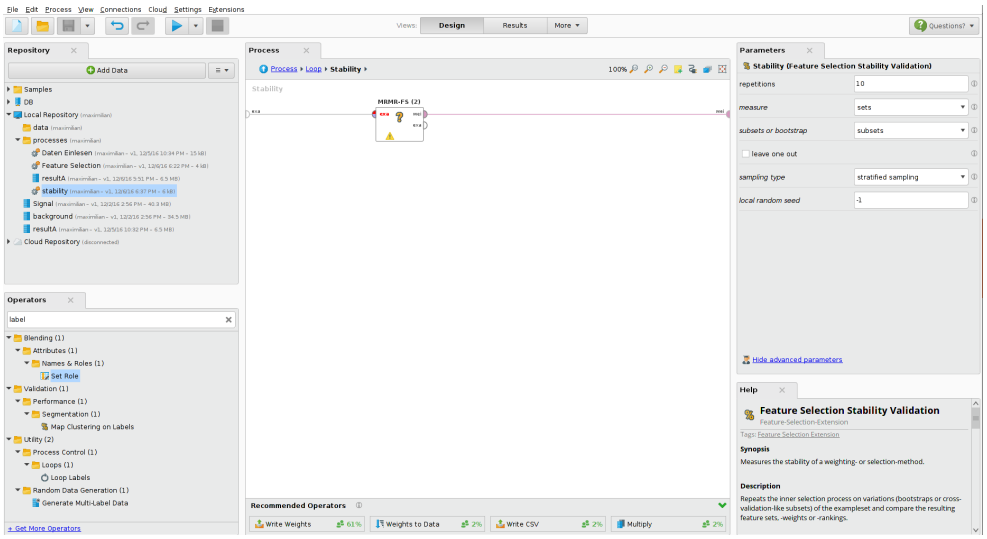
Feature Selection



0.1 Stabilität




File Edit Process View Connections Cloud Settings Extensions
Views: Design Results More
Questions?
Repository
Add Data
Samples
DB
Local Repository (maximilian)
data (maximilian)
processes (maximilian)
Daten Einlesen (maximilian - v1, 12/5/16 10:34 PM - 15 kB)
Feature Selection (maximilian - v1, 12/6/16 6:22 PM - 4 kB)
resultA (maximilian - v1, 12/6/16 5:51 PM - 6.5 MB)
stability (maximilian - v1, 12/6/16 6:37 PM - 6 kB)
Signal (maximilian - v1, 12/2/16 2:56 PM - 40.3 MB)
background (maximilian - v1, 12/2/16 2:56 PM - 34.5 MB)
resultA (maximilian - v1, 12/5/16 10:32 PM - 6.5 MB)
Cloud Repository (disconnected)
Operators
label
Blending (1)
Attributes (1)
Names & Roles (1)
Set Role
Validation (1)
Performance (1)
Segmentation (1)
Map Clustering on Labels
Utility (2)
Process Control (1)
Loops (1)
Loop Labels
Random Data Generation (1)
Generate Multi-Label Data
+ Get More Operators
Process
Process ▸ Loop ▸
100%
Loop
Stability
Performance to ...
Recommended Operators
Log 59%
Select Attributes 43%
Loop and Average 41%
Apply Model 40%
Parameters
Loop
set iteration macro
macro name
Durchlauf
macro start value
1
iterations
9
limit time
Hide advanced parameters
Help
Loop
RapidMiner Studio Core
Tags: Iterate, Iteration, Loops
Synopsis
This operator iterates over its subprocess for a specified number of times. The subprocess can use a macro that increments after every iteration.
Jump to Tutorial Process
Description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Signal (maximilian - v1, 12/2/16 2:56 PM - 40.3 MB)
background (maximilian - v1, 12/2/16 2:56 PM - 34.5 MB)
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Generate Multi-Label Data
+ Get More Operators
Process
Process ▸ Loop ▸ Stability ▸
100%
Stability
MRMR-FS (2)
Recommended Operators
Write Weights 61%
Weights to Data 2%
Write CSV 2%
Multiply 2%
Parameters
Stability (Feature Selection Stability Validation)
repetitions
10
measure
sets
subsets or bootstrap
subsets
leave one out
sampling type
stratified sampling
local random seed
-1
Hide advanced parameters
Help
Feature Selection Stability Validation
Feature-Selection-Extension
Tags: Feature Selection Extension
Synopsis
Measures the stability of a weighting- or selection-method.
Description
Repeats the inner selection process on variations (bootstraps or cross-validation-like subsets) of the exampleset and compare the resulting feature sets, -weights or -rankings.