



Open for Innovation

KNIME

KNIME Pros Learnathon

Building Reliable and Reusable Components

Group 3: Automation

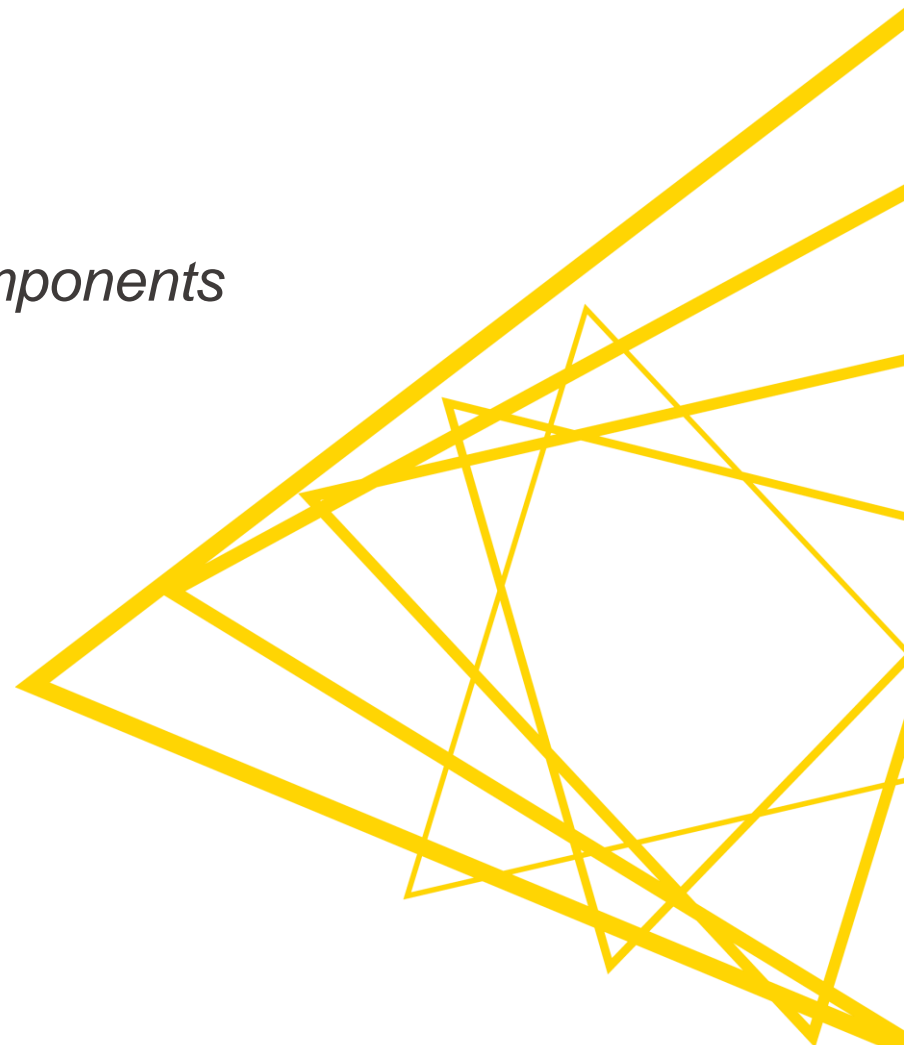
KNIME Team



@KNIME

#Learnathon

tinyurl.com/KNIME-Pros-Stuff



See you soon in a Breakout Room!

Main Zoom Session

Group 1 Financial Analysis



Maarit

KNIME Team Member



Lada

KNIME Team Member

Group 2 Life Sciences



temesgen-dadi

KNIME Team Member



Francosinus

KNIME Team Member

Group 3 Automation



paolotamag

KNIME Team Member



Mpattadkal

KNIME Team Member

Three Parallel Tracks via Zoom Breakout Rooms!

Main Zoom Session

Welcome to:
Group 3.
Automation

Group 3 Automation



paolotamag 
KNIME Team Member

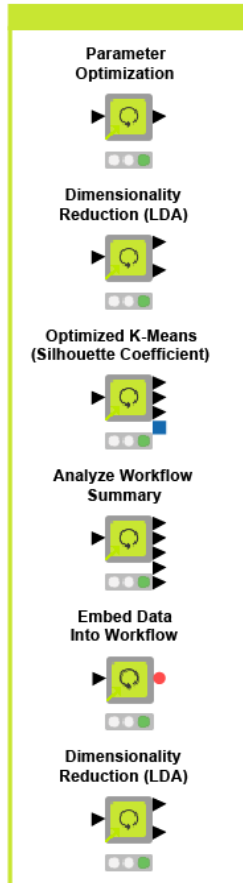


Mpattadkal
KNIME Team Member

- ▼ Group_3-Automation
 - ▲ Group_3-Activity_1-Configuration_and_Logic
 - ▲ Group_3-Activity_2-Model_Capture_and_Export
 - ▲ Group_3-Activity_3-Composite_View
 - ▲ Group_3-Solution-Automation_Component

- Download exercises from:
tinyurl.com/KNIME-Pros-Stuff
OR
- Search **hub.knime.com** :
“KNIME Pros Learnathon Group 3”

Automation Verified Components



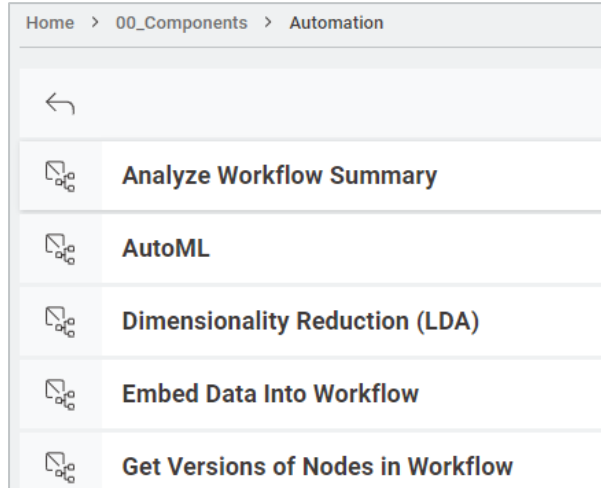
- Parameter Optimization
- Dimensionality Reduction (LDA)
- Optimized K-Means (Silhouette Coefficient)
- Analyze Workflow Summary
- Embed Data Into Workflow
- Dimensionality Reduction (LDA)

Automation



Available on
hub.knime.com

Home > 00_Components > Automation



- Analyze Workflow Summary
- AutoML
- Dimensionality Reduction (LDA)
- Embed Data Into Workflow
- Get Versions of Nodes in Workflow

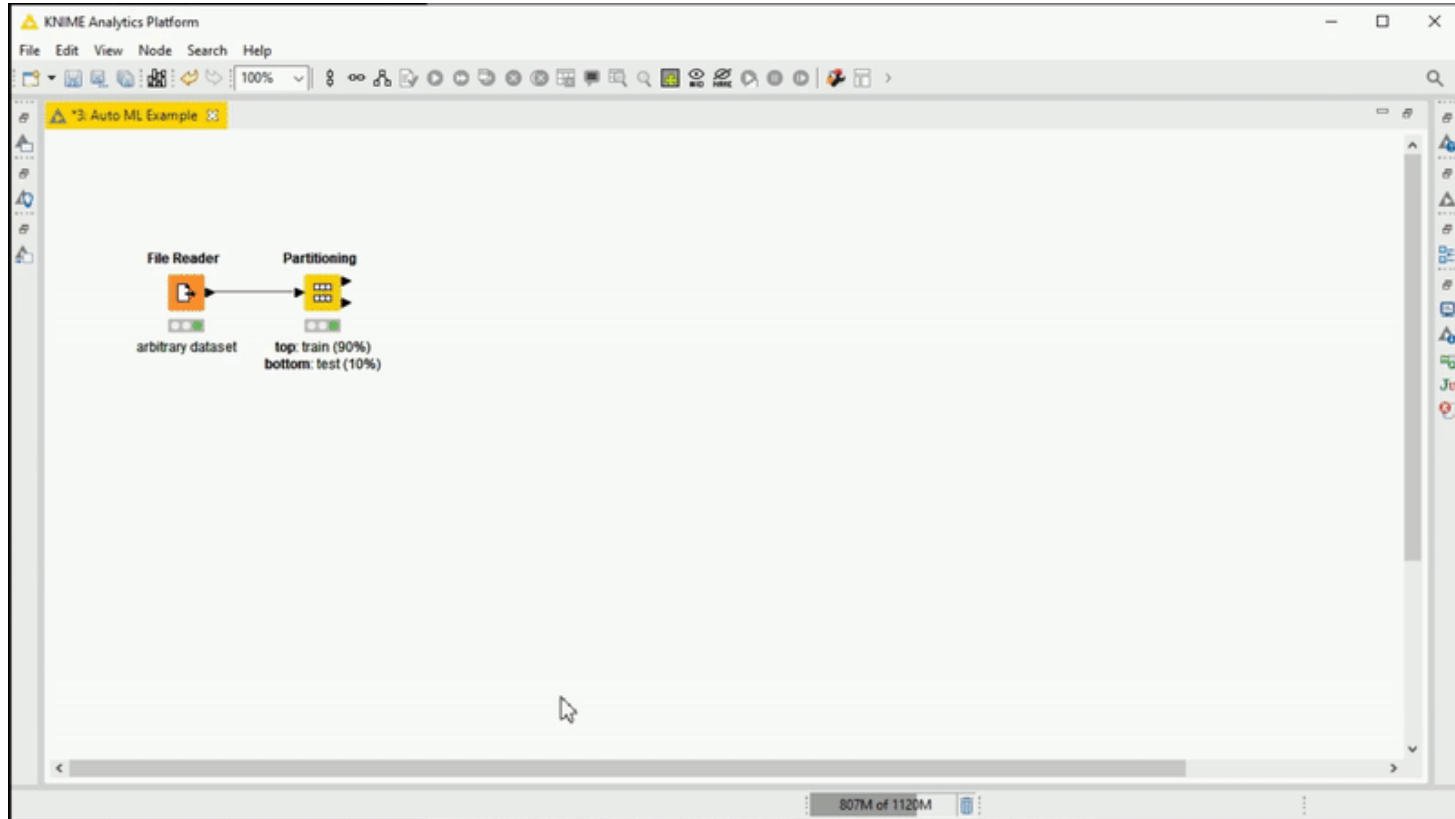
Automation



Automation Components help when a workflow has to be executed in a production environment in an automated fashion - from complex AutoML to simple tricks to increase flexibility and traceability of your workflow.

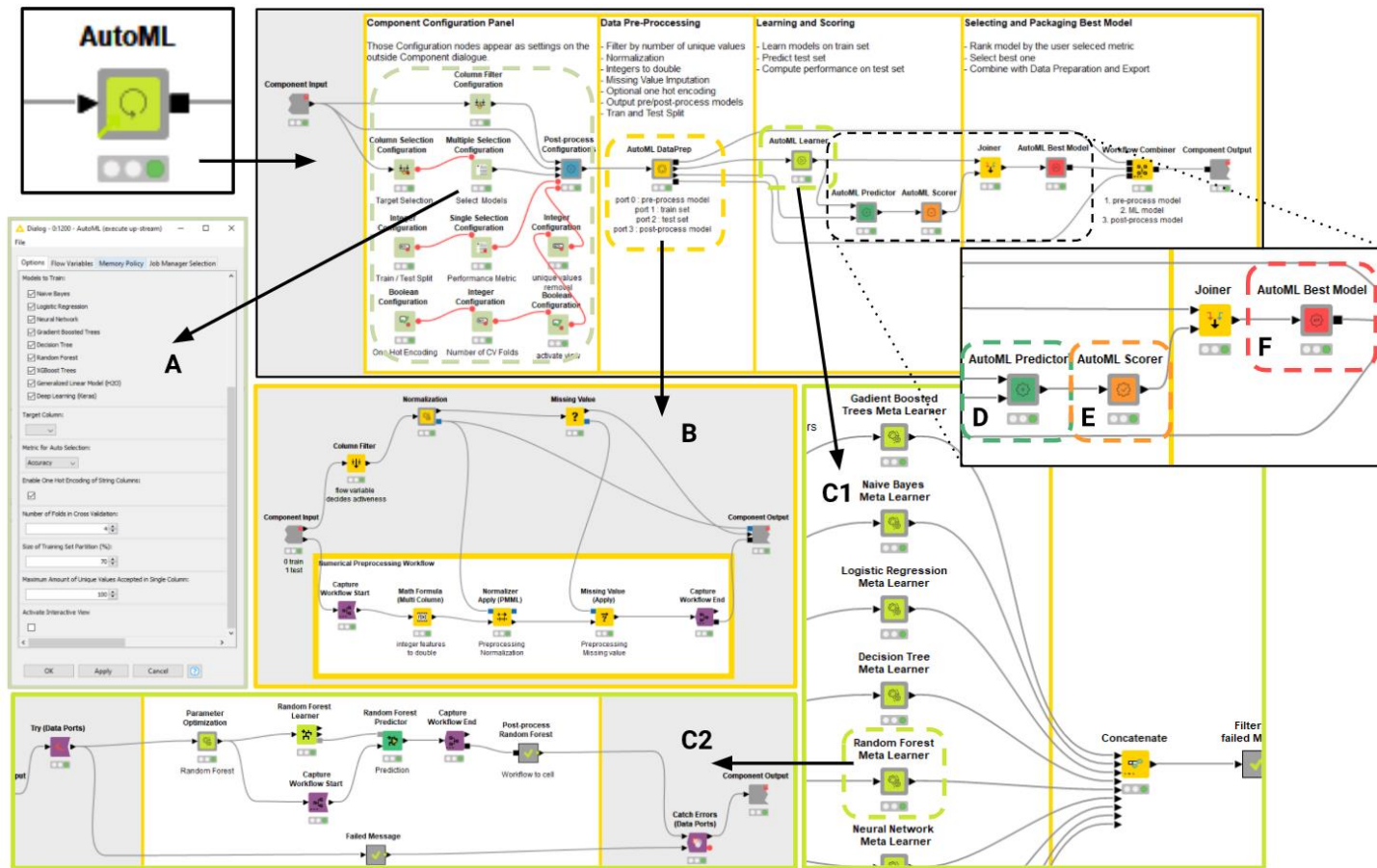
[View on KNIME Hub](#)

AutoML Component - Usage

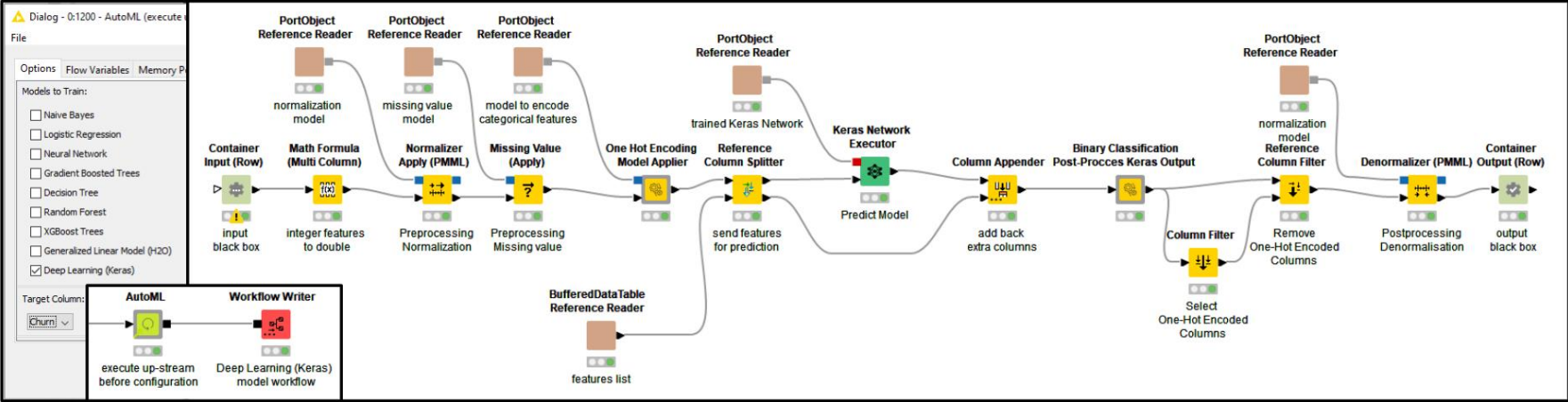


KNIME Blog – Automated Machine Learning – August 31, 2020

AutoML Component – Inside Workflow



AutoML Component – Output Workflow



AutoML Component – Composite View

The image displays the AutoML component in KNIME, split into two panels. The left panel shows the context menu for the AutoML component, with the 'Interactive View: AutoML' option highlighted. The right panel shows the 'AutoML Summary View' window.

AutoML Summary View

Models Ranked by Accuracy

Model	Accuracy	AUC	F-Measure
XGBoost Trees	0.95	0.85	0.80
Gradient Boosted Trees	0.90	0.80	0.75
Decision Tree	0.85	0.75	0.70
Random Forest	0.80	0.70	0.65
Neural Network	0.75	0.65	0.60
Logistic Regression	0.70	0.60	0.55
Deep Learning (Keras)	0.65	0.55	0.50
Generalized Linear Model (H2O)	0.60	0.50	0.45
Naive Bayes	0.55	0.45	0.40

Select Model (Optional)
Auto Selection: first in the list

<input checked="" type="radio"/>	XGBoost Trees
<input type="radio"/>	Gradient Boosted Trees
<input type="radio"/>	Decision Tree
<input type="radio"/>	Random Forest
<input type="radio"/>	Neural Network
<input type="radio"/>	Logistic Regression
<input type="radio"/>	Deep Learning (Keras)
<input type="radio"/>	Generalized Linear Model (H2O)
<input type="radio"/>	Naive Bayes

Showing 1 to 9 of 9 entries

Scoring Metrics

Metric	XGBoost	Gradient Boosted	Decision Tree	Random Forest	Neural Network	Logistic Regression	Deep Learning	GLM	Naive Bayes
AUC	0.85	0.80	0.75	0.70	0.65	0.60	0.55	0.50	0.45
Accuracy	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60	0.55
F-Measure	0.80	0.75	0.70	0.65	0.60	0.55	0.50	0.45	0.40

ROC Curves

Sensitivity vs 1 - Specificity plot showing the performance of the selected model (XGBoost Trees) compared to other models. The XGBoost curve is the highest, indicating the best performance.

Reset Apply Close

Today Exercise: AutoML (Regression) Component

KNIME Pros Learnathon: Building Reliable and Reusable Components

Full Solution :

- **Activity 1 :** *Configuration and Logic*
- **Activity 2 :** *Model Capture and Export*
- **Activity 3 :** *Composite View*

Goal of the Exercise

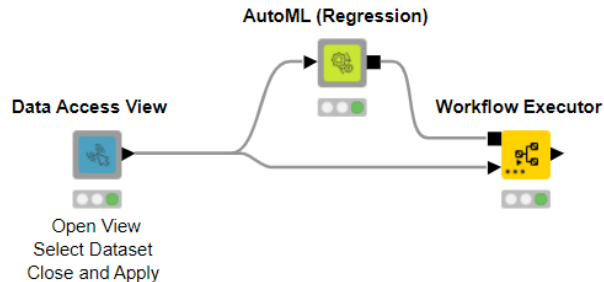
Double click the adjoining metanode "Goal of the exercise" to read the full introduction to this exercise

Goal of the Exercise



Solution Exercise

To start the exercise execute the Data Access View and then right click on the AutoML (Regression) Component and select **Component > Open**



- **Activity 1:** Configuration and Logic
- **Activity 2:** Model Capture and Export
- **Activity 3:** Composite View

-
- The screenshot shows a project tree with a folder named **Group_3-Automation**. Inside this folder, there are four sub-items, each with a triangle icon:
- Group_3-Activity_1-Configuration_and_Logic
 - Group_3-Activity_2-Model_Capture_and_Export
 - Group_3-Activity_3-Composite_View
 - Group_3-Solution-Automation_Component

Today's Challenge: AutoML (Regression) Component

- Download Exercises from **link** and import .knar file to your KNIME Analytics Platform LOCAL Workspace!

OR

- Download from KNIME Hub!

hub.knime.com/knime/spaces/Education/latest/Learnathons
or Search for **“KNIME Pros Learnathon - Group 3”**

