



## R Programming

### **Description:**

R is a programming language used for statistical computing, data manipulation, data visualization and implementing Machine Learning algorithms. It is widely used by researchers from diverse disciplines to estimate and analyze the result. Moreover, R programming is a wonderful statistical tool extensively used in the industry for the task which requires exhaustive research to analyze and understand the data. In this course, you will be going to learn R programming thoroughly and implement some widely used Machine Learning algorithms.

### **Start Date:**

### **Doubt Clear Time:**

### **Course Time:**

### **Features:**

# Implementation of widely used Machine Learning algorithms.

# Exhaustive learning from basics to advance

# Quizzes

# Downloadable resources

# Completion certificate

### **What we learn:**

# Introduction to basics of R

# R Matrices and Arrays

# R Data Frames

# Data Input and Output

# Operators and Conditional Statements

# Advanced R Programming

# Data Preparation

# Statistics Overview

# Hypothesis Testing

# Data Visualization

# Machine Learning with R

### **Requirements:**

# No prior programming experience

# A system with Internet Connection

# Interest to learn

# Your dedication

### **Instructor:**

### **Name:**

Shlok Pandey

## **Description:**

Content Developer (Deep Learning)

## **>Course Introduction:**

>>Overview of the course

>>Installation and Setup

>>Guide to R Studio

## **>Introduction to Basics of R:**

>>Introduction to R programming

>>Arithmetics in R

>>Variables and Data Types

>>Basics of Vector

>>Vector Operations

>>Vector Indexing and Slicing

>>Comparison Operators

## **>R Matrices and Arrays:**

>>Introduction to R Matrices and Arrays

>>Creating a Matrix

>>Matrix Arithmetic

>>Matrix Operations

>>Matrix Selection and Indexing

>>Factor and Categorical Matrices

>>Creating Multidimensional Arrays

>>Indexing Multidimensional Arrays

## **>R Data Frames:**

>>Introduction to R Data Frames

>>Data Frame Basics

>>Data Frame Indexing and Selection

>>Data Frame Operations

## **>Lists, Strings and Regular Expressions:**

>>Introduction to lists

>>Introduction to strings and their creation

>>Printing strings

>>String concatenation

>>String Manipulation-1

>>String Manipulation-2

>>Regular Expressions-1

>>Regular Expressions-2

## **>Data Input and Output:**

>>Introduction to data input and output

>>CSV files in R

>>Excel files in R

## **>Operators and Conditional**

### **Statements:**

>>Introduction to Operators and Conditional Statements

>>Logical Operators

>>If, else, and if-else statements

>>While loops

>>For loops

>>Functions

### **>Advanced R Programming:**

>>Introduction to Advanced R programming

>>Built-in R Features

>>Understanding apply function: a. lapply b. sapply c. vapply

>>Math functions in R

>>Dates and Timestamps

### **>Data Preparation:**

>>Introduction to Data Preparation

>>Guide to dplyr package

>>Pipe operator

>>Guide to use tidyr

>>Dealing with missing data

>>Replacing missing data

## **>Statistics Overview:**

>>Introduction to Statistics

>>Mean, Median, and Mode

>>Variance, standard deviation, and coefficient of variability

>>Covariance and correlation

## **>Hypothesis Testing:**

>>Introduction to Hypothesis testing

>>Standard errors and Confidence intervals

>>Hypothesis testing

>>Type-1 and type-2 error

>>P-value

## **>Data Visualization:**

>>Introduction to ggplot

>>Histograms

>>Scatterplots

>>Barplots

>>Boxplots

>>Coordinates and Faceting

>>Themes

>>Plotly and interactive visualization

## **>Machine Learning with R:**

>>Introduction to Machine Learning

>>Linear Regression

>>Logistic Regression

>>K-Nearest Neighbours

>>Decision Trees

>>Random Forests

>>Support Vector Machines

>>K-Means Clustering

**>Project: Customer Churn**

**Classification:**

>>Using the customer churn dataset, we will classify whether the customer will purchase