Orange 3 VDPA

Darian Onchis

Visual Data Mining Tool (Open Source)

Data Mining
Fruitful and Fun

Open source machine learning and data visualization for novice and expert. Interactive data analysis workflows with a large toolbox.

Download Orange

https://orange.biolab.si/download/

Windows macOS Linux / Source

Visual Data Mining Tool (Open Source)

ANACONDA.

Data science technology for
human sensemaking.

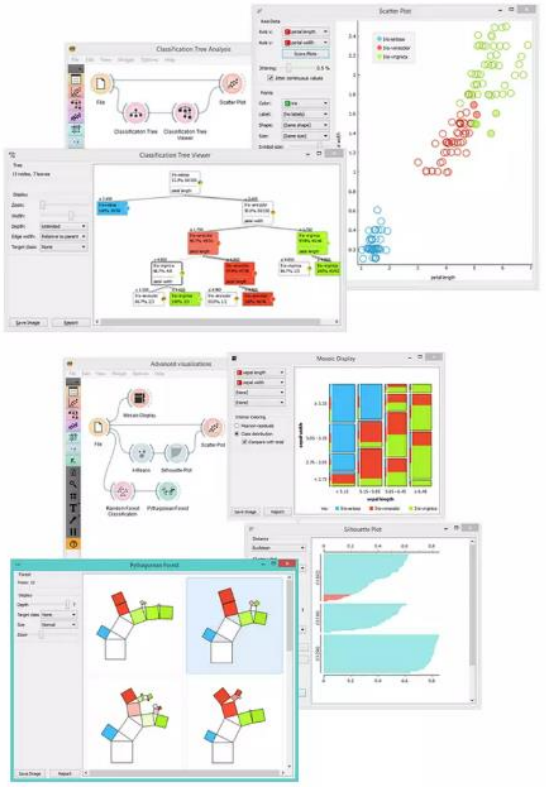
A movement that brings together millions of data science practitioners, data-driven enterprises, and the open source community.

Download

https://www.anaconda.com/products/individual

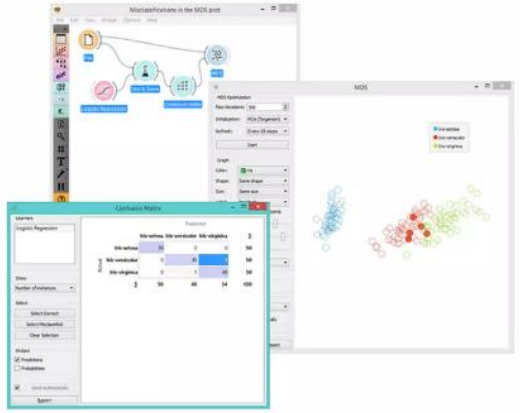
Interactive Data Visualization

Exploratory Data Analysis



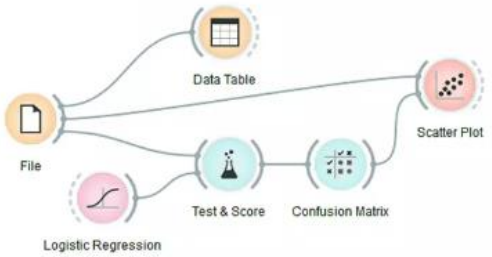
Intelligent Visualizations

Reporting

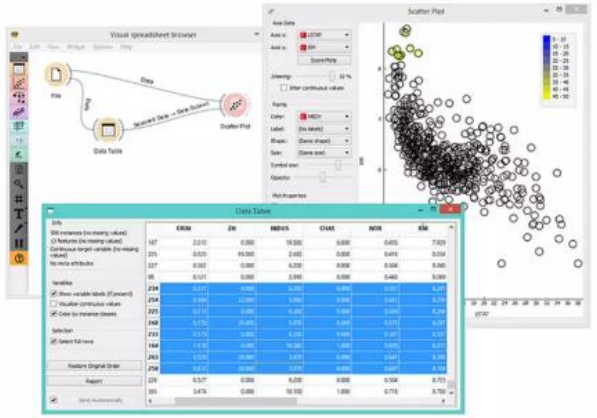


Visual Programming

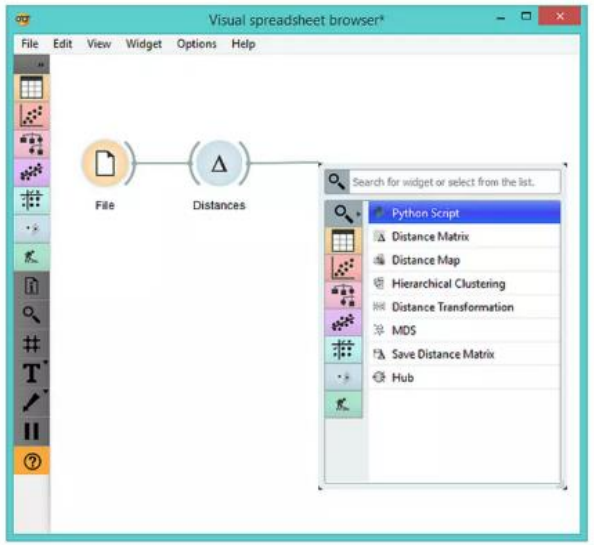
- Component-Based Data Mining



- Interactive Data Exploration

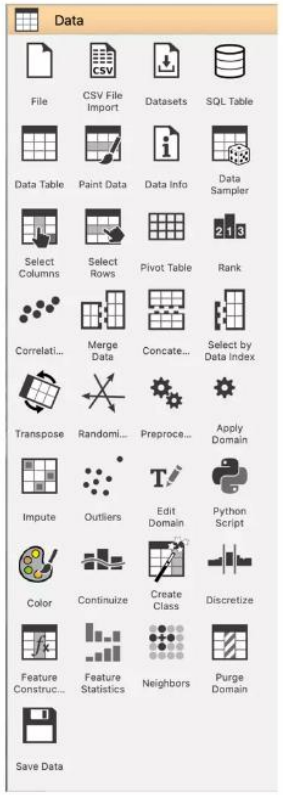


- Clever Workflow Design Interface

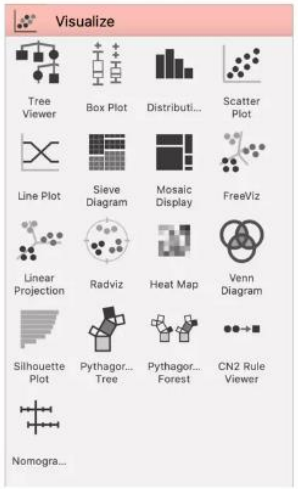


Basic Widget

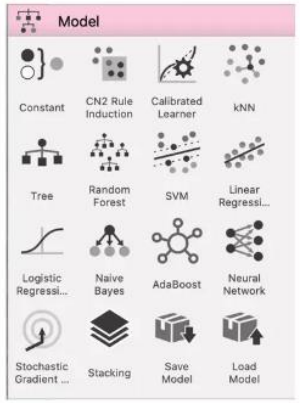
Data



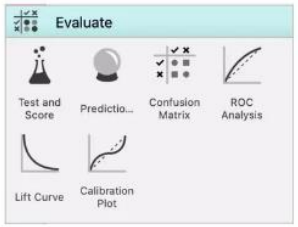
Visualize



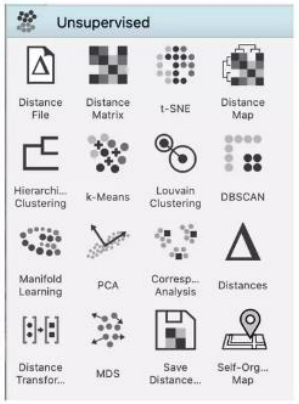
Model



Evaluate

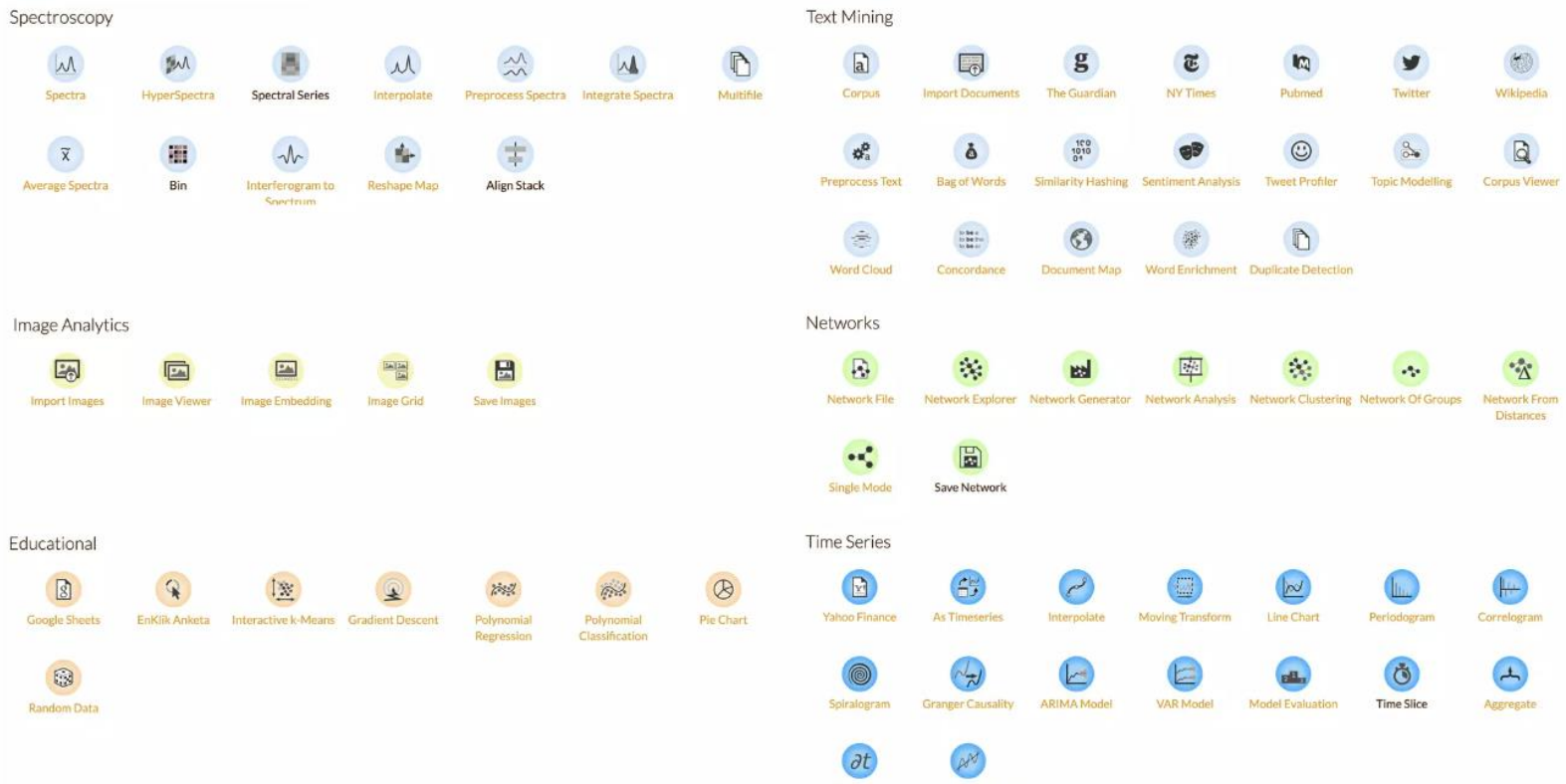


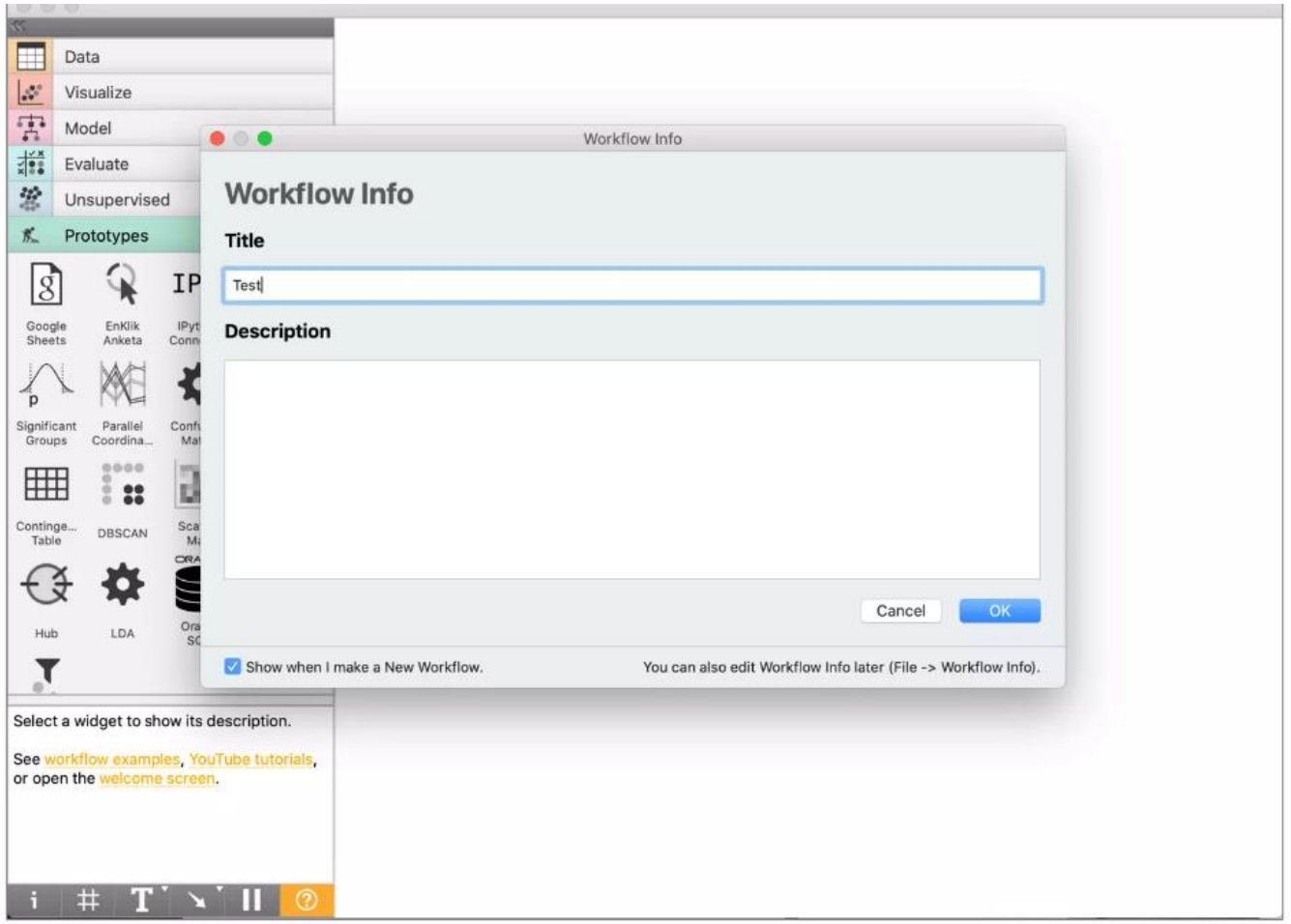
Unsupervised

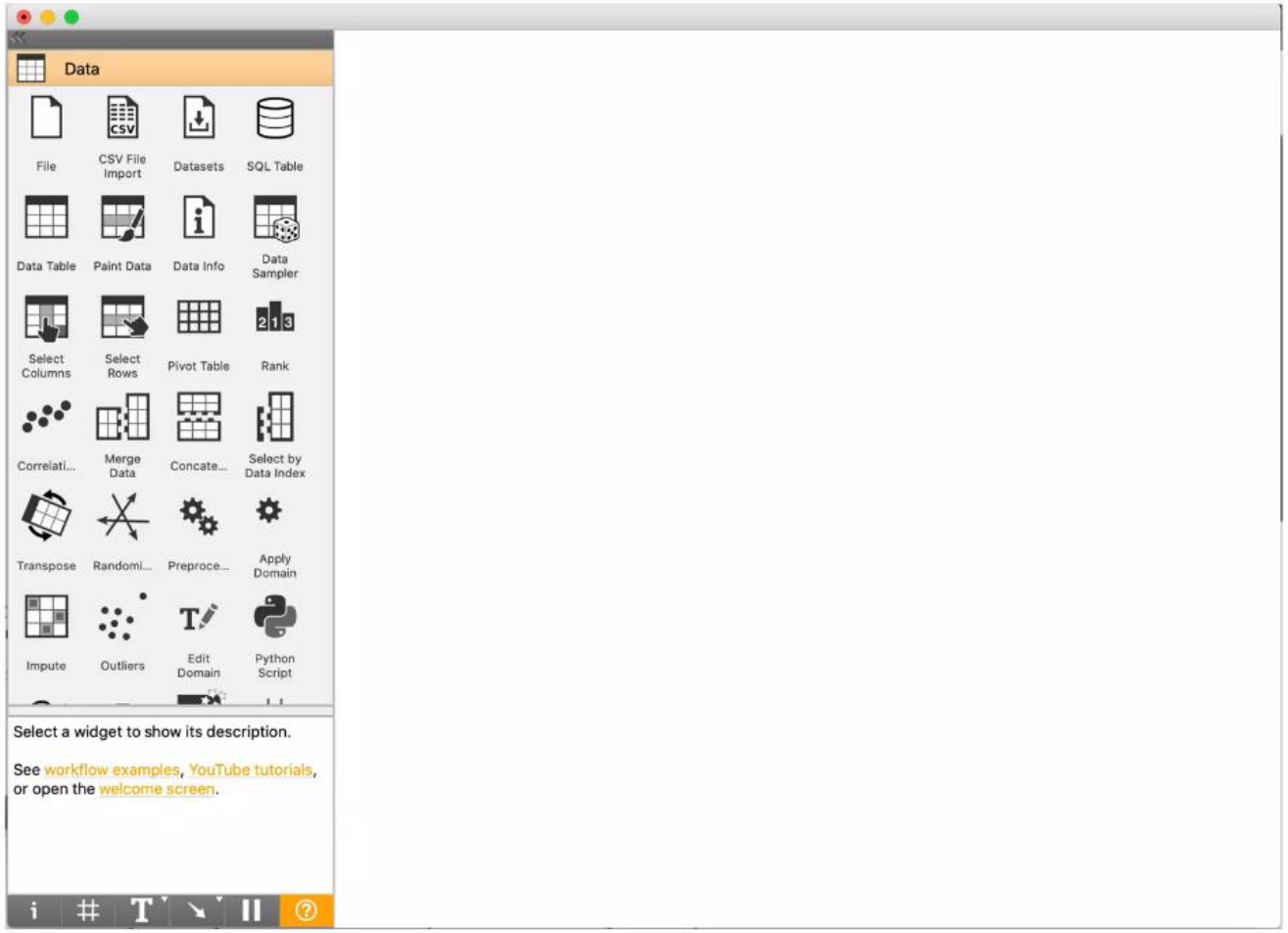


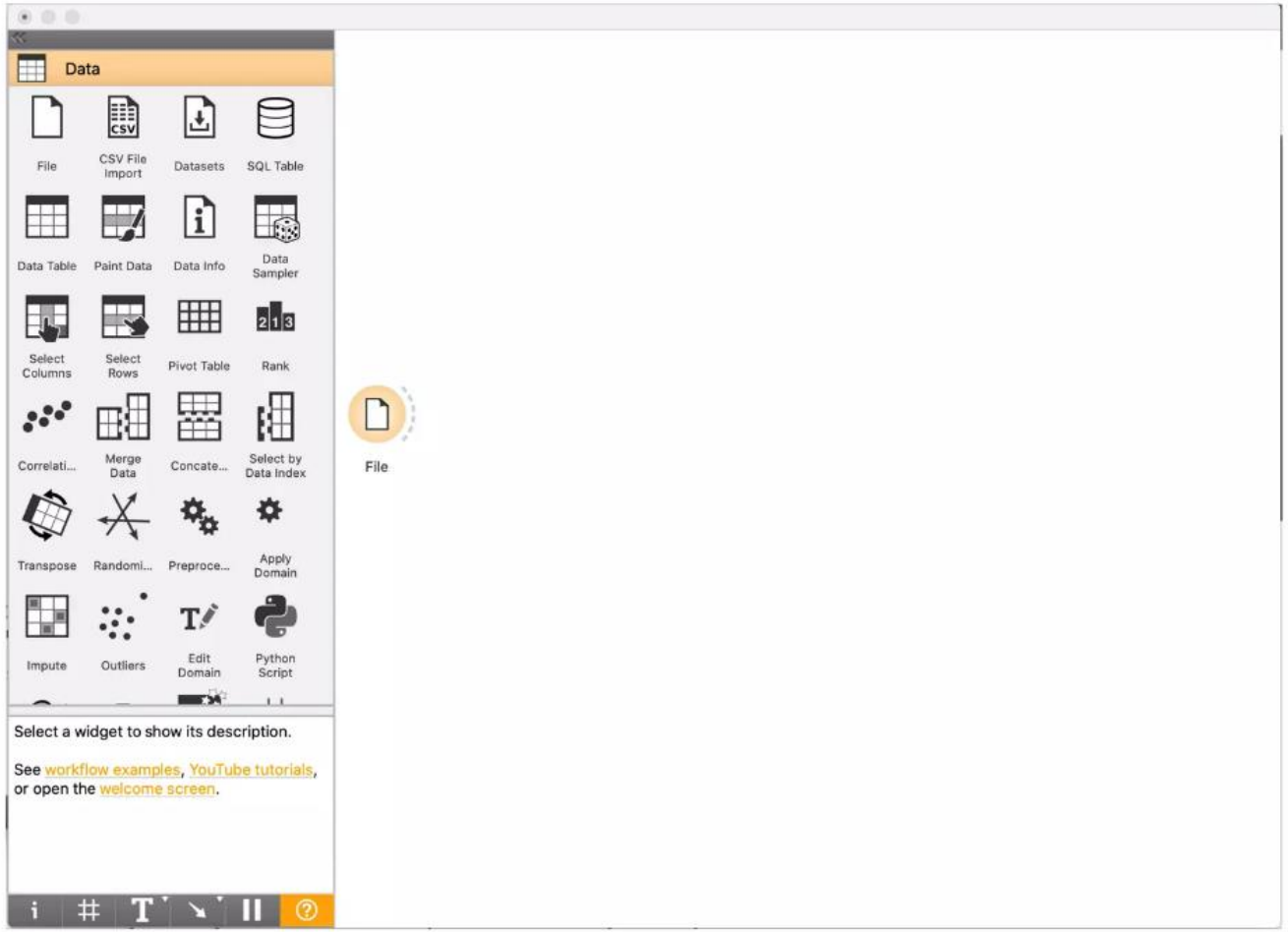
Additional Widget

Spectroscopy, Associate, Bioinformatics, Educational, Geo, ImageAnalytics, Network, Prototypes, SingleCell, Text, Texatable, Timeserise @ Orange 3




Data
Visualize
Model
Evaluate
Unsupervised
Prototypes
Google Sheets
EnKlik Anketa
Significant Groups
Parallel Coordina...
Contingе... Table
DBSCAN
Hub
LDA
Select a widget to show its description.
See workflow examples, YouTube tutorials, or open the welcome screen.
Workflow Info
Workflow Info
Title
Test
Description
Cancel
OK
Show when I make a New Workflow.
You can also edit Workflow Info later (File -> Workflow Info).


Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Columns
Select Rows
Pivot Table
Rank
Correlati...
Merge Data
Concate...
Select by Data Index
Transpose
Randomi...
Preproce...
Apply Domain
Impute
Outliers
Edit Domain
Python Script
Select a widget to show its description.
See workflow examples, YouTube tutorials, or open the welcome screen.


Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Columns
Select Rows
Pivot Table
Rank
Correlati...
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Randomi...
Preproce...
Apply Domain
Impute
Outliers
Edit Domain
Python Script
Select a widget to show its description.
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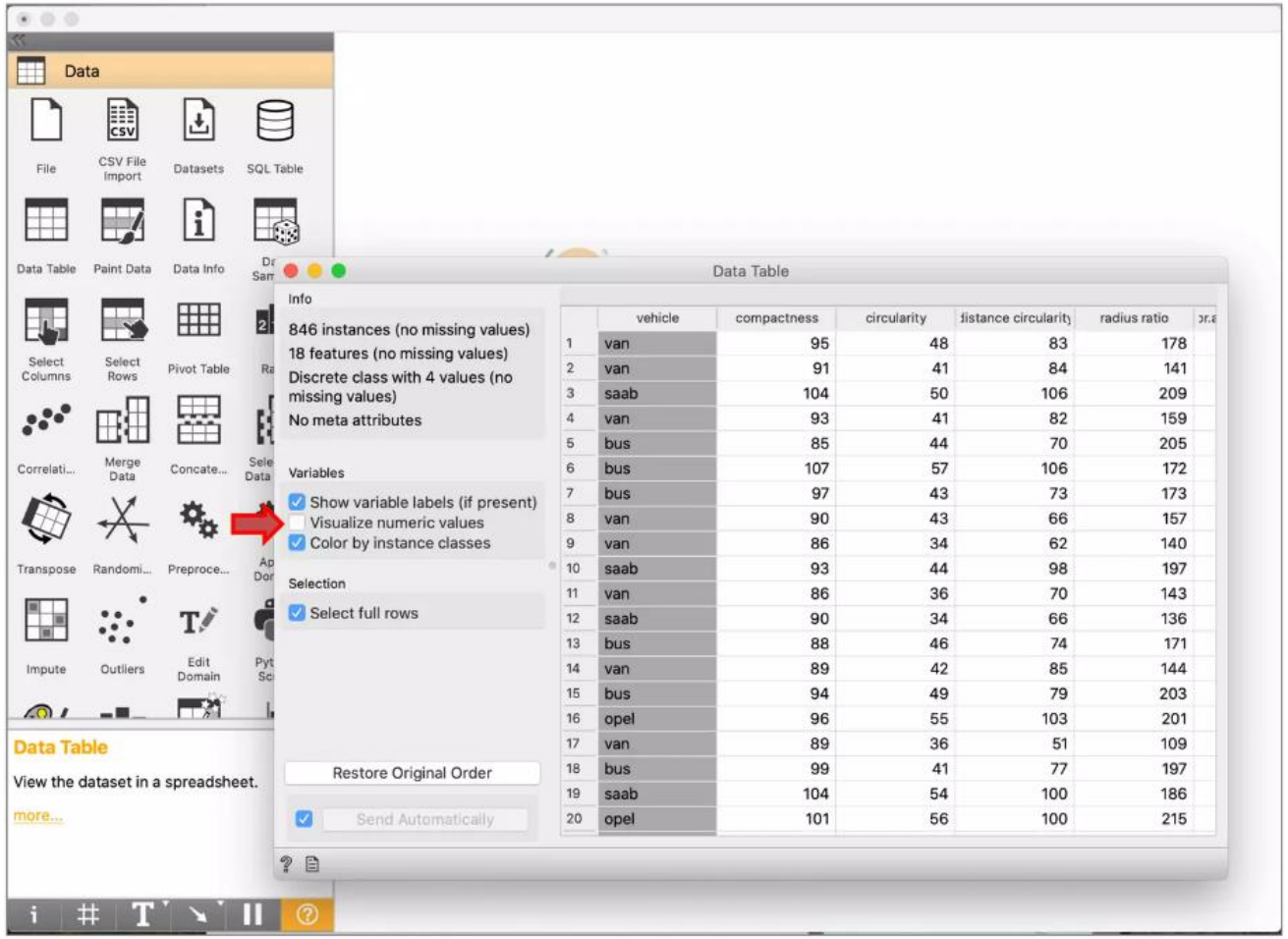
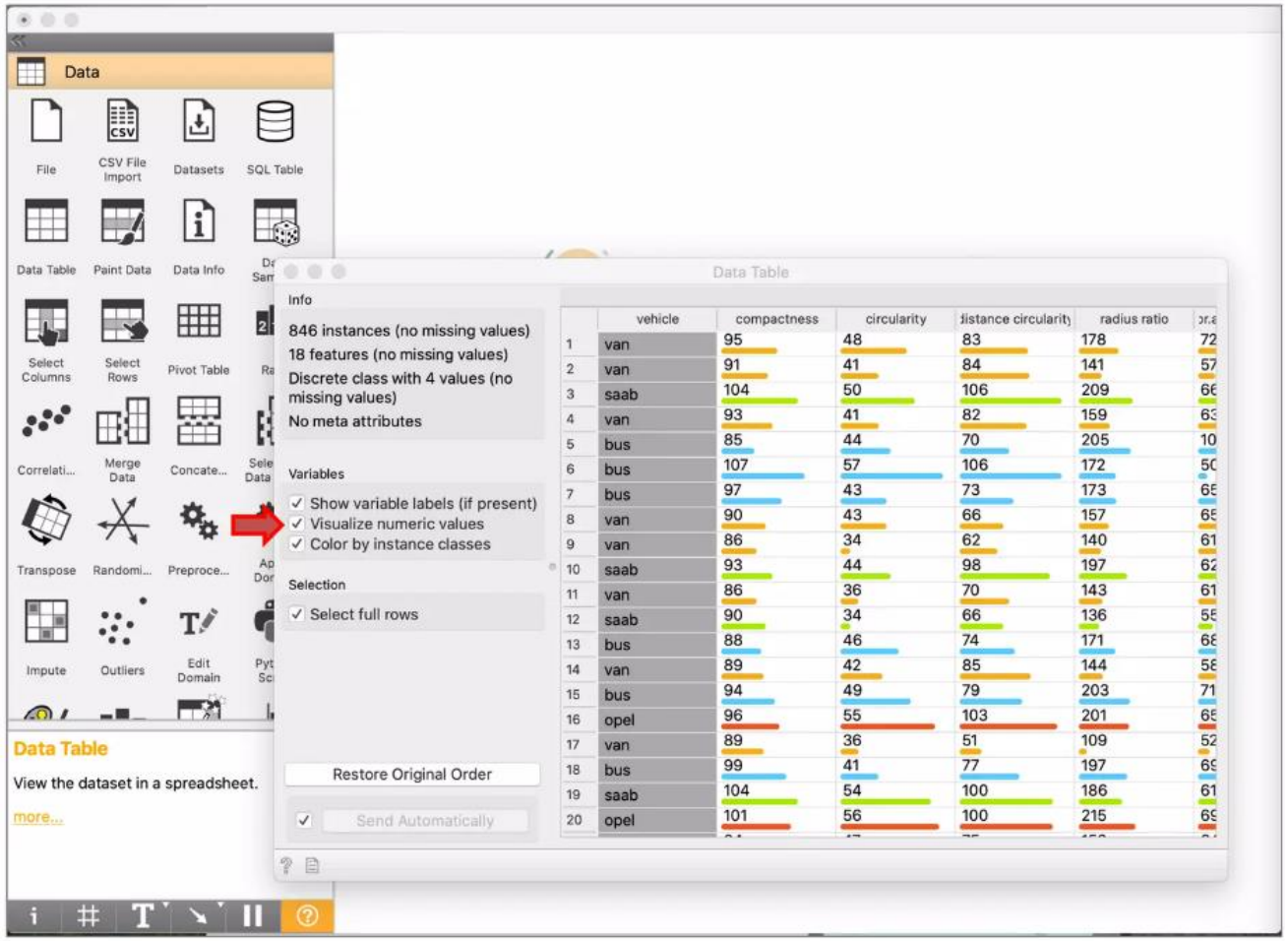
File


Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Select Columns
Select Rows
Pivot Table
Correlati...
Merge Data
Concate...
Transpose
Randomi...
Preproce...
Impute
Outliers
Edit Domain
Data Table
View the dataset in a spreadsheet.
more...
Data Table
Info
846 instances (no missing values)
18 features (no missing values)
Discrete class with 4 values (no missing values)
No meta attributes
Variables
Show variable labels (if present)
Visualize numeric values
Color by instance classes
Selection
Select full rows
Restore Original Order
Send Automatically
vehicle compactness circularity distance circularity radius ratio
1 van 95 48 83 178
2 van 91 41 84 141
3 saab 104 50 106 209
4 van 93 41 82 159
5 bus 85 44 70 205
6 bus 107 57 106 172
7 bus 97 43 73 173
8 van 90 43 66 157
9 van 86 34 62 140
10 saab 93 44 98 197
11 van 86 36 70 143
12 saab 90 34 66 136
13 bus 88 46 74 171
14 van 89 42 85 144
15 bus 94 49 79 203
16 opel 96 55 103 201
17 van 89 36 51 109
18 bus 99 41 77 197
19 saab 104 54 100 186
20 opel 101 56 100 215


Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Select Columns
Select Rows
Pivot Table
Correlati...
Merge Data
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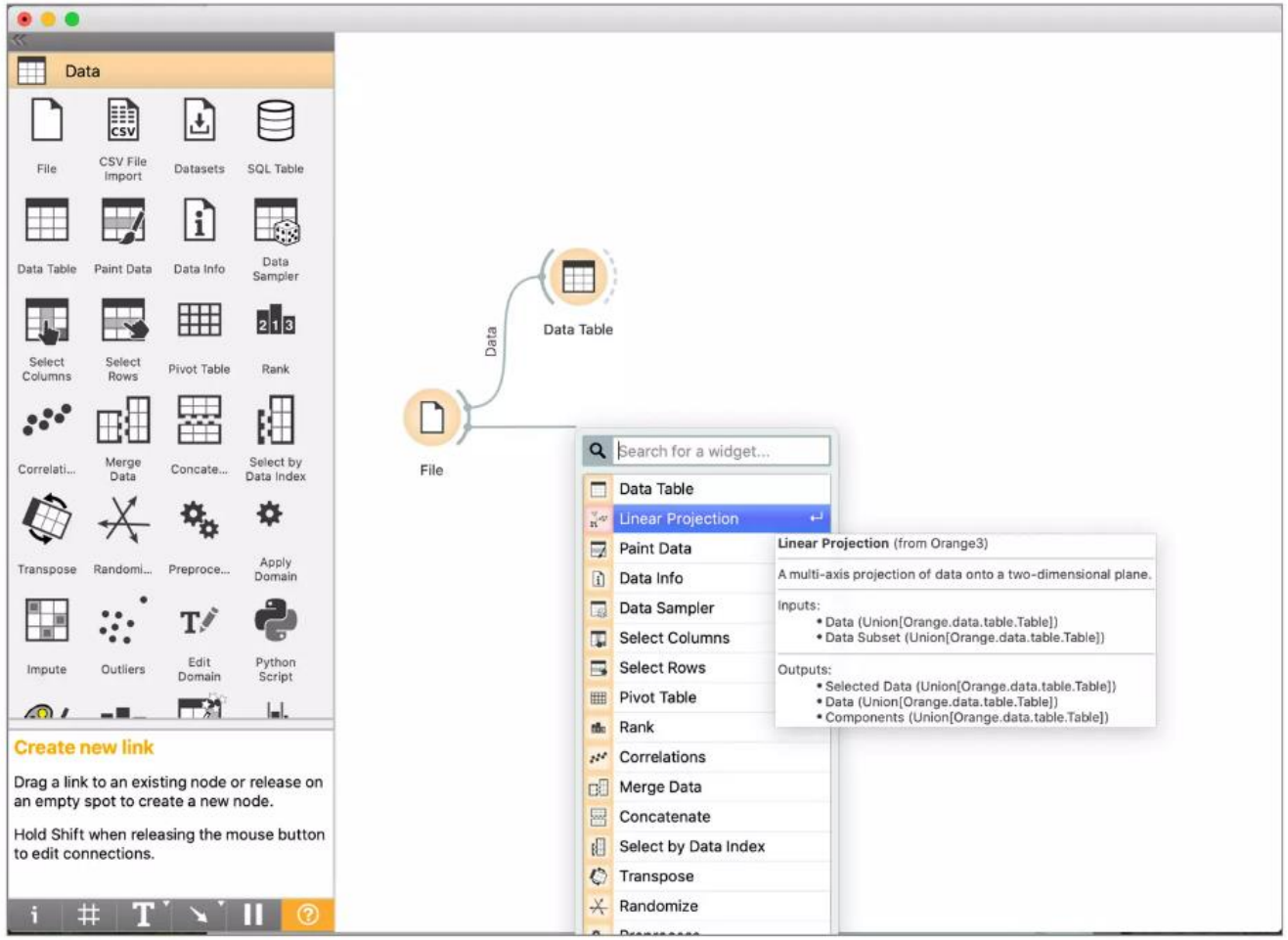
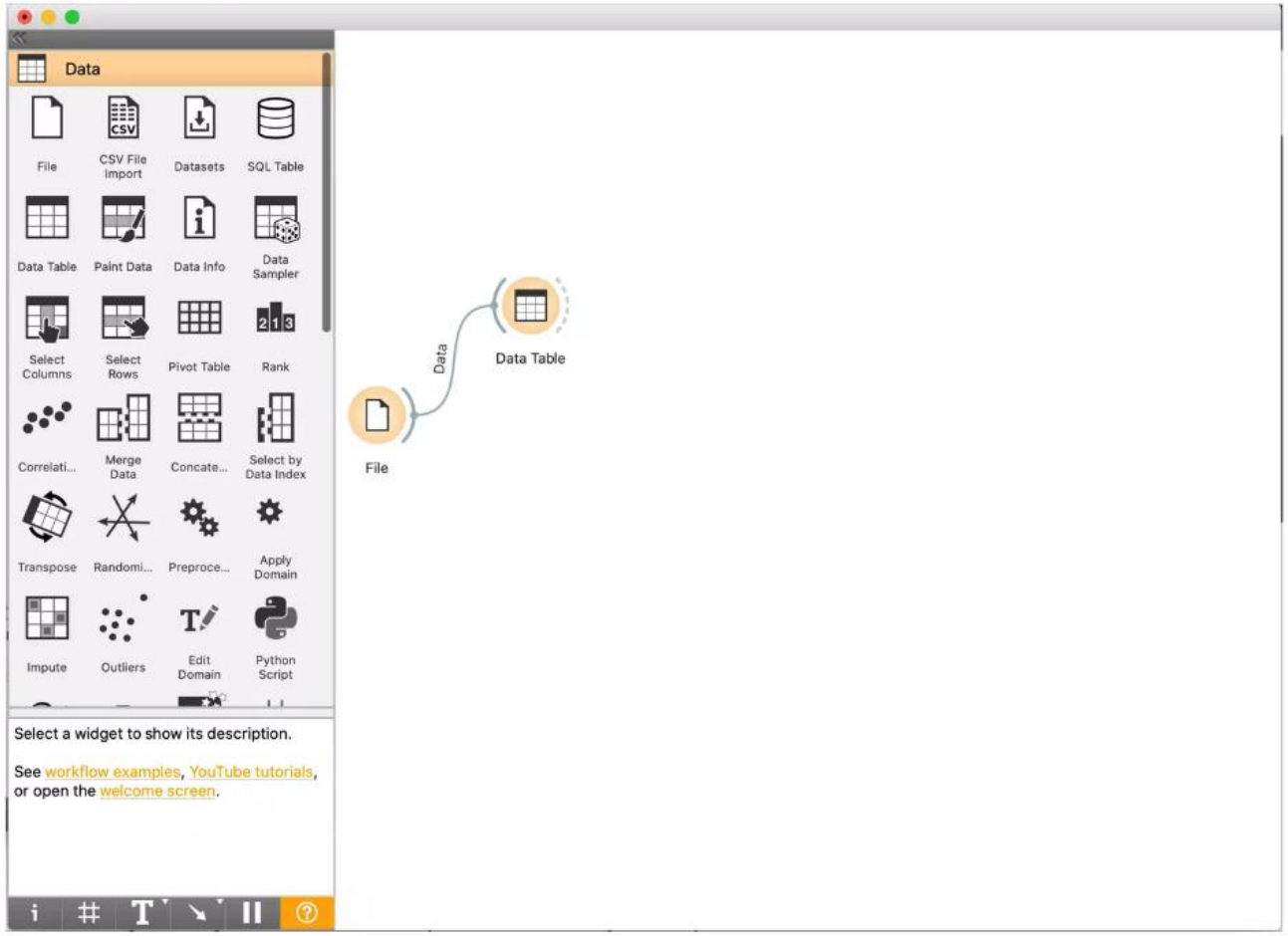
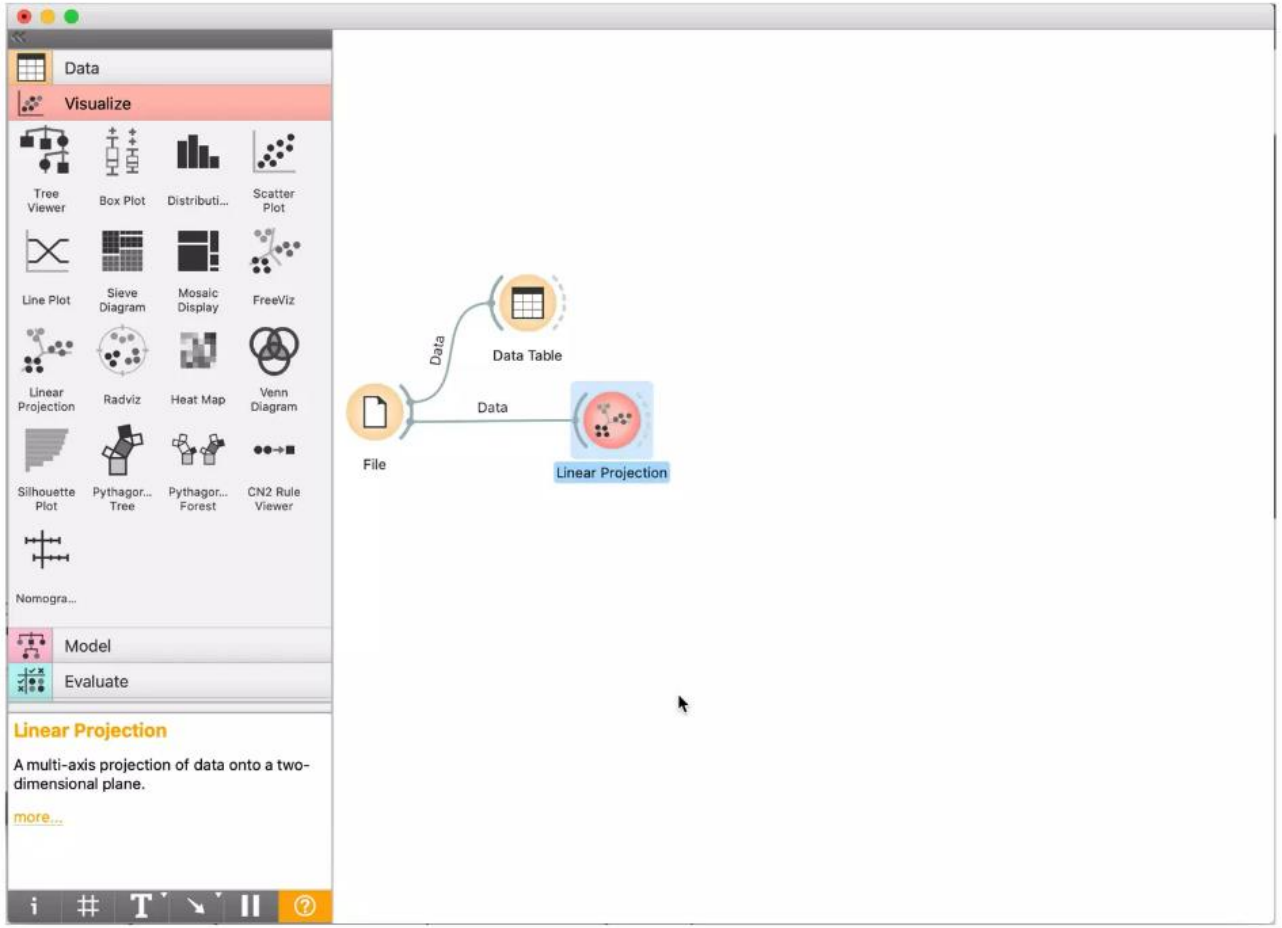
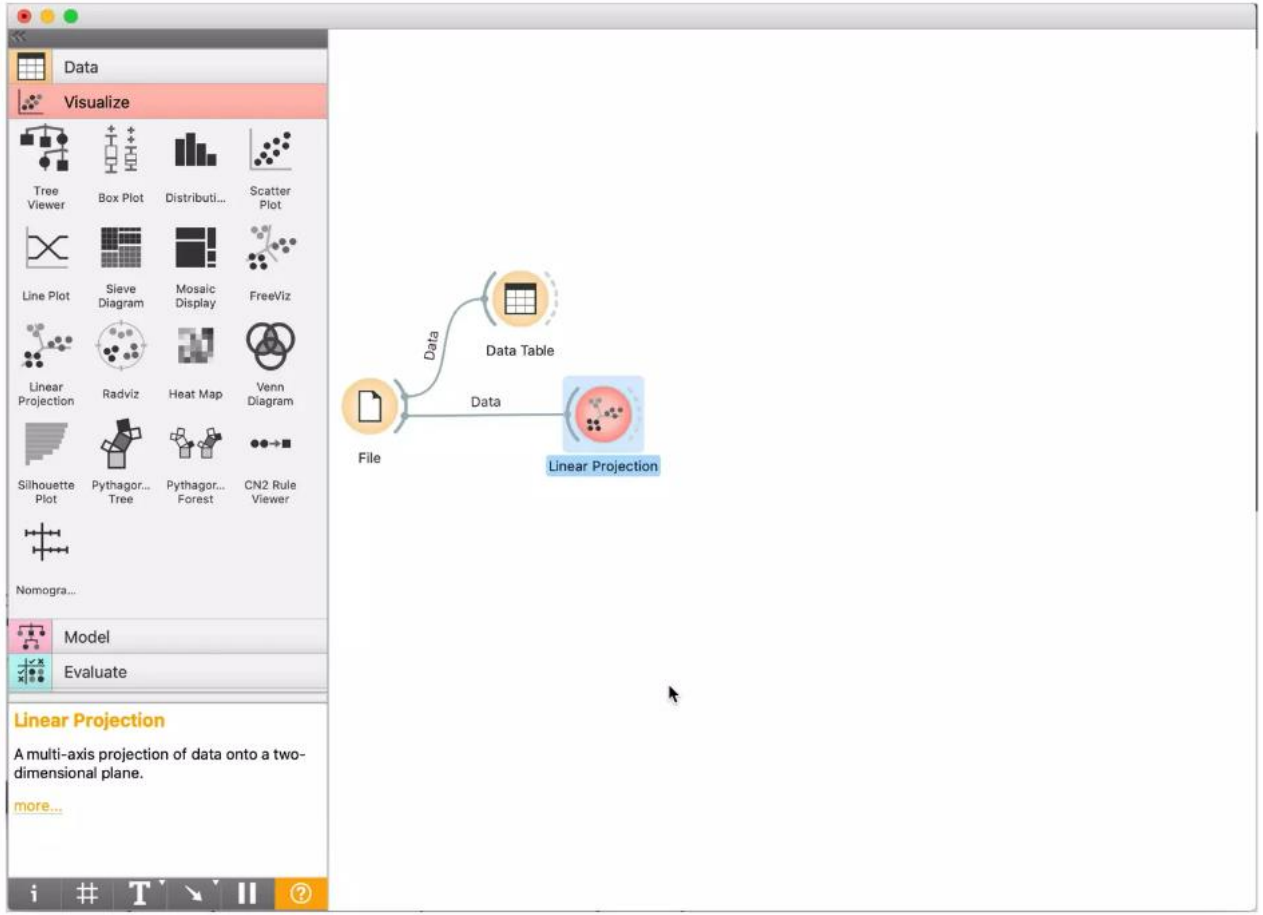
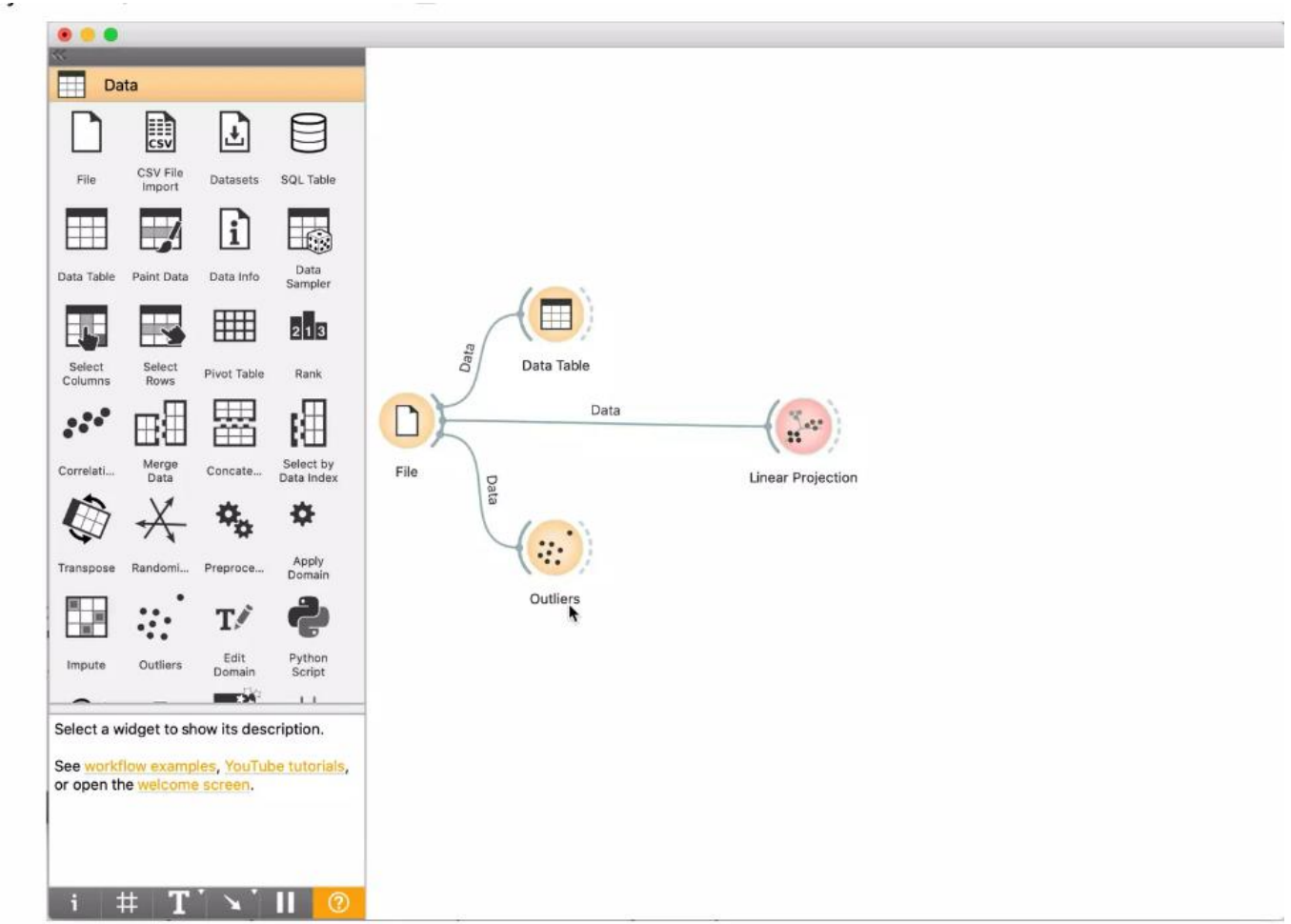
7 bus 97 43 73 173
8 van 90 43 66 157
9 van 86 34 62 140
10 saab 93 44 98 197
11 van 86 36 70 143
12 saab 90 34 66 136
13 bus 88 46 74 171
14 van 89 42 85 144
15 bus 94 49 79 203
16 opel 96 55 103 201
17 van 89 36 51 109
18 bus 99 41 77 197
19 saab 104 54 100 186
20 opel 101 56 100 215


Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Columns
Select Rows
Pivot Table
Rank
Correlati...
Merge Data
Concate...
Select by Data Index
Transpose
Randomi...
Preproce...
Apply Domain
Impute
Outliers
Edit Domain
Python Script
Create new link
Drag a link to an existing node or release on an empty spot to create a new node.
Hold Shift when releasing the mouse button to edit connections.
Data
Data Table
File
Search for a widget...
Data Table
Linear Projection
Paint Data
Data Info
Data Sampler
Select Columns
Select Rows
Pivot Table
Rank
Correlations
Merge Data
Concatenate
Select by Data Index
Transpose
Randomize
Linear Projection (from Orange3)
A multi-axis projection of data onto a two-dimensional plane.
Inputs:
• Data (Union[Orange.data.table.Table])
• Data Subset (Union[Orange.data.table.Table])
Outputs:
• Selected Data (Union[Orange.data.table.Table])
• Data (Union[Orange.data.table.Table])
• Components (Union[Orange.data.table.Table])


Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Columns
Select Rows
Pivot Table
Rank
Correlati...
Merge Data
Concate...
Select by Data Index
Transpose
Randomi...
Preproce...
Apply Domain
Impute
Outliers
Edit Domain
Python Script
Select a widget to show its description.
See workflow examples, YouTube tutorials, or open the welcome screen.
Data
Data Table
File

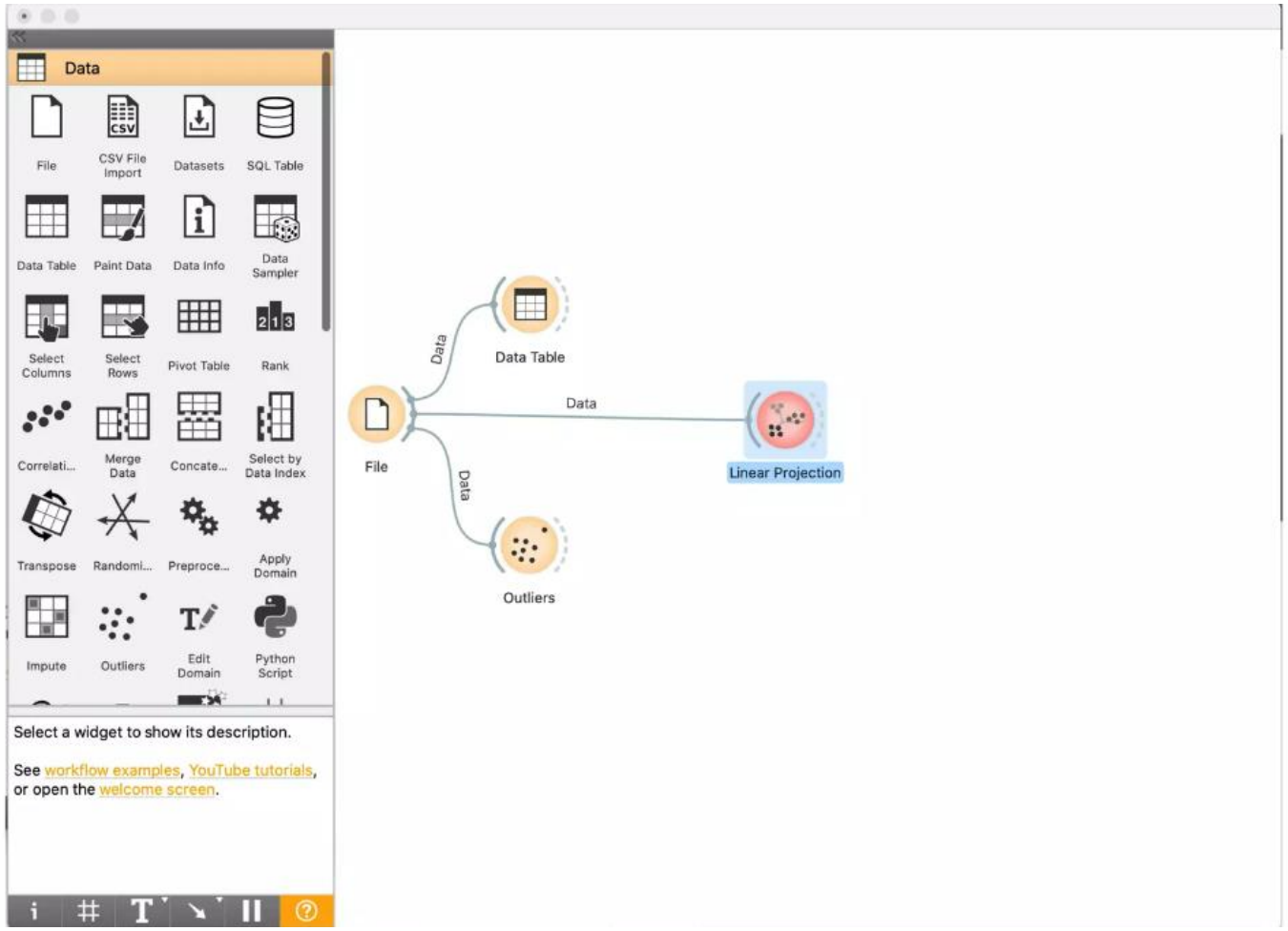

Data
Visualize
Tree Viewer
Box Plot
Distributi...
Scatter Plot
Line Plot
Sieve Diagram
Mosaic Display
FreeViz
Linear Projection
Radviz
Heat Map
Venn Diagram
Silhouette Plot
Pythagor... Tree
Pythagor... Forest
CN2 Rule Viewer
Nomogra...
Model
Evaluate
Linear Projection
A multi-axis projection of data onto a two-dimensional plane.
more...
Data
Data Table
Data
File
Linear Projection

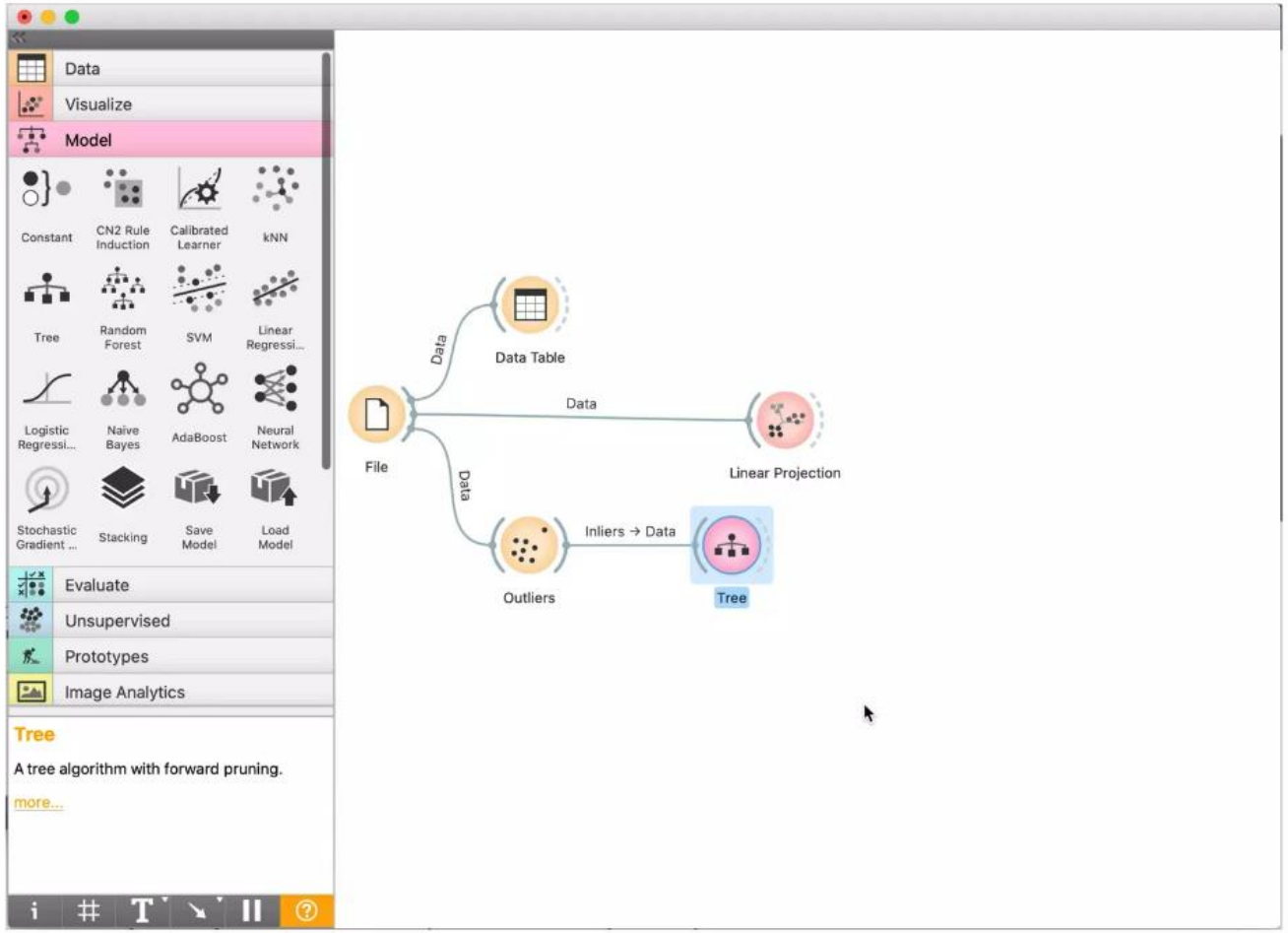

Data
Visualize
Tree Viewer
Box Plot
Distributi...
Scatter Plot
Line Plot
Sieve Diagram
Mosaic Display
FreeViz
Linear Projection
Radviz
Heat Map
Venn Diagram
Silhouette Plot
Pythagor... Tree
Pythagor... Forest
CN2 Rule Viewer
Nomogra...
Model
Evaluate
Linear Projection
A multi-axis projection of data onto a two-dimensional plane.
more...
Data
Data Table
Data
File
Linear Projection

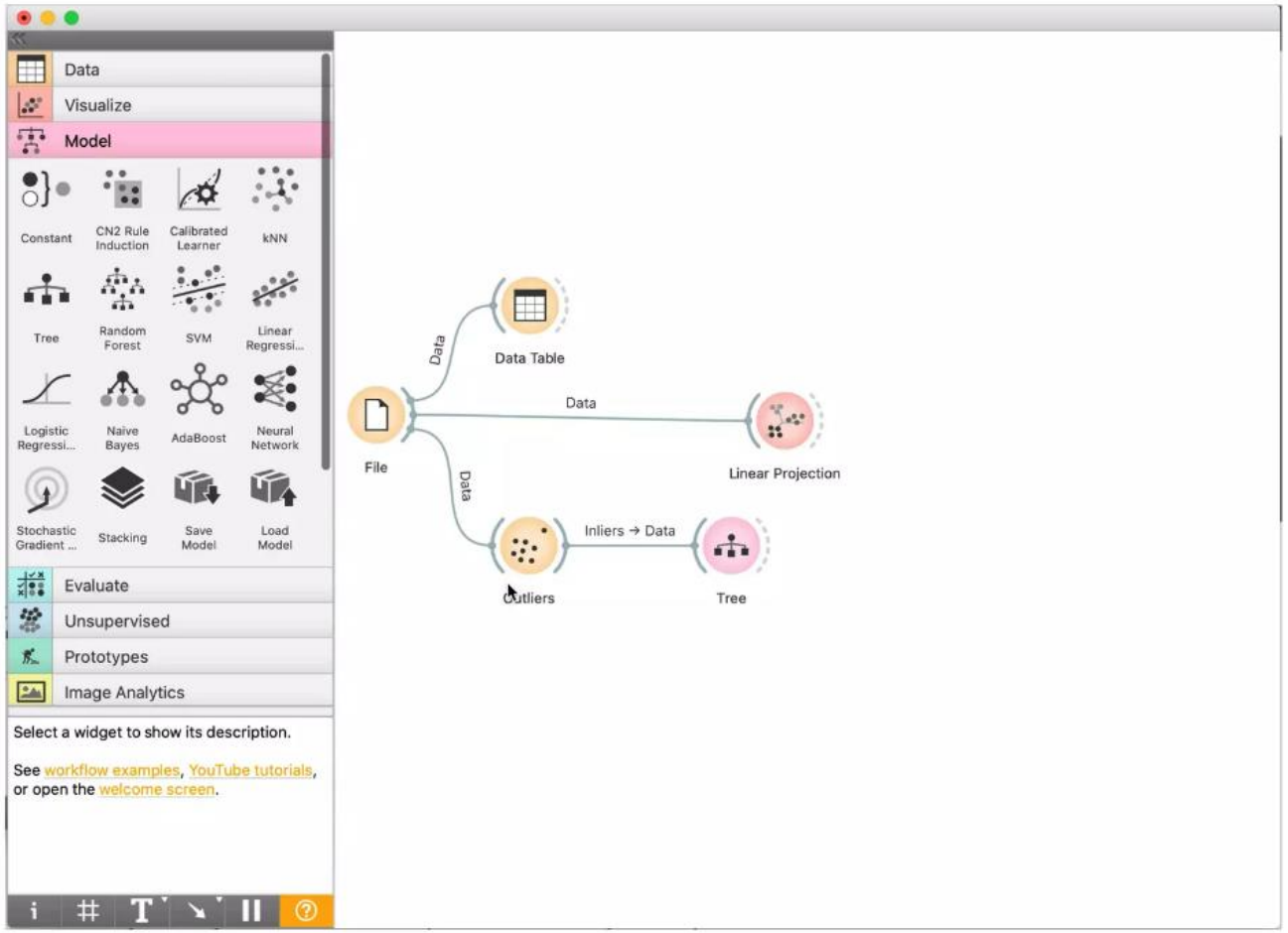

Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Columns
Select Rows
Pivot Table
Rank
Correlati...
Merge Data
Concate...
Select by Data Index
Transpose
Randomi...
Preproce...
Apply Domain
Impute
Outliers
Edit Domain
Python Script
Select a widget to show its description.
See workflow examples, YouTube tutorials, or open the welcome screen.
Data
Data Table
Data
File
Linear Projection
Data
Outliers

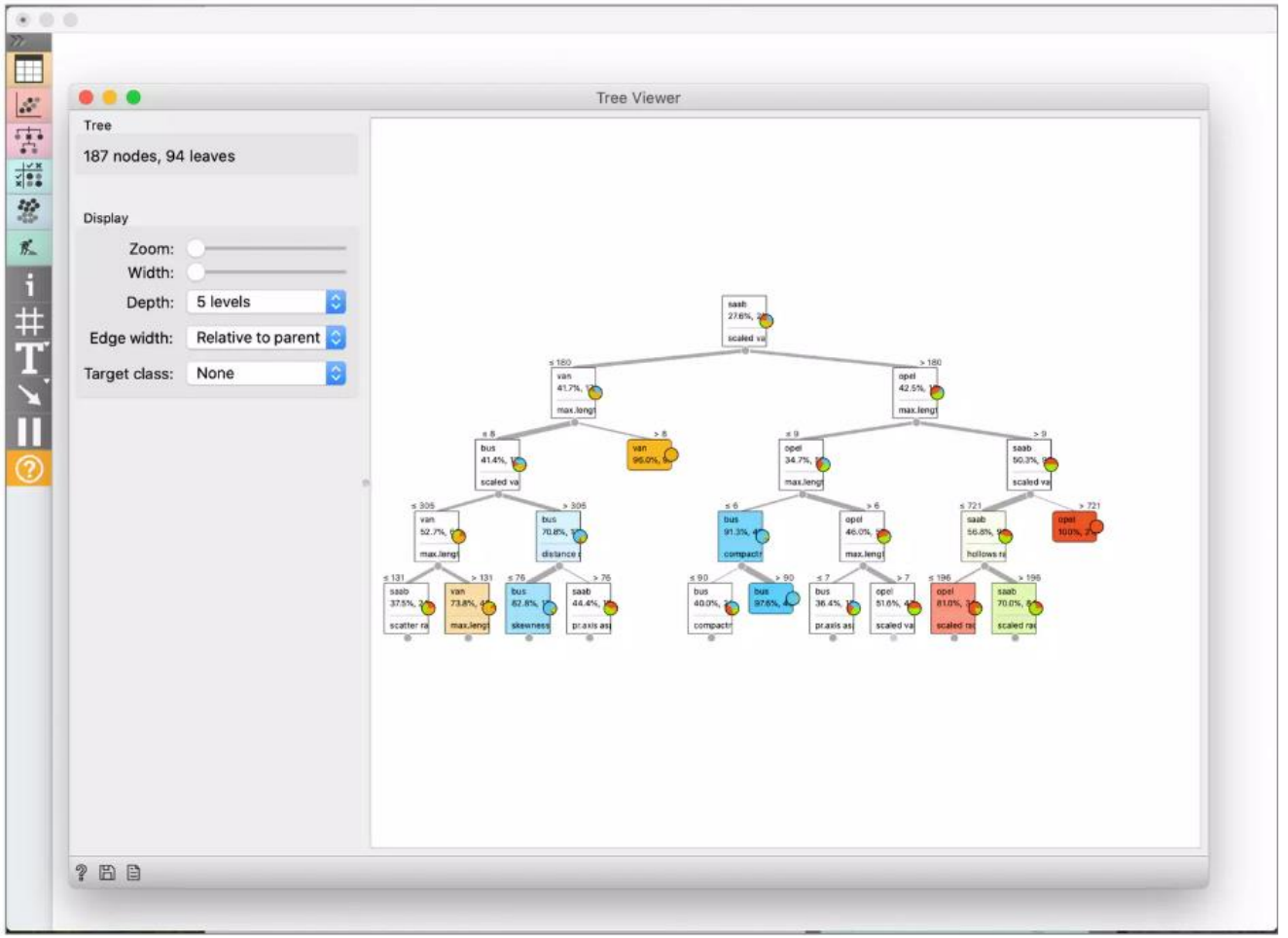
Linear Projection
Filter
elongatedness
pr.axis rectangularity
max.length aspect ratio
scatter ratio
Suggest Features
Circular Placement
Linear Discriminant Analysis
Principal Component Analysis
Color: vehicle
Shape: (Same shape)
Size: (Same size)
Label: (No labels)
Label only selection and subset
Symbol size:
Opacity:
Jittering
Hide radius:
scatter ratio
max.length aspect...
pr.axis aspect ratio
pr.axis rectangul...
radius ratio
elongatedness
distance circularity
compactness
circularity
max.length rectan...
bus
opel
saab
van

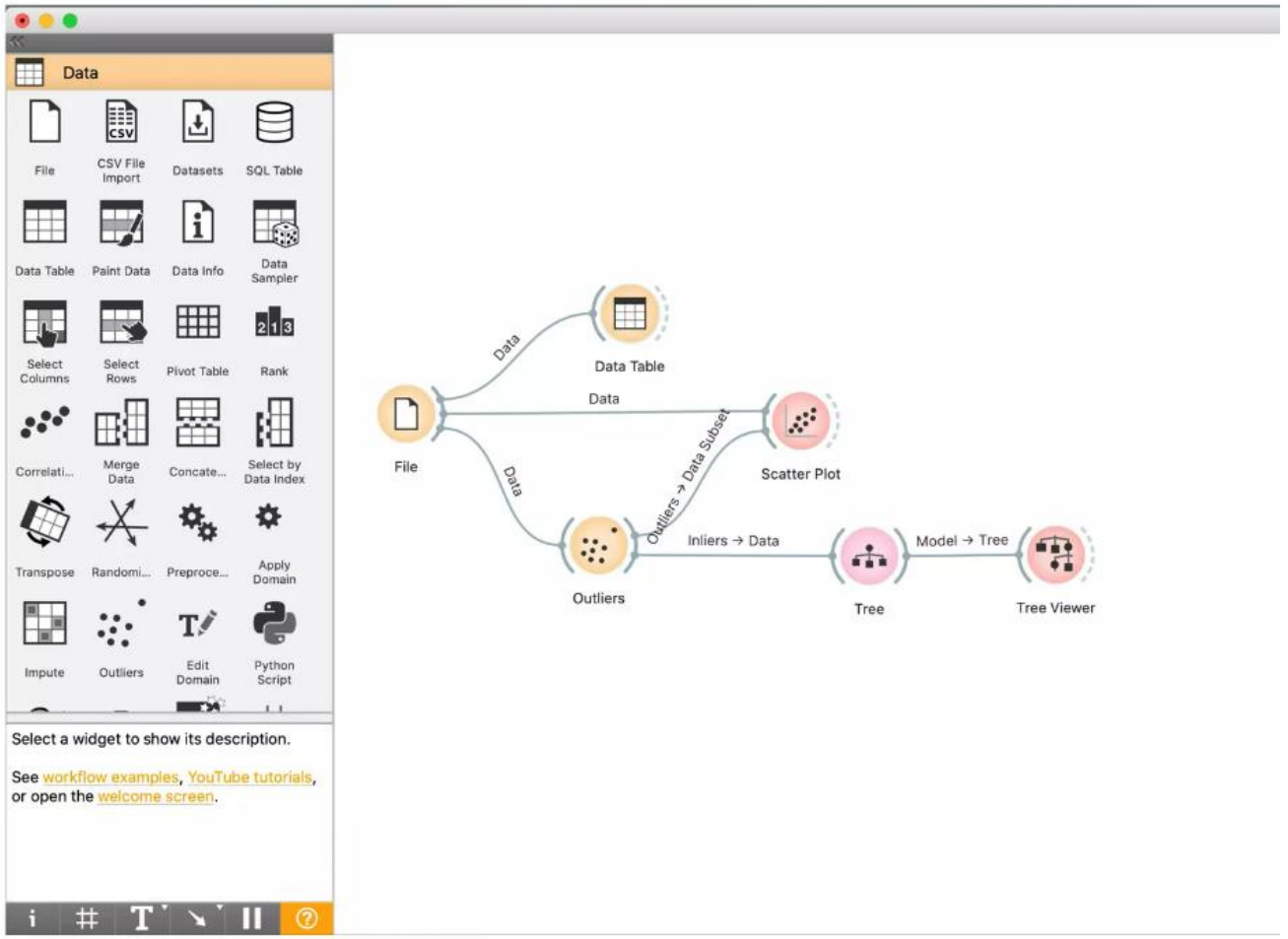
Linear Projection
Filter
elongatedness
pr.axis rectangularity
max.length aspect ratio
scatter ratio
Suggest Features
Circular Placement
Linear Discriminant Analysis
Principal Component Analysis
Color: vehicle
Shape: (Same shape)
Size: (Same size)
Label: (No labels)
Label only selection and subset
Symbol size:
Opacity:
Jittering
Hide radius:
scatter ratio
max.length aspect...
pr.axis aspect ratio
pr.axis rectangul...
radius ratio
elongatedness
distance circularity
compactness
circularity
max.length rectan...
bus
opel
saab
van

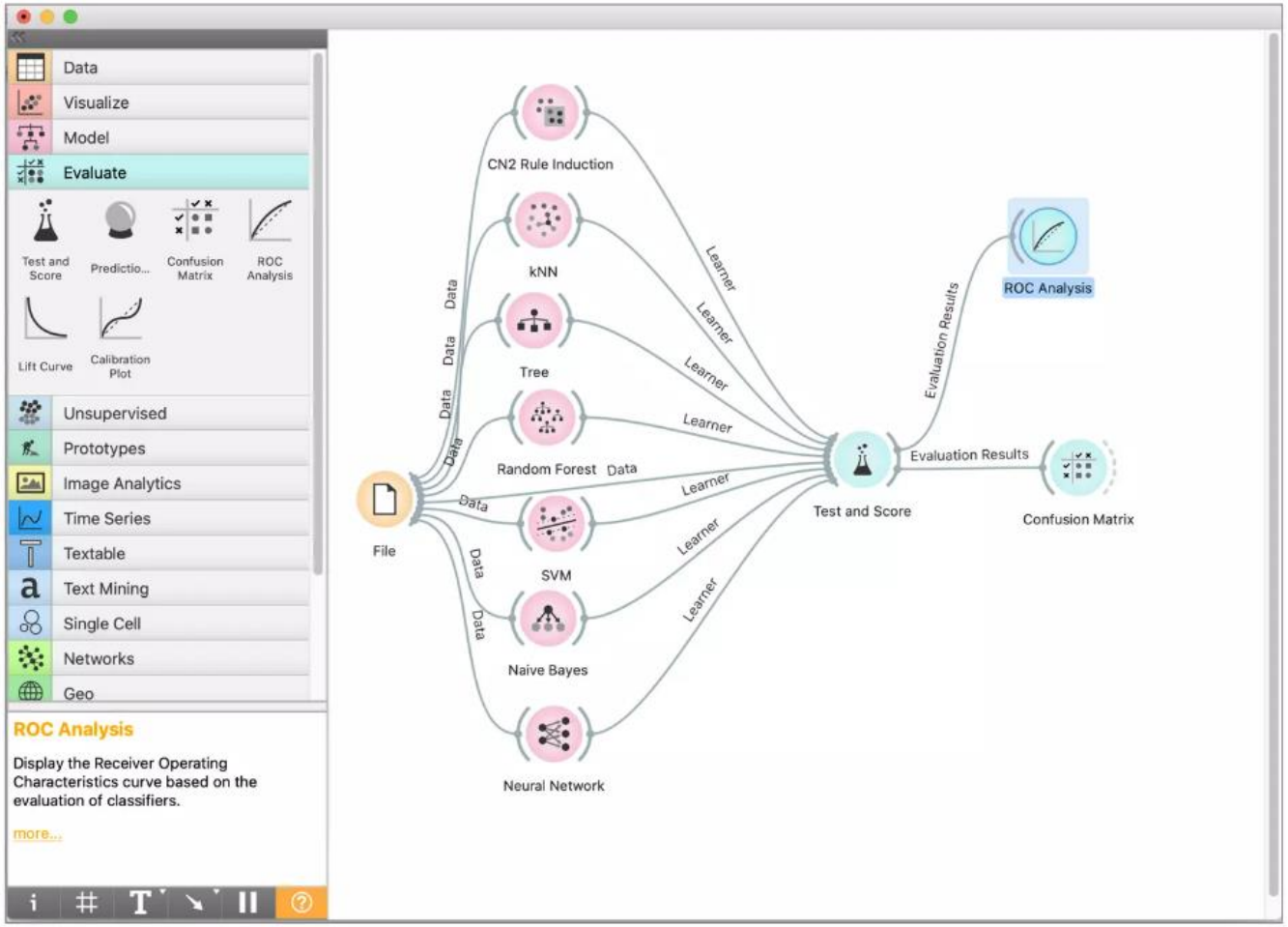

Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Columns
Select Rows
Pivot Table
Rank
Correlati...
Merge Data
Concate...
Select by Data Index
Transpose
Randomi...
Preproce...
Apply Domain
Impute
Outliers
Edit Domain
Python Script
Select a widget to show its description.
See workflow examples, YouTube tutorials, or open the welcome screen.
Data
Data Table
Data
File
Linear Projection
Data
Outliers

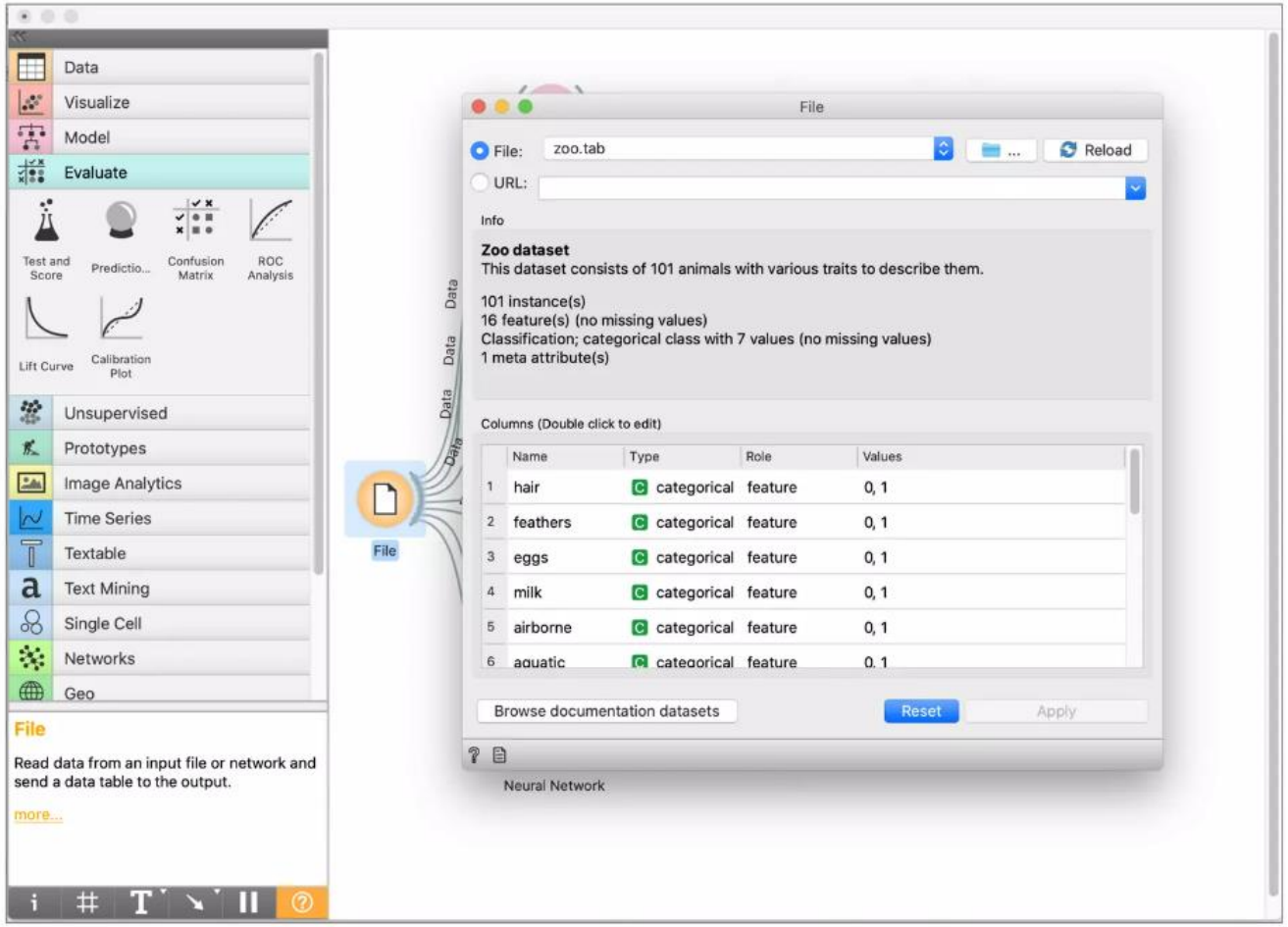

Data
Visualize
Model
Constant
CN2 Rule Induction
Calibrated Learner
kNN
Tree
Random Forest
SVM
Linear Regressi...
Logistic Regressi...
Naive Bayes
AdaBoost
Neural Network
Stochastic Gradient ...
Stacking
Save Model
Load Model
Evaluate
Unsupervised
Prototypes
Image Analytics
Tree
A tree algorithm with forward pruning.
more...
Data
Data Table
File
Data
Linear Projection
Data
Inliers → Data
Outliers
Tree

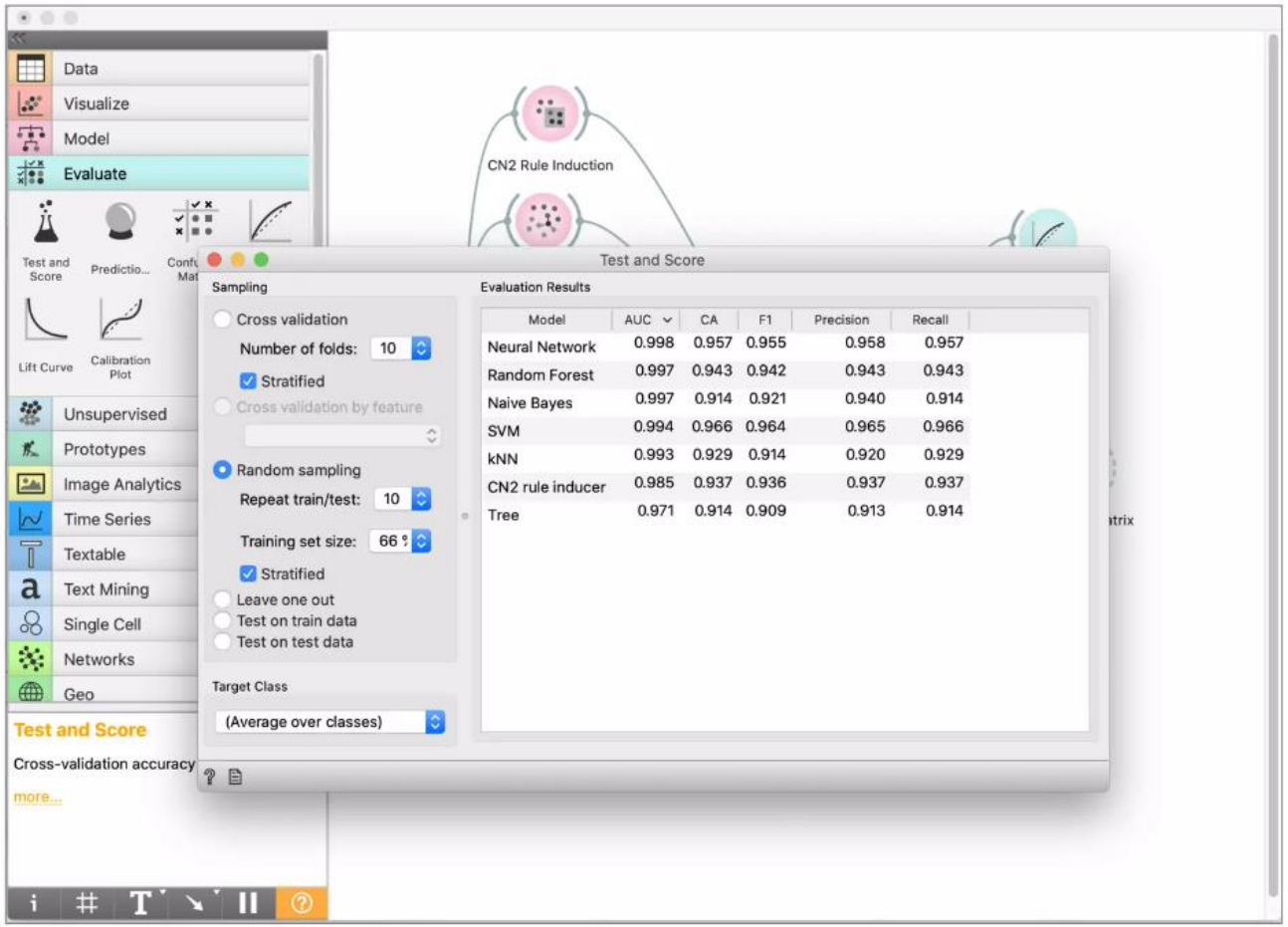

Data
Visualize
Model
Constant
CN2 Rule Induction
Calibrated Learner
kNN
Tree
Random Forest
SVM
Linear Regressi...
Logistic Regressi...
Naive Bayes
AdaBoost
Neural Network
Stochastic Gradient ...
Stacking
Save Model
Load Model
Evaluate
Unsupervised
Prototypes
Image Analytics
Select a widget to show its description.
See workflow examples, YouTube tutorials, or open the welcome screen.
Data
Data Table
Data
Linear Projection
File
Data
Inliers → Data
Outliers
Tree

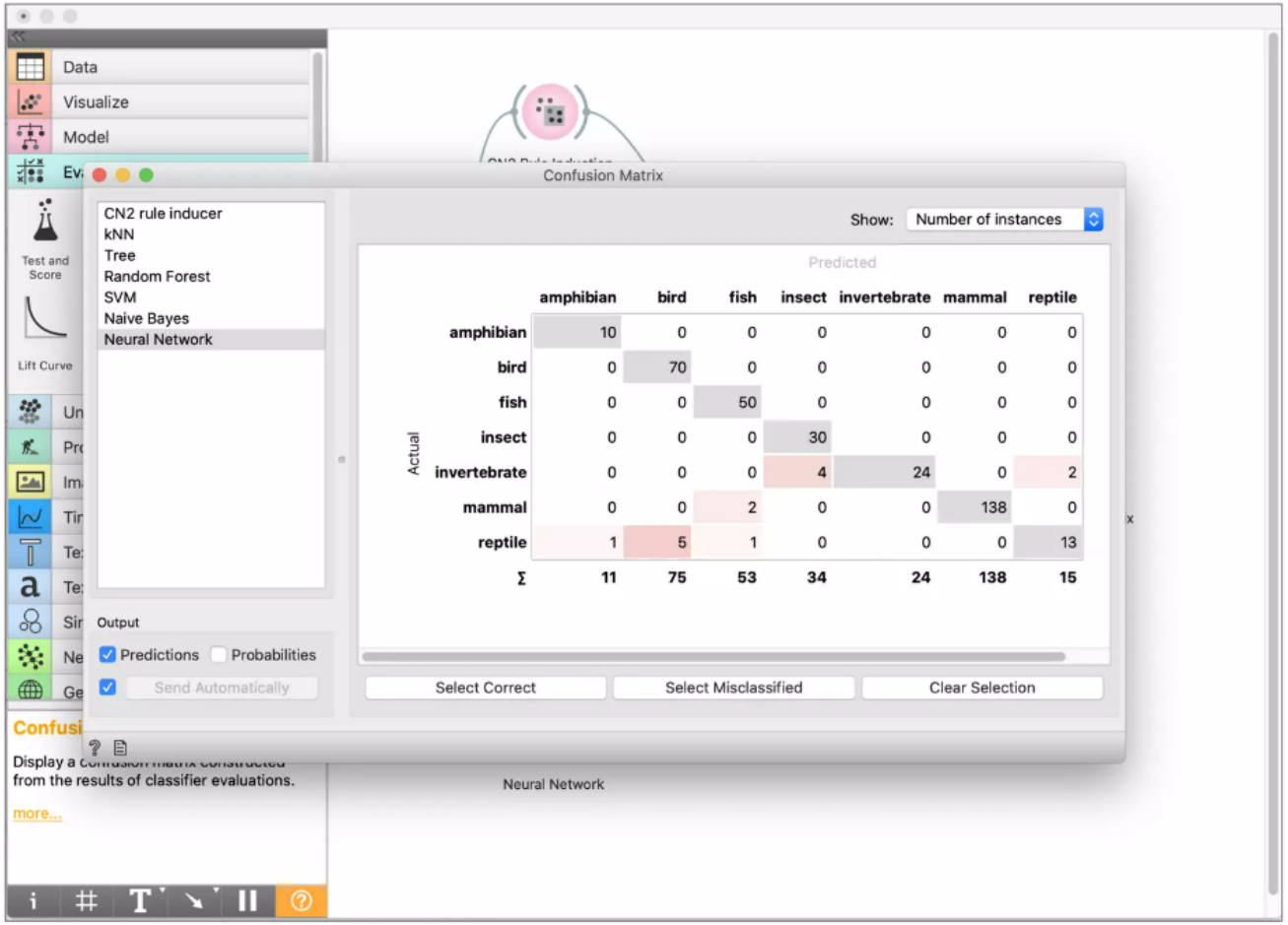

Tree Viewer
Tree
187 nodes, 94 leaves
Display
Zoom:
Width:
Depth:
5 levels
Edge width:
Relative to parent
Target class:
None

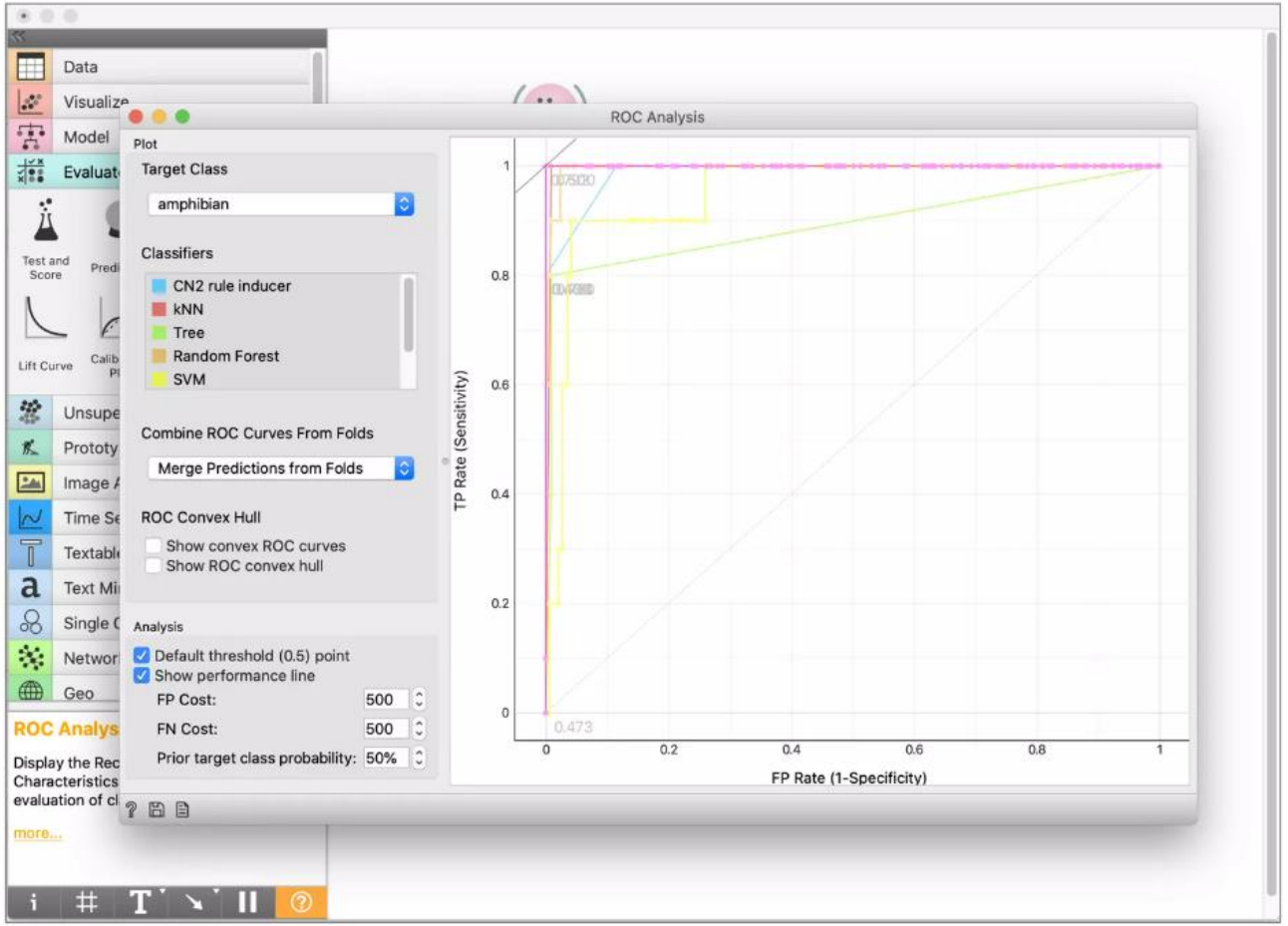

Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Columns
Select Rows
Pivot Table
Rank
Correlati...
Merge Data
Concate...
Select by Data Index
Transpose
Randomi...
Preproce...
Apply Domain
Impute
Outliers
Edit Domain
Python Script
Select a widget to show its description.
See workflow examples, YouTube tutorials, or open the welcome screen.
Data
Data Table
Data
Scatter Plot
File
Data
Outliers → Data Subset
Inliers → Data
Model → Tree
Outliers
Tree
Tree Viewer


Data
Visualize
Model
Evaluate
Test and Score
Predictio...
Confusion Matrix
ROC Analysis
Lift Curve
Calibration Plot
Unsupervised
Prototypes
Image Analytics
Time Series
Textable
Text Mining
Single Cell
Networks
Geo
ROC Analysis
Display the Receiver Operating Characteristics curve based on the evaluation of classifiers.
more...
CN2 Rule Induction
kNN
Tree
Random Forest
SVM
Naive Bayes
Neural Network
File
Data
Learner
Test and Score
Evaluation Results
ROC Analysis
Confusion Matrix


Data
Visualize
Model
Evaluate
Test and Score
Predictio...
Confusion Matrix
ROC Analysis
Lift Curve
Calibration Plot
Unsupervised
Prototypes
Image Analytics
Time Series
Textable
Text Mining
Single Cell
Networks
Geo
File
Read data from an input file or network and send a data table to the output.
more...
File
File: zoo.tab
Reload
URL:
Info
Zoo dataset
This dataset consists of 101 animals with various traits to describe them.
101 instance(s)
16 feature(s) (no missing values)
Classification; categorical class with 7 values (no missing values)
1 meta attribute(s)
Columns (Double click to edit)
Name Type Role Values
1 hair categorical feature 0, 1
2 feathers categorical feature 0, 1
3 eggs categorical feature 0, 1
4 milk categorical feature 0, 1
5 airborne categorical feature 0, 1
6 aquatic categorical feature 0, 1
Browse documentation datasets
Reset
Apply
Data
Data
Data
Data
File
Neural Network


Data
Visualize
Model
Evaluate
Test and Score
Predictio...
Lift Curve
Calibration Plot
Unsupervised
Prototypes
Image Analytics
Time Series
Textable
Text Mining
Single Cell
Networks
Geo
Test and Score
Cross-validation accuracy
more...
CN2 Rule Induction
Test and Score
Sampling
Cross validation
Number of folds: 10
Stratified
Cross validation by feature
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data
Target Class
(Average over classes)
Evaluation Results
Model AUC CA F1 Precision Recall
Neural Network 0.998 0.957 0.955 0.958 0.957
Random Forest 0.997 0.943 0.942 0.943 0.943
Naive Bayes 0.997 0.914 0.921 0.940 0.914
SVM 0.994 0.966 0.964 0.965 0.966
kNN 0.993 0.929 0.914 0.920 0.929
CN2 rule inducer 0.985 0.937 0.936 0.937 0.937
Tree 0.971 0.914 0.909 0.913 0.914


Data
Visualize
Model
Test and Score
Lift Curve
Confusion Matrix
CN2 rule inducer
kNN
Tree
Random Forest
SVM
Naive Bayes
Neural Network
Show:
Number of instances
Predicted
amphibian bird fish insect invertebrate mammal reptile
amphibian 10 0 0 0 0 0 0
bird 0 70 0 0 0 0 0
fish 0 0 50 0 0 0 0
insect 0 0 0 30 0 0 0
invertebrate 0 0 0 4 24 0 2
mammal 0 0 2 0 0 138 0
reptile 1 5 1 0 0 0 13
Σ 11 75 53 34 24 138 15
Actual
Output
Predictions
Probabilities
Send Automatically
Select Correct
Select Misclassified
Clear Selection
Display a confusion matrix constructed from the results of classifier evaluations.
more...
Neural Network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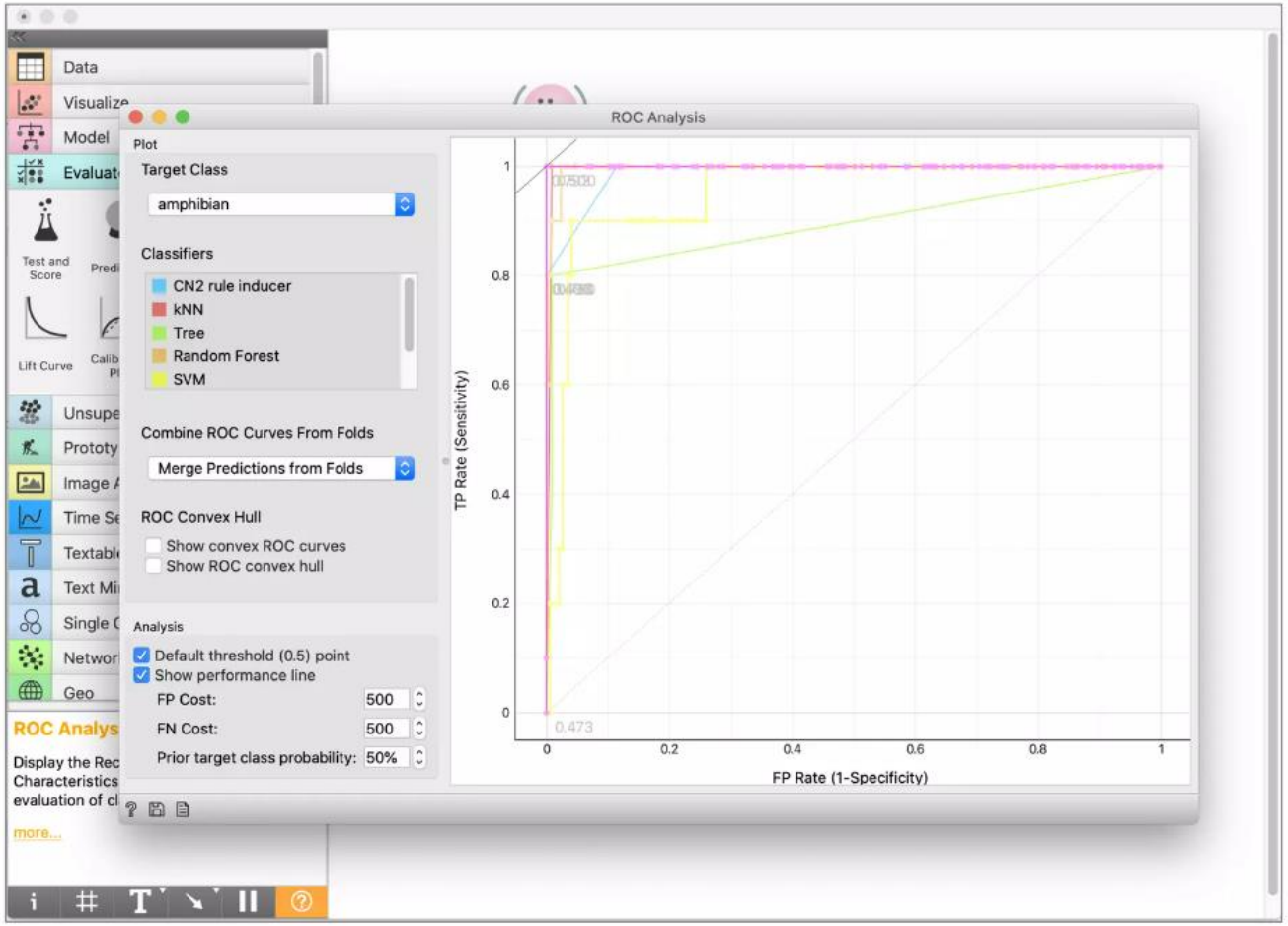
ROC Analys
Display the Rec
Characteristics
evaluation of cl
more...
ROC Analysis
Plot
Target Class
amphibian
Classifiers
CN2 rule inducer
kNN
Tree
Random Forest
SVM
Combine ROC Curves From Folds
Merge Predictions from Folds
ROC Convex Hull
Show convex ROC curves
Show ROC convex hull
Analysis
Default threshold (0.5) point
Show performance line
FP Cost: 500
FN Cost: 500
Prior target class probability: 50%
TP Rate (Sensitivity)
FP Rate (1-Specificity)
0.473
0
0.2
0.4
0.6
0.8
1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