



## Data Science Master Bootcamp with

# PYTHON & R

### COURSE HIGHLIGHTS

- 60 hours of Instructor Led training
- Certified & Experienced Trainers
- Career-oriented Training Program
- Access to Pre-recorded Sessions & Study Materials



## Overview

Data Science is one of the most in-demand domains in the IT industry today. As processes and business get more data-driven, this demand is only going to go higher. Our course is created as an all-in-one resource that can catapult your career to the next level. Explore all the fundamental basics of Data Science while also making sure that you have enough exposure to advanced topics in this data science with Python and R training program.

The course / bootcamp covers crucial topics like making use of Anaconda, Spyder & R-studio for Python, & R, basics of Python & R, Population and Sample, Moments, Skewness & Kurtosis, Correlation analysis, probability, machine learning, Data visualization and interpretation, etc. It can be considered as one of the most in-depth fundamental Data Science online certification programs available that is highly career oriented.

According to a report by the U.S. Bureau of Labor Statistics, Data Science jobs are going to increase by about 28% through 2026. The strong skill sets imparted via this program will help you to take advantage of unique opportunities with excellent pay-grades while solving complex business problems via data-driven decisions. Confidently use top tools and practices to mine, visualize and interpret Data with the help of this Data Science with Python & R course.

## Target Audience

- Anyone who willing to learn Machine Learning from Scratch to Professional Level
- Students and Working Professional

## Pre-Requirement

- Basic Knowledge of Mathematics and Statistics
- Beginner in Python & R Programming
- Ready to Learn Passionately

## Why Infosec Train?



Certified &  
Experienced Instructor



Flexible Schedule



Access to the  
recorded  
sessions



Post Training  
Support



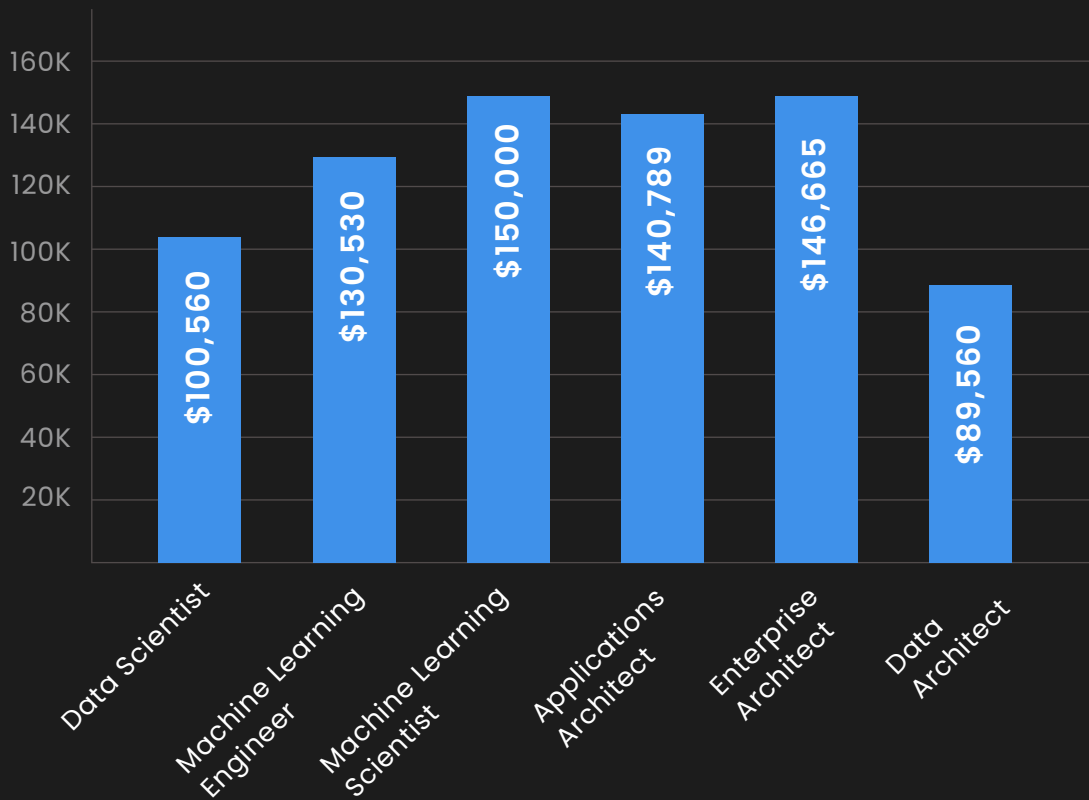
Tailor Made Training



4 hrs/day in  
Weekend/  
Weekday

## Career benefits

Annual Salary (in US Dollars)



Top companies that hire data scientists





## Introduction to Data Science

- A. Why to learn Data Science
- B. Scope of Data Science
- C. Jobs In Data Science

## Introduction to Python & R

- A. Installation of Anaconda
- B. How to launch Jupyter Notebook, Spyder and R-Studio in Anaconda
- C. Shortcut keys of Jupyter Notebook and Spyder
- D. How to install Packages in python
- E. Download and Install R-Studio independently (without Anaconda)
- F. Shortcut keys of R-Studio
- G. How to install Packages in R-Studio
- H. Similarities between Python & R

## Basics of Python & R

- A. Variables & Data Types
- B. Statements and loops
- C. Different types of operators
- D. Functions and Modules

## Population & Sample Types of Characteristics

- A. Attributes
- B. Variables

## Types of Data

- A. Primary Data
- B. Secondary Data
- C. Cross-sectional Data
- D. Time Series Data
- E. Directional Data

## Methods of Sampling

- A. Simple Random Sampling with and without Replacement
- B. Stratified Random Sampling
- C. Systematic Sampling
- D. Cluster Sampling
- E. Two Stage Sampling

## Summary Statistics

### Measure Central Tendency

- A. Arithmetic Mean
- B. Mode
- C. Median
- D. Mean
- E. Quartiles
- F. Deciles
- G. Percentiles
- H. Geometric Mean
- I. Harmonic Mean

### Measure of Dispersion

- A. Range
- B. Semi interquartile Range (Quartile Deviation)
- C. Mean Deviation
- D. Variance
- E. Standard Deviation
- F. Mean Squared Deviation
- G. Coefficient of Variation(C.V.)

## Moments, Skewness & Kurtosis

- A. Primary Data
- B. Secondary Data
- C. Cross-sectional Data
- D. Time Series Data
- E. Directional Data

## Correlation Analysis

- A. Types of Correlation Coefficients
- B. Karl Pearson's Coefficient of Correlation
- C. Spearman's Rank Correlation Coefficient
- D. Types of Correlation
- E. Positive Correlation (Poor, Moderate and Strong)
- F. Negative Correlation (Poor, Moderate and Strong)
- G. No Correlation

## Probability

- A. Conditional Probability
- B. Multiplication theorem of Probability
- C. Bayes Theorem

## Testing of Hypothesis

- A. Statistic (Estimator)
- B. Parameter
- C. Hypothesis
- D. Null Hypothesis
- E. Alternative Hypothesis
- F. Type I Error
- G. Type II Error
- H. Critical Region
- I. Test
- J. Test Statistic
- K. Level of Significance
- L. P-Value (Observed Level of Significance)
- M. Confidence Intervals



## Test for Population Mean

- A. One Sample Z-Test
- B. Two sample Z-Test
- C. One Sample t-Test
- D. Two Sample t-Test

## Central Limit Theorem

## Test for Population Proportion

- A. One Sample population Proportion
- B. Two Sample Population Proportion

## Paired t-Test

## Test for Population Variance

- A. Chi-Square Test

## Test for Goodness of Fit

## Test for Independence of Two Attributes

## Test for Equality of Population Variances

- A. F-Test

## Analysis of Variance (ANOVA)

- A. Complete Randomised Design
- B. Randomised Block Design

## Introduction to Machine Learning

- A. What is Machine Learning?
- B. Types of Machine Learning
- C. Supervised Learning
- D. Unsupervised Learning
- E. Applications of Machine Learning

## Data Visualisation with interpretation

- A. Bar plot
- B. Histogram
- C. Pie Chart
- D. Boxplot
- E. Scatter plot
- F. Many More.....

## Supervised Machine Learning

### Regression Analysis

- A. Simple Linear Regression
- B. Multiple Linear Regression
- C. Non-linear Regression (Logarithmic, Exponential, Polynomial, Quadratic, and many more)
- D. Stepwise Regression (Forward Selection and backward elimination)
- E. Regularization Techniques (Ridge & Lasso Regression)

### Classification

- A. Logistic Regression
- B. Naïve Bayes Algorithm
- C. K-Nearest Neighbours
- D. Support Vector Machine
- E. Decision Tree
- F. Ensemble Techniques
- G. Bagging (Random Forest)
- H. Boosting (Gradient Boosting, XGBoost, AdaBoost, etc.)
- I. Neural Networks (Multi-layer perceptron)

## Unsupervised Machine Learning

### Dimensionality Reduction Technique

- A. Principal Component Analysis

## Clustering Analysis

- A. Hierarchical Clustering
- B. Single Linkage
- C. Complete Linkage
- D. Average Linkage
- E. Median Linkage
- F. Weighted Linkage
- G. Ward Linkage
- H. Non – Hierarchical Clustering
- I. K – Means

## Association Rule & Recommendation System

- A. Measure of association
- B. Support
- C. Confidence
- D. Lift Ratio
- E. Market Basket Analysis (Affinity Analysis)
- F. Apriori Algorithm

## Deep Learning

### Introduction to Neural Network & Deep Learning

- A. Deep Learning Importance [Strength & Limitation]
- B. SP | MLP
- C. Neural Network Overview
- D. Neural Network Representation
- E. Activation Function
- F. Loss Function
- G. Importance of Non-linear Activation Function
- H. Gradient Descent for Neural Network

## Parameter & Hyper parameter

- A. Train, Test & Validation Set
- B. Vanishing & Exploding Gradient
- C. Dropout
- D. Regularization
- E. Optimization algorithm
- F. Learning Rate
- G. Tuning
- H. Softmax

## Convolutional Neural Network (CNN)

- A. Deep Convolution Model
- B. Detection Algorithm

## Recurrent Neural Network (RNN)

- A. RNN
- B. LSTM
- C. Bi Directional LSTM



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