

Full Stack Data Science Training

Learn Data Science with most in-demand skills like R, Python, and Machine Learning

- * 120 Hours of Data Science Training
- * Hands-on Project Based Learning
- * Learn from Certified Industry Experts
- * 24x7 Support
- * Career Mentorship and Guidance Sessions
- * 1-on-1 Training Option

Tools Covered



Data Science Course Overview

The Full Stack Data Science Program is an instructor-based course for aspiring Data Scientists that has been designed to include the latest and most wanted Data Science tools and skills. This Data Science Certification course imparts in depth knowledge of concepts such as Data science, data analytics, data visualization, machine learning, predictive analysis, neural network, big data, data warehousing, data preparation. Apart from these concepts, this data science online course also offers free career guidance and job readiness support to learners which includes mock interviews, projects and exercises, resume preparation and virtual internships.



Why Choose This Data Science Training with InfoSec Train?

Infosec Train is a renowned name in the training and consulting industry across the globe, providing specialized courses in IT and security domain. Our Data Science online training aims to offer a 360-degree learning experience backed by expert-led support.

Here's what you get when you take up this Data Science Course with Infosec Train.

- Flexible training schedule
- Recorded sessions for post-training reference
- Post-training support with no expiry date.
- Certificate of participation
- Career Guidance

And much more.

Target Audience

Aspiring Data Scientists, IT Professionals, Marketing & Sales Professionals, Engineers, Domain Experts, and freshers who wish to learn data science.

Prerequisites

No pre-requisites

Data Science Overview

1. What is Data Science?

2. Data Science vs Data Analytics vs AI vs ML

3. Applications of Data Science

4. Data Science life-cycle

5. Careers in Data Science

6. Salary in Data Science



Module 1 - SQL

Working with Databases

- ✓ SQL Schema
- ✓ Inserting Comments in SQL
- ✓ Creating Databases
- ✓ Creating SQL Tables
- ✓ Types Of SQL KEYS
- ✓ Primary Key
- ✓ Foreign Key
- ✓ Composite Key
- ✓ Super Key
- ✓ Alternate Key
- ✓ CREATE Table
- ✓ INSERT Data

Introduction To SQL for Data Science

- ✓ Types of Databases
- ✓ What is a Query?
- ✓ What is SQL?
- ✓ SQL or SEQUEL?
- ✓ SQL Installation

COURSE CONTENT

- ✓ Extra Help in Installing SQL
- ✓ Overview of SQL workbench
- ✓ Introduction To SQL Commands

SQL Databases

- ✓ Creating Existing Databases
- ✓ Overview Of Existing Databases
- ✓ The SELECT Statement in Details
- ✓ The ORDER BY Clause
- ✓ The WHERE Clause
- ✓ Operation with SELECT statement
- ✓ Aliasing in SQL
- ✓ The DISTINCT Keyword
- ✓ WHERE Clause with SQL Comparison operators
- ✓ The AND, OR and NOT Operators
- ✓ The IN Operator
- ✓ The BETWEEN Operator
- ✓ The LIKE Operator
- ✓ The REGEXP Operator
- ✓ IS NULL & IS NOT NULL Operator
- ✓ The ORDER BY Clause in Details
- ✓ The LIMIT Clause

SQL Joins

- ✓ Introduction To SQL JOINS
- ✓ Joining Across Multiple Databases
- ✓ Joining Table to Itself
- ✓ Joining Across Multiple SQL Tables
- ✓ LEFT and RIGHT JOIN

Working with Existing SQL Table

- ✓ INSERTING Into Existing Table
- ✓ INSERTING Multiple Data Into Existing Table
- ✓ Creating A Copy of a Table
- ✓ Updating Existing Table
- ✓ Updating Multiple Records In Existing Table

SQL Functions

- ✓ COUNT () Function
- ✓ SUM() Function
- ✓ AVG() Function
- ✓ SQL Combined Functions
- ✓ Count Function in Details
- ✓ The HAVING() Function
- ✓ LENGTH() Function
- ✓ CONCAT() Function

- ✓ INSERT() Function
- ✓ LOCATE() Function
- ✓ UCASE() & LCASE() Function

Sub-query

- ✓ Basic Subquery
- ✓ Subquery with Aggregate Functions
- ✓ Subquery with Conditional Logic
- ✓ Subquery with Joins

Case Statements & Common Table Expression

- ✓ Understanding of Case Statements
- ✓ Case Statements with Aggregate Functions
- ✓ Understanding of Common Table Expression
- ✓ Common Table Expression with Joins



Module 2 - Python

Introduction to Python for Data Science

- ✓ Install and Write Your First Python Code
- ✓ Introduction to Jupyter Notebook And Jupyter Lab
- ✓ Working with Code Vs Markdown
- ✓ Introduction To Google Collab

Python Basics

- ✓ Keywords And Identifiers
- ✓ Python Comments
- ✓ Python Docstring
- ✓ Python Variables
- ✓ Rules and Naming Conventions for Python
- ✓ Variables
- ✓ Python Output() Function
- ✓ Input() Function In Python
- ✓ Import() Function In Python

Python Operators

- ✓ Arithmetic Operators
- ✓ Comparison Operators
- ✓ Logical Operators
- ✓ Bitwise Operators
- ✓ Assignment Operators
- ✓ Special Operators
- ✓ Membership Operators

Python Flow Controls

- ✓ If Statement
- ✓ IfElse Statement
- ✓ Elif Statement
- ✓ For loop
- ✓ While loop
- ✓ Break Statement
- ✓ Continue Statement

String Objects

- ✓ Basic data structure in python
- ✓ String object basics
- ✓ String Inbuilt methods

- ✓ Splitting and Joining strings
- ✓ String format functions

List

- ✓ List object basics
- ✓ List methods
- ✓ List as stack and queues
- ✓ List comprehensions

Tuples, Set, Dictionaries and Functions

- ✓ Tuples, Sets, Dictionary object
- ✓ Dictionary Object methods
- ✓ Dictionary Comprehensions
- ✓ Dictionary View objects
- ✓ Function basics, Parameter passing, Iterators
- ✓ Generator functions
- ✓ Lambda functions
- ✓ Map, Reduce, Filter functions

OOP's Concept

- ✓ OOP's basic concepts
- ✓ Creating classes
- ✓ Pilers of OOP's
- ✓ Inheritance
- ✓ Polymorphism, Encapsulation, and Abstraction
- ✓ Decorator
- ✓ Class methods and Static Methods
- ✓ Special (Magic/Dunder) Methods
- ✓ Property decorators - Getters, Setters, and Deleters

Files

- ✓ Working with files
- ✓ Reading and writing files
- ✓ Buffered read and write
- ✓ Other file methods
- ✓ Logging, debugger
- ✓ Modules and statements

Exception Handling

- ✓ Difference between exceptions and error
- ✓ Exceptions Handling with try-except
- ✓ Custom exception handling
- ✓ List of general use exceptions
- ✓ Best practice exception handling

Flask

- ✓ Flask Introduction
- ✓ Flask application
- ✓ Open-link Flask
- ✓ App Routing Flask
- ✓ URL Building Flask
- ✓ HTTP Methods Flask
- ✓ Flask project - Food app, postman, Swagger

NumPy

- ✓ Ndarray Object
- ✓ Data Types
- ✓ Array Attributes
- ✓ Array Creation Routines
- ✓ Array from Existing
- ✓ Data Array From Numerical Ranges

- ✓ Indexing & Slicing
- ✓ Advanced Indexing
- ✓ Broadcasting
- ✓ Iterating Over Array
- ✓ Array Manipulation
- ✓ Binary Operators
- ✓ String Functions
- ✓ Mathematical Functions
- ✓ Arithmetic Operations
- ✓ Statistical Functions
- ✓ Sort, search and counting functions
- ✓ Byte Swapping
- ✓ Copies & Views
- ✓ Matrix Library
- ✓ Linear Algebra

Pandas

- ✓ Pandas- Series
- ✓ Loc & iLoc
- ✓ Data Frame Introduction
- ✓ Operations On Pandas Data Frame
- ✓ Selection And Indexing On Pandas Data Frame
- ✓ Reading A Dataset Into Pandas Data Frame
- ✓ Adding A Column To Pandas Data Frame
- ✓ How To Drop Columns And Rows In Pandas Data Frame
- ✓ How To Reset Index In Pandas Data Frame
- ✓ How To Rename A Column In Pandas Data Frame
- ✓ Tail(), Column and Index
- ✓ How To Check For Missing Values or Null Values(isnull()
Vs Isna())
- ✓ Pandas Describe Function
- ✓ Conditional Selection With Pandas
- ✓ How To Deal With Null Values
- ✓ How To Sort Values In Pandas
- ✓ Pandas Groupby
- ✓ Count() & Value_Count()
- ✓ Concatenate Function

- ✓ Join & Merge(Creating Dataset)
- ✓ Pandas-Join
- ✓ Visualisation

Visualisation

- ✓ Matplotlib
- ✓ Seaborn
- ✓ Cufflinks
- ✓ Plotly
- ✓ Bokeh

Python Projects

- ✓ Weeding Scripts Image resizing
- ✓ Jupyter Notebook merging, reading etc
- ✓ Sending emails
- ✓ Weather app
- ✓ Memes Generator
- ✓ Food Log App
- ✓ Web Scrapping
- ✓ Web crawlers for image data sentiment
- ✓ Analysis and product review sentiment analysis

Module 3 – Statistics

Introduction to basic Statistics terms

- ✓ Types of Statistics
- ✓ Types of data
- ✓ Levels of measurement
- ✓ Measures of Central Tendency
- ✓ Measure of dispersion
- ✓ Random Variables
- ✓ Set
- ✓ Skewness
- ✓ Covariance and Correlation

Probability distribution function

- ✓ Probability density/distribution function
- ✓ Types of the probability distribution
- ✓ Binomial Distribution
- ✓ Poisson distribution
- ✓ Normal Distribution (Gaussian Distribution)
- ✓ Probability Density Function and Mass Function
- ✓ Cumulative Density Function
- ✓ Examples of Normal Distribution

- ✓ Bernoulli Distribution
- ✓ Uniform Distribution
- ✓ Z Stats
- ✓ Central Limit Theorem
- ✓ Estimation

Hypothesis Testing

- ✓ Hypothesis Testing's Mechanism
- ✓ P-Value
- ✓ T-Stats
- ✓ Student T distribution
- ✓ T-Stats vs Z-Stats: Overview
- ✓ When to use a t-tests vs z-tests
- ✓ Type 1 & Type 2 Error
- ✓ Bayes Statistics (Bayes Theorem)
- ✓ Confidence Interval(CI)
- ✓ Confidence Intervals and the Margin of Error
- ✓ Interpreting confidence levels and confidence intervals
- ✓ Chi-Square Test
- ✓ Chi-Square Distribution using Python
- ✓ Chi-Square for Goodness of Fit Test
- ✓ When to use which statistical distribution?

- ✓ Analysis Of Variance (ANOVA)
- ✓ Assumptions to use ANOVA
- ✓ Anova three types
- ✓ Partitioning of Variance in the ANOVA
- ✓ Calculating using Python
- ✓ F-Distribution
- ✓ F-Test (variance ratio test)
- ✓ Determining the Values of F
- ✓ F Distribution using Python

Linear Algebra

- ✓ Linear Algebra
- ✓ Vector
- ✓ Scaler
- ✓ Matrix
- ✓ Matrix Operations and Manipulations
- ✓ Dot product of two vectors
- ✓ Transpose of a Matrix
- ✓ Linear Independence of Vectors
- ✓ Rank of a Matrix
- ✓ Identity Matrix or Operator
- ✓ Determinant of a Matrix

- ✓ Identity Matrix or Operator
- ✓ Determinant of a Matrix
- ✓ Inverse of a Matrix
- ✓ Norm of a Vector
- ✓ Eigenvalues and Eigenvectors
- ✓ Calculus
- ✓ Solving stats problem with python
- ✓ Stats problem implementation with scipy



Module 4 – GitHub for Data Science

Introduction to GitHub for Data Science

- ✓ Setting up GitHub account for Data Science projects
- ✓ Create GitHub Profile for Data Science
- ✓ Create GitHub Project Description for Data Science



Module 5 – Machine Learning

- ✓ AI vs ML vs DL Vs DS
- ✓ Supervised, Unsupervised, Semi-supervised, Reinforcement Learning
- ✓ Train, Test, Validation Split performance
- ✓ Overfitting, Underfitting
- ✓ Bias vs Variance

Feature engineering

- ✓ Handling Missing Data
- ✓ Handling imbalance, data up-sampling
- ✓ Down-Sampling
- ✓ Smote
- ✓ Data interpolation
- ✓ Handling Outliers
- ✓ Filter Method
- ✓ Wrapper method
- ✓ Embedded Methods Feature Scaling
- ✓ Standardization Mean Normalization
- ✓ Min-Max Scaling Unit Vector Feature Extraction

- ✓ PCA (Principle Component Analysis) Data Encoding
- ✓ Nominal Encoding One hot encoding
- ✓ One hot encoding with multiple categories Mean Encoding
- ✓ Ordinal Encoding Label Encoding
- ✓ Target guided ordinal encoding Covariance
- ✓ Correlation Check
- ✓ Pearson correlation coefficient Spearman's Rank correlation VIF

Feature Selection

- ✓ Feature Selection
- ✓ Recursive Feature Elimination
- ✓ Backward Elimination
- ✓ Forward Elimination

Exploratory Data Analysis

- ✓ Feature Engineering and Selection
- ✓ Analyzing Bike Sharing Trends
- ✓ Analyzing Movie Reviews Sentiment
- ✓ Customer Segmentation and Effective Cross Selling
- ✓ Analyzing Wine Types and Quality
- ✓ Analyzing Music Trends and Recommendations
- ✓ Forecasting Stock and Commodity Prices

Regression Analysis

- ✓ Linear Regression
- ✓ Gradient Descent
- ✓ Multiple Linear Regression
- ✓ Polynomial Regression
- ✓ R square and Adjusted R square
- ✓ RMSE , MSE, MAE comparision
- ✓ Regularized Linear Models
- ✓ Ridge Regression
- ✓ Lasso Regression
- ✓ Elastic Net
- ✓ Complete end-to-end project with deployment

Logistics Regression

- ✓ Logistics Regression in-depth mathematical intuition
- ✓ In-depth geometrical intuition
- ✓ Hyper parameter tuning
- ✓ Grid search CV
- ✓ Randomize search CV
- ✓ Data Leakage
- ✓ Confusion Matrix
- ✓ Precision, recall, F1 score, ROC, AUC

- ✓ Best metric selection
- ✓ Multiclass classification in LR
- ✓ Complete end-to-end project with deployment

Decision tree

- ✓ Decision Tree Classifier
- ✓ In-depth mathematical intuition
- ✓ In-depth geometrical intuition
- ✓ Confusion Matrix
- ✓ Precision, Recall, F1 score, ROC, AUC
- ✓ Best metric selection
- ✓ Decision Tree Regressor
- ✓ In-depth mathematical intuition
- ✓ In-depth geometrical intuition
- ✓ Performance metrics
- ✓ Complete end-to-end project with deployment

Support Vector Machines

- ✓ Linear SVM Classification
- ✓ In-depth mathematical intuition
- ✓ In-depth geometrical intuition
- ✓ Soft Margin Classification

- ✓ Nonlinear SVM Classification
- ✓ Polynomial Kernel
- ✓ Gaussian, RBF Kernel
- ✓ Data Leakage
- ✓ Confusion Matrix
- ✓ precision, recall, F1 score, ROC, AUC
- ✓ Best metric selection
- ✓ SVM Regression
- ✓ In-depth mathematical intuition
- ✓ In-depth geometrical intuition
- ✓ Complete end-to-end project with deployment

Naïve Bayes

- ✓ Bayes Theorem
- ✓ Multinomial Naïve Bayes
- ✓ Gaussian Naïve Bayes
- ✓ Various Type of Bayes theorem and its intuition
- ✓ Confusion Matrix
- ✓ Precision, Recall, F1 score, ROC, AUC Best metric selection
- ✓ Complete end-to-end project with deployment

Ensemble Techniques and its types

- ✓ Definition of Ensemble techniques
- ✓ Bagging Technique
- ✓ Bootstrap Aggregation
- ✓ Random Forest (Bagging Technique)
- ✓ Random Forest Regressor
- ✓ Random Forest Classifier
- ✓ Complete end-to-end project with deployment

Boosting

- ✓ Boosting Technique ADA Boost Gradient Boost
- ✓ XG Boost
- ✓ Complete end-to-end project with deployment

Stacking techniques

- ✓ Stacking Technique
- ✓ Complete end-to-end project with deployment

KNN

- ✓ KNN Classifier
- ✓ KNN Regressor
- ✓ Variants of KNN
- ✓ Brute Force KNN
- ✓ K-Dimension Tree
- ✓ Ball Tree
- ✓ Complete end-to-end project with deployment

Dimensionality Reduction

- ✓ The curse of Dimensionality
- ✓ Dimensionality Reduction Technique
- ✓ PCA (Principle Component Analysis)
- ✓ Mathematics Behind PCA
- ✓ Scree Plots
- ✓ Eigen-decomposition Approach

Clustering

- ✓ Clustering and their types K-Means Clustering
- ✓ K-Means++
- ✓ Batch K-Means
- ✓ Hierarchical Clustering DBSCAN

- ✓ Evaluation of Clustering
- ✓ Homogeneity, completeness and V-measure Silhouette Coefficient
- ✓ Davies-Bouldin Index Contingency Matrix
- ✓ Pair Confusion Matrix
- ✓ Extrinsic Measure
- ✓ Intrinsic Measure
- ✓ Complete end-to-end project with deployment

Anomaly Detection

- ✓ Anomaly Detection Types
- ✓ Anomaly Detection Applications
- ✓ Isolation Forest Anomaly Detection Algorithm
- ✓ Density-Based Anomaly Detection (Local Outlier Factor) Algorithm
- ✓ Support Vector Machine Anomaly Detection Algorithm
- ✓ DBSCAN Algorithm for anomaly Detection
- ✓ Complete end-to-end project with deployment

Time Series

- ✓ What is a time series? Old Techniques
- ✓ ARIMA
- ✓ ACF and PACF
- ✓ Time-dependent seasonal components
- ✓ Auto regressive (AR), moving average (MA) and mixed ARMA-modeller
- ✓ The Random Walk Model
- ✓ Box-Jenkins methodology
- ✓ Forecasts with ARIMA and VAR models
- ✓ Dynamic models with time-shifted explanatory variables
- ✓ The Koyck transformation
- ✓ Partial adjustment and adaptive expectation models
- ✓ Granger's causality tests
- ✓ Stationarity, unit roots and cointegration Time series model performance
- ✓ Various approach to solve time series problem Complete end-to-end project with deployment
- ✓ Prediction of NIFTY stock price and deployment

NLP Basic

- ✓ Tokenization
- ✓ POS Tags and Chunking Stop Words
- ✓ Stemming and Lemmatization
- ✓ Named Entity Recognition (NER)
- ✓ Word Vectorization (Word Embedding) TFIDF
- ✓ Complete end-to-end project with deployment

Model retraining approach

Auto ML

- ✓ H2O
- ✓ Pycaret
- ✓ Auto Sk-Learn
- ✓ Auto Time Series
- ✓ Auto ViML
- ✓ Auto Gluon
- ✓ Auto Viz TPOT
- ✓ Auto Neuro

Major projects

- ✓ Healthcare analytics prediction of medicines based on FITBIT band
- ✓ Revenue forecasting for start-ups
- ✓ Prediction of order cancellation at the time of ordering inventories
- ✓ Anomaly detection in inventory packaged material
- ✓ Fault detection in wafflers based on sensor data
- ✓ Demand forecasting for FMCG product
- ✓ Threat identification in security system
- ✓ Defect detection in vehicle engine
- ✓ Food price forecasting with Zomato dataset
- ✓ Fault detection in wafflers based on sensor data
- ✓ Cement Strength reg
- ✓ Credit Card Fraud
- ✓ Forest Cover Classification
- ✓ Fraud Detection
- ✓ Income Prediction
- ✓ Mushroom classifier
- ✓ Phishing Classifier
- ✓ Thyroid Detection
- ✓ Visibility climate

Module 6 – Deep Learning

Neural Network

- ✓ A Simple Perception
- ✓ Detail mathematical Explanation
- ✓ Neural Network overview and its use case
- ✓ Various Neural Network architect overview
- ✓ Use case of Neural Network in NLP and computer vision
- ✓ Activation function -All name Multilayer Network
- ✓ Loss Functions
- ✓ Optimizers
- ✓ Forward and Backward Propagation
- ✓ weight initialization technique vanishing gradient problem
- ✓ Exploding gradient problem Visualization of NN

TensorFlow Installation

- ✓ Environment setup for Deep learning Collab pro setup
- ✓ TensorFlow Installation 20
- ✓ TensorFlow Installation 16 with virtual environment
- ✓ TensorFlow 20 function
- ✓ TensorFlow 20 neural network creation
- ✓ TensorFlow 16 functions
- ✓ TensorFlow 16 neural network and its functions

- ✓ Keras Introduction
- ✓ Keras in-depth with neural network creation
- ✓ Mini project in TensorFlow

Pytorch

- ✓ Pytorch installation
- ✓ Pytorch functional overview
- ✓ Pytorch neural network creation

MXNet

- ✓ Mxnet installation
- ✓ Mxnet in depth Function overview
- ✓ Mxnet model creation and Training

KERAS Tuner

- ✓ Keras Tuner installation and overview
- ✓ Finding best parameter from Keras tuner
- ✓ Keras tuner application across various neural network

CNN overview

- ✓ CNN definition
- ✓ various CNN based architecture explanation end to end
CNN network CNN Explainer
- ✓ Training CNN

Module 7 - Computer Vision Projects

- ✓ Traffic Surveillance System
- ✓ Object Identification
- ✓ Object Tracking
- ✓ Object Classification
- ✓ TensorFlow Object Detection
- ✓ Image to Text Processing
- ✓ Speech to Speech analysis
- ✓ Vision Based Attendance System



Module 8 – Natural language processing

- ✓ Computational Linguistic
- ✓ History of NLP
- ✓ Why NLP
- ✓ Use of NLP
- ✓ Natural Language Toolkit (NLTK)

Text processing

- ✓ Importing Text
- ✓ Web Scrapping
- ✓ Text Processing
- ✓ Understanding Regex
- ✓ Text Normalisation
- ✓ Word Count
- ✓ Frequency Distribution
- ✓ Text Annotation
- ✓ Use of Annotator
- ✓ String Tokenization
- ✓ Annotator Creation
- ✓ Sentence processing
- ✓ Lemmatization in text processing

- ✓ POS
- ✓ Named Entity Recognition
- ✓ Dependency Parsing in text
- ✓ Sentimental Analysis

Spacy

- ✓ Spacy Overview
- ✓ Spacy function
- ✓ Spacy function implementation in text processing
- ✓ POS tagging, challenges and accuracy
- ✓ Entities and named entry Recognition, Interpolation, Language models
- ✓ Text blob

RNN

- ✓ Recurrent Neural Networks
- ✓ Long Short Term Memory (LSTM) Bi LSTM
- ✓ stacked LSTM
- ✓ GRU implementation
- ✓ Building a Story writer using character level RNN

Word Embedding

- ✓ Word embeddings
- ✓ Co-occurrence vectors
- ✓ Word2vec
- ✓ Doc2vec

Attention Based model

- ✓ Seq2Seq
- ✓ Encoders and Decoders Attention Mechanism
- ✓ Attention Neural Networks Self Attention

NLP project

- ✓ Machine Translation
- ✓ Abstractive Text Summarization
- ✓ Keyword Spotting
- ✓ Language Modelling
- ✓ Document Summarization
- ✓ Text classification
- ✓ Detecting fake text
- ✓ Fake News Detector
- ✓ Python Plagiarism Checker type a message
- ✓ Text to speech
- ✓ Keyword Spotting
- ✓ Document Ranking
- ✓ Text Search (with Synonyms) Language Modelling
- ✓ Spam Detector
- ✓ Image Captioning

Module 9 – Data Analytics

Tableau (basics to advanced) projects

- ✓ Human Recourse
- ✓ Supply Chain
- ✓ Sales return
- ✓ E-commerce
- ✓ Project management
- ✓ Sales dashboard

Powerbi (basics to advanced) projects

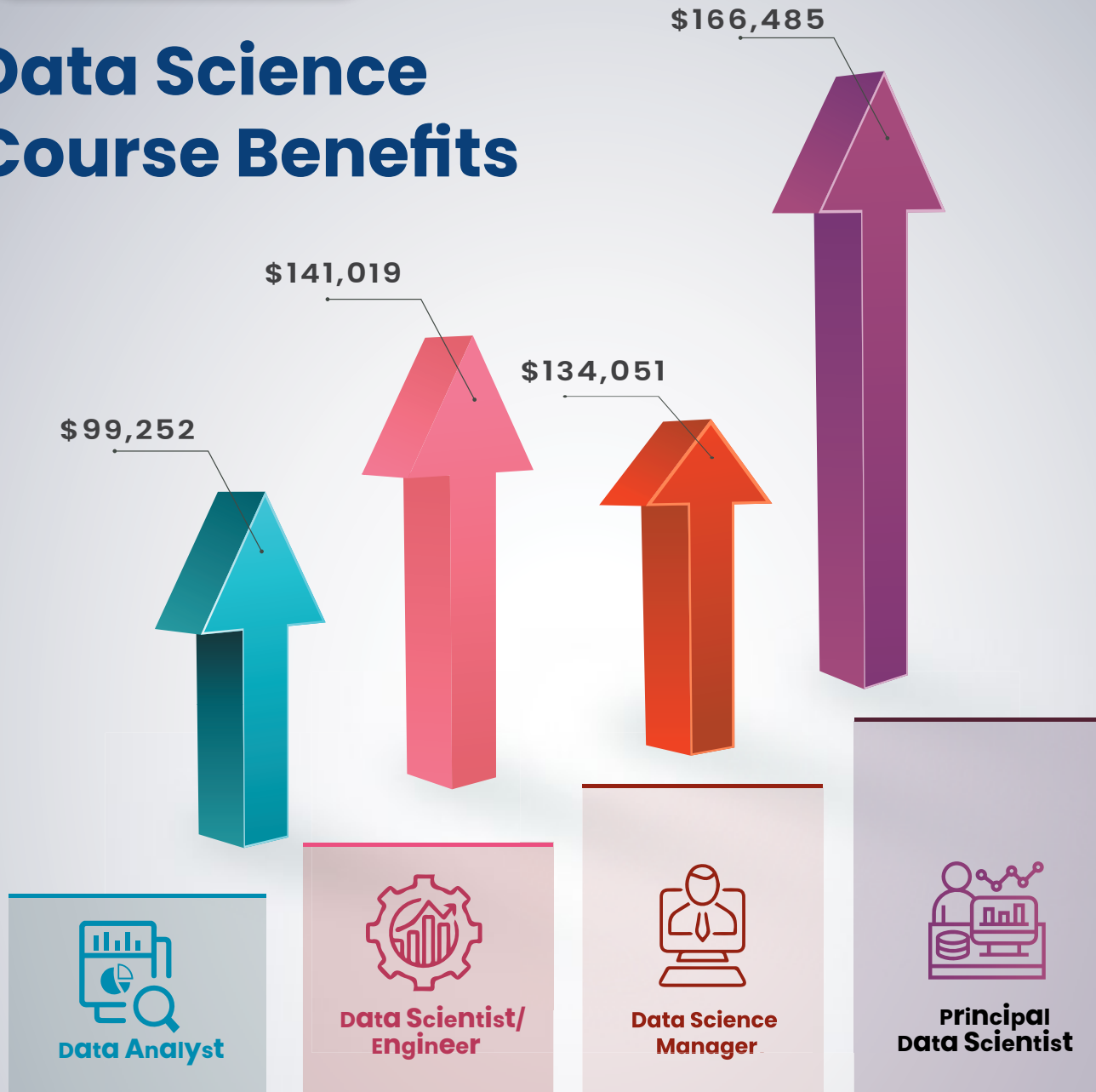
- ✓ Cost insights
- ✓ Management insights
- ✓ Retail insights

Module 10 – To make you Job Ready

- ✓ Get guidance to master the concepts by participating in FREE hands-on projects
- ✓ Virtual Internships
- ✓ Resume Building
- ✓ Mock Interviews to be job ready



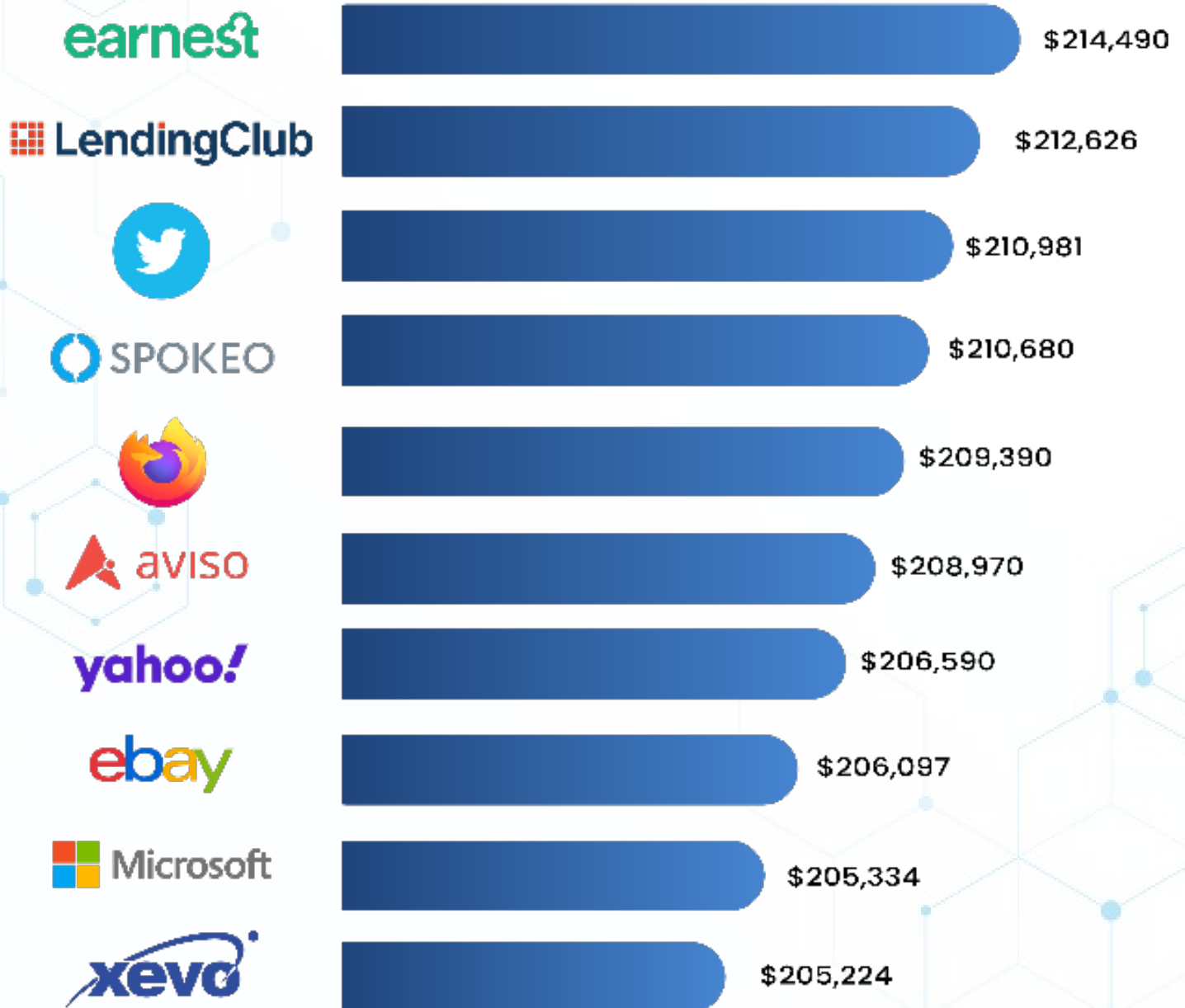
Data Science Course Benefits



Source: 365 Data Science



Top 10 Highest Paying Companies along with Median Pay



Source: 365 Data Science