

## **Excel Analytics: Linear Regression Analysis in MS Excel**

**Duration: 8 hours**

### **Course Overview:**

- Identify the business problem which can be solved using linear regression technique of Machine Learning.
- Create a linear regression model in Excel and analyse its result.
- Confidently practice, discuss and understand Machine Learning concepts

### **Target Audience:**

- Working Professionals beginning their Data journey
- Anyone curious to master Linear Regression in short span of time

### **Module 1: Introduction**

- Introduction

### **Module 2: Getting data ready for Regression model**

- Gathering business knowledge
- Data Exploration
- Course Resources
- This is a milestone!
- The Data and the Data Dictionary
- Univariate analysis and EDD
- Discriptive Data Analytics in Excel
- Outlier Treatment
- Identifying and Treating Outliers in Excel
- Missing Value Imputation
- Identifying and Treating missing values in Excel
- Variable Transformation in Excel
- Dummy variable creation: Handling qualitative data
- Dummy Variable Creation in Excel
- Correlation Analysis
- Creating Correlation Matrix in Excel
- Quiz

### **Module 3: Creating Regression Model**

- The Problem Statement
- Basic Equations and Ordinary Least Squares (OLS) method
- Assessing accuracy of predicted coefficients
- Assessing Model Accuracy: RSE and R squared
- Creating Simple Linear Regression model
- Multiple Linear Regression

- The F - statistic
- Interpreting results of Categorical variables
- Creating Multiple Linear Regression model
- Quiz
- Excel: Running Linear Regression using Solver
- Quiz

#### **Module 4: Optimizing Business Models - Case Studies**

- Introduction
- Goal-seek and Scenario Manager in Excel
- Solver in Excel
- Different Solving methods of Excel Solver
- Solving a Transportation problem
- Price Skimming
- Excel - Price Skimming model
- Concept of Customer lifetime Value
- Excel - Calculating customer lifetime value

#### **Module 5: Bonus Section**

- Popular Excel charts
- The final milestone!
- Bonus Lecture