Course Code: 0A079G

Course Title: Introduction to Machine Learning Models Using IBM SPSS Modeler (V18.2)

Description:

This course provides an introduction to supervised models, unsupervised models, and association models. This is an application-oriented course and examples include predicting whether customers cancel their subscription, predicting property values, segment customers based on usage, and market basket analysis.

Objectives:

- Introduction to machine learning models
- Taxonomy of machine learning models
- Identify measurement levels
- Taxonomy of supervised models
- Build and apply models in IBM SPSS Modeler

Supervised models: Decision trees - CHAID

- CHAID basics for categorical targets
- Include categorical and continuous predictors
- CHAID basics for continuous targets
- Treatment of missing values

Supervised models: Decision trees - C&R Tree

- C&R Tree basics for categorical targets
- Include categorical and continuous predictors
- C&R Tree basics for continuous targets
- Treatment of missing values
- Evaluation measures for supervised models
- Evaluation measures for categorical targets
- Evaluation measures for continuous targets

Supervised models: Statistical models for continuous targets - Linear regression

- Linear regression basics
- Include categorical predictors
- Treatment of missing values
- Supervised models: Statistical models for categorical targets - Logistic regression
- Logistic regression basics
- Include categorical predictors
- Treatment of missing values

Association models: Sequence detection

- Sequence detection basics
- Treatment of missing values

Supervised models: Black box models - Neural networks

- Neural network basics
- Include categorical and continuous predictors
- Treatment of missing values

Supervised models:

- Black box models - Ensemble models
- Ensemble models basics
- Improve accuracy and generalizability by boosting and bagging
- Ensemble the best models

Unsupervised models: K-Means and Kohonen

- K-Means basics
- Include categorical inputs in K-Means
- Treatment of missing values in K-Means
- Kohonen networks basics
- Treatment of missing values in Kohonen

Unsupervised models: TwoStep and Anomaly detection

- TwoStep basics
- TwoStep assumptions
- Find the best segmentation model automatically
- Anomaly detection basics
- Treatment of missing values

Association models: Apriori

- Apriori basics
- Evaluation measures
- Treatment of missing values

- Preparing data for modeling
- Examine the quality of the data
- Select important predictors
- Balance the data

Prerequisites:

- Knowledge of your business requirements

Duration:

16 Hrs

Topics:

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Audience:

- Data scientists
- Business analysts
- Clients who want to learn about machine learning models