

PREDICTIVE MODELING IN ANALYTICS USING R

Introduction

This program provides a fundamental concept to the participants on how to develop relationships between predictor variables and outcome (or response) variable. Regression models are used to predict the output, whereas classification models used to determine an outcome class of each individual observation. The predictive analytics is useful in a wide range of application areas such as operations, economics, marketing, science, and business analytics. The discussion and hands-on-session of each modeling technique provide insights into model building and managerial decision making to a practical application.

Objectives of the Program

1. Statistical and data mining techniques those are useful to develop regression and classification models for a wide range of data set.
2. How to select an appropriate predictive model for a data set and evaluate its adequacy with the existing information.
3. Open-source R software will be used to facilitate the participants in learning.

Pedagogy of the Program

The participants will get concepts and hands-on-experience on how to fit prediction models for real-life data through online lectures, interactive discussion, illustrations, and spreadsheet-based calculation. Open-source statistical software R will be used to create graphical and numerical output for the analysis. Illustrative examples/cases, in-depth interpretation of the output, and alternative modeling approaches will be presented.

Indicative Content of the Program

1. Multiple linear regression
2. Regression diagnostics
3. Regression with qualitative predictors
4. R code illustration with examples for multiple regression
5. Measuring the performance of a regression model
6. Regression models for collinear data
7. Ridge and Lasso regression model
8. R code illustration with examples for ridge and Lasso regression
9. Binary logistic regression
10. Confusion matrix and goodness of fit measures
11. Measuring the performance of a classification model
12. R code illustration with examples for binary logistic regression
13. Structure of a decision tree
14. Regression trees and Classification tree
15. Generation of rules from a decision tree
16. R code illustration with examples for building a decision tree

Program Director: Prof. Sasadhar Bera and Prof. Amit Sachan

Fees (Per Candidate):Rs 35400+GST (Non Residential-In Campus),Rs 27000+GST (Online)

Proposed Dates: January 24 to 27,2022