Machine Learning Using SAS® Viya®

Course Description

This course discusses the theoretical foundation for techniques associated with supervised machine learning models. A series of demonstrations and practices is used to reinforce all the concepts and the analytical approach to solving business problems. In addition, a business case study is defined to guide participants through all steps of the analytical life cycle, from problem understanding to model deployment, by illustrating data exploration, data preprocessing, feature selection, model training and validation, model assessment, and scoring. This course is the core of the SAS Viya Data Mining and Machine Learning curriculum. It uses Model Studio, the pipeline flow interface in SAS Viya that enables you to prepare, develop, compare, and deploy advanced analytics models. You learn to train supervised machine learning models to make better decisions on big data.

Learn how to

- Apply the analytical life cycle to a business need.
- Incorporate a business-problem-solving approach in daily activities.
- Prepare and explore data for analytical model development.
- Create and select features for predictive modeling.
- Develop a series of supervised learning models based on different techniques such as decision trees, ensembles of trees (forest and gradient boosting), neural networks, and support vector machines.
- Evaluate and select the best model based on business needs.
- Deploy and manage analytical models under production.

Course Prerequisites

Before attending this course, participants should have at least an introductory-level familiarity with statistics and machine learning concepts. You can gain this knowledge by first attending the Statistics You Need to Know for Machine Learning course. Previous SAS software experience is helpful but not required.

Who Should Attend?

Business analysts, data analysts, marketing analysts, marketing managers, data scientists, data engineers, financial analysts, data miners, statisticians, mathematicians, and others who work in correlated areas

Course Outline

Getting Started with Machine Learning and SAS Viya

- Machine learning in business decision making.
- Supervised prediction: preparing the data and building the initial model.
- A closer look at SAS Viya.

Data Preprocessing and Algorithm Selection

- Exploring the data and replacing incorrect values.
- Extracting features.
- Transforming inputs.
- Selecting features.
- Best practices in data preparation.
- Selecting an algorithm.

Decision Trees and Ensembles of Trees

- Building a default decision tree model.
- Modifying the model: tree structure.
- Modifying the model: recursive partitioning.
- Modifying the model: pruning.
- Building and modifying ensembles of trees.

Neural Networks

- Building a default neural network model.
- Modifying the model: network architecture.
- Modifying the model: network learning and optimization.

Support Vector Machines

- Building a default support vector machine model.
- Modifying the model: methods of solution.
- Modifying the model: kernel function.

Model Assessment and Deployment

- Model assessment and comparison.
- Model deployment.

Additional Nodes

- Exploring additional nodes in Model Studio.

Course Duration

2 days

SAS Products Covered

SAS Viya