Advanced Machine Learning Using SAS® Viya®

Course code: ADML35

This course teaches you how to optimize the performance of predictive models beyond the basics by implementing various data munging and wrangling techniques. The course continues the development of supervised learning models that begins in the Supervised Machine Learning Pipelines Using SAS(R) Viya(R) course and extends it to ensemble modeling. Running unsupervised learning and semi-supervised learning models is also discussed. In this course, you learn how to do feature engineering and clustering of variables, and how to preprocess nominal variables and detect anomalies. This course uses Model Studio, the pipeline flow interface in SAS Viya that enables you to prepare, develop, compare, and deploy advanced analytics models. Importing and running external models in Model Studio is also discussed, including open-source models. SAS Viya automation capabilities at each level of machine learning are also demonstrated, followed by some tips and tricks with Model Studio.

Affiliate	Duration	Course price	ITB
Bratislava	3	1 500 €	0

The prices are without VAT.

Course terms

Date	Duration	Course price	Type	Course language	Location

The prices are without VAT.

Who is the course for

Advanced machine learning modelers who use Model Studio

What we teach you

- Develop a series of supervised learning models based on techniques such as logistic regression, decision tree, neural network, and support vector machine
- Evaluate classifier performance of your model
- Create an ensemble model based on different techniques
- Preprocess and engineer features from categorical and continuous data to improve the performance of your machine learning models
- Extract features using principal component analysis, singular value decomposition, robust principal component analysis, autoencoders, and variable clustering
- Discover the basic concepts of cluster analysis, and then study a set of typical clustering methodologies, algorithms, and applications
- Use statistics and machine learning to detect anomalies in your data
- Implement a semi-supervised learning model
- vImport and run SAS 9 models in Model Studio
- Run open-source models in Model Studio
- Automate different stages of machine learning in SAS Viya
- Generate automated pipelines using REST API

Required skills

Before attending this course, it is recommended that you have done the following:

- Completed the Machine Learning Using SAS Viya course.
- Obtained some experience with creating and managing SAS data sets, which you can gain from the SAS(R) Programming I: Essentials course.
- Acquired some experience building statistical models using SAS Visual Data Mining and Machine Learning software.

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Course outline

Machine Learning Fundamentals
- Model Studio review
- Classifier performance
- Ensemble learning

Feature Engineering
- Introduction to feature engineering
- Principal component analysis
- Singular value decomposition
- Robust principal component analysis
- Autoencoders
- Transforming categorical variables

Clustering of Variables and Observations
- Variable clustering
- Cluster analysis

Anomaly Detection
- Introduction to anomaly detection
- Support vector data description
- Semi-supervised learning

External Models in Model Studio
- Importing SAS Enterprise Miner models
- Running SAS/STAT or SAS Enterprise Miner models
- Running open-source models

Machine Learning Automation
- Automation in SAS Viya
- Data preprocessing and feature engineering
- Modeling
- Automated pipeline creation
- Pipeline automation using REST API (self-study)

Tips and Tricks with Model Studio
- Managing metadata
- Working with analysis elements
- Using the SAS Code node
- Interpreting models with extracted features
- Scoring unsupervised learning models

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