

[SAS-CPML84]: Supervised Machine Learning Pipelines Using SAS Viya

Length : 2 Days
Delivery Method : Instructor-led (Classroom)

Course Overview

This course discusses the theoretical foundation for different 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, through data preparation, feature selection, model training and validation, and model assessment and deployment. 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.

The e-learning version of this course provides access to SAS Viya for Learners, which enables students to use the software to complete the practices.

Audience Profile

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

At Course Completion

Learn how to

- Apply the analytical life cycle to 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 tree, ensemble 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.

Pre-Requisites

Before attending this course, participants should have at least an introductory-level familiarity with basic statistics. Previous SAS software experience is helpful but not required.

This course addresses SAS Viya software.

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Course Outline

Module 1: Introduction

Lessons

- Machine learning in business decision making.
- Essentials of supervised prediction.
- Introduction to SAS Viya.

Module 2: Data Preparation

Lessons

- Data exploration
- Feature extraction.
- Input transformations.
- Feature selection.
- Variable clustering (self-study).
- Best practices.
- Selecting your algorithm.

Module 3: Decision Trees and Ensembles of Trees

Lessons

- Introduction.
- Tree-structure models.
- Recursive partitioning.
- Pruning.
- Ensembles of trees.

Module 4: Neural Network

Lessons

- Introduction.
- Network architecture.
- Network learning and optimization.

Module 5: Support Vector Machines and Additional Topics

Lessons

- Large-margin linear classifier.
- Methods of solution.
- Nonlinear classifier: Kernel Trick.
- Additional tools.

Module 6: Model Assessment and Deployment

Lessons

- Model assessment and comparison.
- Model deployment.

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