Data Visualization & Data Analysis using R Training

Data is the new oil of the Digital Economy. Organizations started treating data as an enterprise-wide corporate asset. According to IDC Research, digital data will grow at a compound annual growth rate (CAGR) of 42% through 2020. Organizations are now focusing on monetizing available data to increase revenue and to improve their products, services, etc. It is very difficult to consume data using traditional reports with standard charts. Recent evolution in Data Visualization has created a huge impact on data consumption. Data visualization is not used just to report the current state of affairs but also used to tell new hidden stories from data.

Course Objective:

- Recent trends and interesting case studies to understand how data visualization is helping organization
- The techniques in data mining and the art of telling stories from any data
- Principles of exploratory data analysis
- Starting from univariate analysis, multivariate analysis to identifying hidden relationships between different variables using visualization
- Learn the principles behind the traditional charts along with the new advanced charts
- Data narratives and classification of visualizations
- Creating charts, reports and static dashboard using R

Course Audience:

Researchers, Data analysts, Data scientist and other professionals interested in data visualization & Analysis

Course Prerequisites:

Some basic knowledge and prior experience of R would be useful.

Need for data visualization:

- Industrial impact – live case studies
- Classification of data visualization
- Introduction to R Studio
- Understanding Data Types
- Reading data from flat files and databases using R
- Working with dataframes
- Introduction to Exploratory Data Analysis
- Data Typologies
- Data processing using dplyr package
- Data manipulation and data transformation
- Univariate Analysis
- Hypothesis test for significance (T-Test)
- Introduction to ggplot2 library
- Creating barcharts, box plots, histograms

Multi-variate analysis:

- Bivariate Analysis (Correlations, Crosstabs)
- Hypothesis test for significance (Chi-square test)
- Creating heatmaps, stacked bars using ggplot
- Using facet in ggplot
- Using scatter plot in ggplot
- Inline charts in excel
- Basic charts using excel
- Trending Analysis
- Geographical Analysis
- Working with unstructured data
- Challenges in unstructured data
- Creating word clouds
- Visualizing Unstructured Data

Introduction to machine learning:

- Understanding different types of algorithms
- Linear regression
- Classification using k-means
- Visualizing machine learning outputs
- Introduction to R Markdown
- Introduction to flex dashboard
- Creating layouts
- Creating static dashboard
- Choosing the right charts
- Visualization design principles
- Data Narratives
- Dos and Don'ts in dashboard creation