

6 WEEKS CERTIFICATION COURSES IN DATA SCIENCE Industrial Training

Gain 100 Projects Hands-on Experience



1 Python

600 + Python problems are exercised during the training session to solve complex industrial problems and to prepare for competitive interviews in most of the global environments. These problems are going to help the trainees to go with a clarity in their future prospects and professional career.

2 Machine Learning

40+ Projects are considered for **Machine Learning** modelling that suits most of the industrial demands. Lot of statistical data available from third-party sources and real-time data will be analyzed during the training. A clear understanding of different ML models allows the trainee to be more competitive towards model building.

3 SQL & Power BI

40+ Power BI Projects & Dashboards will be developed to prepare impactful data analytics with attractive visualizations to become professional data analyst. SQL is one of the popular & demanding database technologies used for most of the data analytics applications across the globe.

4 Deep Learning

10+ DL projects are considered and will help in analyzing the complicated datasets from real-time environments. A critical approach to solve most of the medical data is preferable during the experiments to ensure that a practical approach is followed for industry needs.

5 Natural Language Processing

10+ NLP Projects are considered, and they will cover wide range of projects to evaluate data from some of the social media platforms to gain real data to practice. These projects are going to be more critical in assessing the feedback and customer opinions at different levels in global markets.

6 Technical Writing Skills

Consolidated practice of **technical writing skills & paper publishing** is considered to ensure a data scientist is more expressive & critical in presenting the data with great analytical insights. Sensible statements and storytelling practices will be considered seriously for **about 10 articles**.



This training program is sponsored by
HBIC Solutions



What is Data Science?

Data Science is a multidisciplinary field that combines statistical analysis, programming, and domain expertise to extract meaningful insights from structured and unstructured data. In today's data-driven world, organizations rely on data science to make informed decisions, optimize operations, and drive innovation. From building predictive models to uncovering trends and patterns, data science has become a cornerstone of industries like healthcare, finance, e-commerce, and technology. This field offers endless opportunities for professionals to solve complex problems, enhance business strategies, and shape the future with data-driven solutions.

Why with HBIC Solutions?

- A competitive environment to work with
- Allows you to be more critical and competitive in your approach while learning and practicing
- Keeps you on your toes to be catch the phase of training and allows you to solve all defined targets within the defined timelines
- Regular assessment and reviews of your work with one-to-one approach
- Keen monitoring of individual activities during the training that allows you to focus on your individual targets while working with teams
- Ensures that you are catching the technology that is needed by the present industry and markets

INNOVATE, IMPLEMENT & INTEGRATE
for a human touch at workplace with large dataflow in the digital era.

This Program is Ideal for

- Individuals with a bachelor's degree and people who are passionate for learning data science.
- IT experts looking to move into roles in data analytics or data science.
- Those already working in business intelligence and looking to expand their knowledge in data science.
- Software developers and project managers who want to integrate data science into their skill set.
- Fresh graduates or individuals at the beginning of their career who want to dive into data science.
- Under graduate students with a keen interest in data science can benefit from this course to gain a strong foundation.
- Individuals looking to understand how to leverage data science for business innovation and entrepreneurship.
- Those working in analytics, digital marketing, or related fields who want to enhance their skills with advanced data science techniques.
- People from non-technical backgrounds but passionate about technology and data science, seeking a career change.

What's Next?

- Scan the QR Code to apply and register with the course.
- Online courses are offered along with interactive sessions with experts.
- Get your timetable and targets in advance with our office representatives.
- Be quick enough to register and book a slot since it's having heavy demand.
- Do not miss any session to ensure that you are following the day-to-day targets without any delays to miss the momentum in different sessions.
- Ask for support and email our team for any kind of extra support or attention.



Python Programming Language

- What is Python?**
 - Definition
 - Key features of Python
- Data Types**
 - Numeric Data Types
 - Sequence Data Types
 - Text Data Type
 - Set Data Types
 - Mapping Data Type
 - Boolean Type
- Data Structures**
 - Strings
 - List(list) Data structure
 - Tuple (tuple)
 - Set (set)
 - Dictionary (dict)
- Conditional statements**
- Looping statements**
- Functions**
- File handling**
- Python date time**
 - Creating Date Objects
 - The strftime() Method

- Data Analysis**
- Numpy**
 - Creating Array
 - Array Operations
 - np.zeros()
 - np.ones()
 - np.arange()
 - np.linspace()
 - Arithmetic operations
 - Element-wise Operations
 - Broadcasting
 - Aggregation functions
 - Indexing and slicing
 - np.dot()
 - Random integers and floats
- Pandas series and dataframe**
 - Creating a Series
 - Indexing and Slicing
 - Basic Operations
 - Pandas DataFrame - Creating a DataFrame
 - Indexing and Slicing
 - Conditional Selection
 - Missing Data Handling
 - Reindexing
 - Sorting
 - Data Cleaning

- Regular Expression**
 - Create a RegEx object
 - search() method
 - group() method
 - Grouping with Parentheses
 - groups() on Match Object
 - Use Escape character
 - Matching Multiple Groups with the Pipe
 - Optional Matching with the Question Mark
 - Matching Zero or More with the Star
 - findall() in regex
 - Matching one or more with the plus
 - Matching Specific Repetitions with Curly Brackets
 - Character Classes
- Matplotlib**
 - Variety of graphs in Matplotlib
- Seaborn**
 - Variety of graphs in Seaborn
- Exception Handling**
 - Exceptions in Python
 - Exception Handling in python

SQL

- Introduction to SQL**
 - What is SQL?
 - Importance of SQL in Database Management
 - Brief History of SQL
- SQL Basics**
 - SQL Syntax
 - Data Types in SQL
- Creating Databases and Tables**
 - Syntax and Example
- Inserting Data into Tables**
 - Syntax
 - Example
- Retrieving Data**
 - SELECT Statement
 - Syntax and Example
- Filtering Data with WHERE Clause**
 - Syntax and Example
- Sorting Data with ORDER BY Clause**
 - Syntax and Example
- Limiting Results with LIMIT Clause**
 - Syntax and Example

- Advanced Retrieval Techniques**
- Inner Join**
 - Syntax and Example
- Left Join**
 - Syntax and Example
- Right Join**
 - Syntax and Example
- Full Join**
 - Syntax and Example
- Aliasing Tables and Columns**
 - Syntax and Example
- Modifying Data**
- Updating Existing Records with UPDATE Statement**
 - Syntax and Example
- Deleting Records with DELETE Statement**
 - Syntax and Example
- Adding New Records with INSERT INTO Statement**
 - Syntax and Example
- Data Aggregation**
- Grouping Data with GROUP BY Clause**
 - Syntax and Example
- Filtering Groups with HAVING Clause**
 - Syntax and Example
- Aggregate Functions (COUNT, SUM, AVG, MAX, MIN)**
 - Syntax and Example

Machine Learning

Supervised Learning

KNN Algorithm

KNN Classification

- Example of KNN Classification

KNN Regression

- Disadvantages of using the KNN algorithm
- Applications of KNN
- Limitations of KNN
- Conclusion

Naïve Bayes

- Definition
- Explanation
- Working Steps
- Learning Phase
- Classification Phase
- Advantages
- Disadvantages

Linear regression algorithm

- Explanation with Example
- Advantages
- Disadvantages

Logistic regression algorithm

- Explanation with Example
- Advantages
- Disadvantages

Support Vector Machines (Classification)

- Definition
- Explanation
- How does SVM work?
- Linear SVM
- Non-Linear SVM
- Advantages of SVM
- Disadvantages of SVM

Support Vector Machines (Regression)

- Definition
- Explanation

Decision Tree (DT) Algorithm for classification

- Advantages of DT Classification
- Disadvantages of DT Classification

DT Algorithm for Regression

- Advantages
- Disadvantages

Random Forest (RF)

- RF Classifier
- RF Regressor
- Advantages of RF
- Disadvantages of RF
- Applications of RF

Boosting Algorithms

- Why Use Boosting Algorithms
- Applications of Boosting Algorithms
- Types of Boosting Algorithms

Adaboost

- Machine learning code upon AdaBoost

Gradient Boosting

- ML Code Upon Gradient Boosting

XGBoost

- Machine Learning Code Upon Gradient Boosting

Advantages and Disadvantages of different boosting algorithms

Unsupervised Learning

Clustering

K-Means Clustering

- Silhouette Score
- Hierarchical Clustering
- Challenged with K-Means Clustering
- Agglomerative Hierarchical Clustering
- Divisive Hierarchical Clustering
- Advantages of Hierarchical Clustering

DBSCAN

- Key Concepts
- Algorithm Steps
- Output
- Advantages of DBSCAN
- Challenges and Considerations

Dimensionality Reduction

- Advantages of Dimensionality reduction
- Principal Component Analysis
- Advantages of PCA
- Principal Component Analysis code

Feature Selection

- Advantages of Feature Selection

Linear Discriminant Analysis

- Advantages of LDA
- Linear Discriminant Analysis code

Singular Value Decomposition

- Advantages of SVD
- Singular Value Decomposition code

Single-Linkage Clustering

Multiple-Linkage Clustering

Power BI

What is Power BI?

Why use of Power BI?

- Power BI Desktop
- Power BI Service
- Power BI Architecture

Getting Started with Power BI

- Downloading and Installing Power BI Desktop
- Creating an Account in Power BI Service
- Signing in to Power BI

Power Query in Power BI

Power Query Editor

- The query Ribbon
- Home Tab
- Transform Tab
- Add Column Tab
- The View Tab

Queries Pane

The Data Pane

Queries Settings Pane

Saving the Work

Data Sources in Power BI

Connecting to various data sources

- Databases
- Files
- Online Services
- Cloud Platforms

Importing data into Power BI

- Steps to Import Data
- Data Import Options

Data Cleaning

Data preparation and transformation

- Steps in Data Preparation and Transformation
- Data Preparation Tools
- Advanced Data Transformation

Building Visualizations

- Creating Basic Visualizations

Data Modelling in Power BI

- Understanding tables and relationships
- Data Modelling and Relationships
- Calculated Columns and Measures
- Data Model Optimization

- Creating calculated columns and measures
- Using DAX (Data Analysis Expressions) and M-language for advanced calculations

Creating Dashboards and Reports

- Building Interactive Dashboards
- Designing Reports with Multiple Pages
- Adding and Arranging Visuals in Reports

Natural Language Processing (NLP)

Introduction to NLP

Definition and Overview

Overview

Applications of NLP

- Language Translation
- Smart Assistance
- Document Analysis
- Online Searches
- Predictive Text
- Automatic Summarization
- Social Media Monitoring
- Chatbot
- Sentiment Analysis
- Email Filtering

Challenges in NLP

Text Processing

- Importance of Text pre-processing
- Tokenization
- Stop word Removal
- Stemming and Lemmatization
- Part-of-Speech Tagging
- Named Entity Recognition

Text Representation

Bag-of-Words Model

- Applications of the Bag-of-Words model in NLP include
- Advantages of BOW
- Disadvantages of BOW

TF-IDF (Term Frequency-Inverse Document Frequency)

- Advantages of TF-IDF over Bag of Words (BoW) in NLP

Word Embedding (Word2Vec, GloVe, BERT)

- Word 2 Vec
- Glove
- BERT

Language Modelling

- N-grams
- Limitations of n-gram
- Neural Language Model (LSTM)
- Introduction to LSTM
- LSTM Architecture
- Working of LSTM
- Advantage
- Disadvantages

Case Studies

Supervised Learning for Text Classification (Spam Detection)

- Problem Statement
- Loading and Exploring the Data
- Pre-processing
- Visualizing Data with a Word Cloud
- Model Training
- Model Evaluation

Airline sentiment Analysis

- Problem Statement
- Objective
- Data Preparation
- Data Pre-processing
- Text to Numeric Conversion using TF-IDF
- Model Building

Deep Learning

Introduction to Deep Learning

- Overview of Neural Networks
- Historical Context and Milestones
- Early Developments
- AI Winter
- Key Milestones
- Current Trends

Importance & Applications of DL

Fundamentals of Neural Networks

- Perceptron's and Activation Functions
- Perceptron Inputs
- Node values (Input values)
- Node weights
- Summation (Aggregation)
- Activation Function

Common Activation Functions

- Sigmoid Function
- Hyperbolic Tangent (Tanh) Function
- Rectified Linear Unit(ReLU)
- Leaky RELU
- Selection and Considerations

Feed forward Neural Networks

- Architecture
- Neurons and Activation Functions
- Weights and Biases
- Forward Propagation
- Training
- Applications
- Challenges and Considerations

Back propagation Algorithm

- Forward Pass
- Backward Pass
- Computing Gradients
- Gradient Descent Optimization
- Training Iterations
- Stochastic Gradient Descent (SGD)
- Challenges and Considerations

Convolutional Neural Networks (CNNs)

- Understanding Convolutional Layers
- CNN architecture
- How Convolutional Layers works
- Layers used to build ConvNets

Transfer Learning with Pretrained CNNs

- What is Transfer Learning
- How Transfer Learning Works
- Approaches to Transfer Learning
- Feature Extraction Transfer Learning
- Popular Pre-Trained Models
- Benefits of Transfer Learning in CNNs

RNN (Recurrent Neural Network)

- One to One
- One to Many
- Many to One
- Many to Many
- Working of RNNs
- Advantages and Disadvantages of Recurrent Neural Network
- Applications of Recurrent Neural Network

About BITs

★ Empowering the Innovators of Tomorrow: A National Platform for Young Engineers & Scientists

In a world driven by innovation, every engineer and scientist takes immense pride in witnessing a platform that empowers the youth to transform their ideas into impactful solutions. This initiative serves as a launchpad for young minds to showcase their creativity, backed by mentorship from esteemed institutions and industry experts.

✈ What We Offer

- Platform for Innovation: A national-level competition inviting young engineering students to present their innovative ideas, with or without a mentor.
- Mentorship Opportunities: Guidance from teachers, professionals, or even family members to nurture and refine ideas.

Student-Led Presentations: Empowering students to take the lead in presenting their projects, fostering confidence and leadership skills.

🎯 Vision

This initiative aims to:

- Ignite the Spirit of Innovation: Encouraging students to think creatively and develop solutions that address real-world challenges.
- Bridge Academia and Industry: Facilitating collaborations that enhance the practical application of academic knowledge.
- Foster Entrepreneurship: Inspiring students to pursue patenting, publishing research papers, and commercializing their innovations with support from venture capitalists and funding agencies.

🏆 The Path to Success

Over a four-month period, participants will:

1. Initiate: Develop a working prototype of their innovative solution.
2. Implement: Refine and test the prototype, incorporating feedback from mentors and peers.
3. Present: Showcase the final product at the national competition, demonstrating its impact and potential.

Global Trend for Data Science



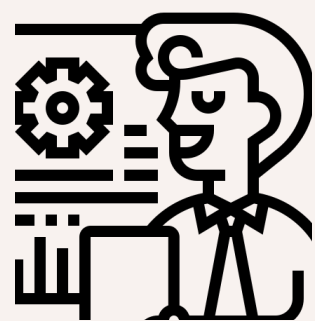
Global Market Growth

The global data science industry is anticipated to grow at a Compound Annual Growth Rate (CAGR) of 22.9% until 2026, showing consistent expansion in job opportunities.



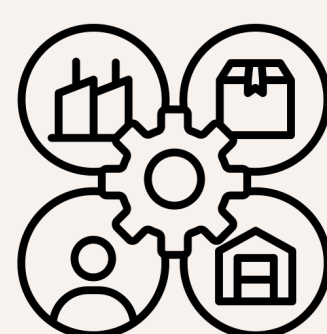
Expanding Job Market

700,000+ Data Science Job Postings: The demand for data science professionals is booming globally, with over 700,000 job openings across industries.



High Demand Expert

The global demand for data science professionals is expected to reach 1 Million by 2026 as industries increasingly adopt data-driven decision-making.



Industry Focus

Sectors such as healthcare, finance, retail, and technology are at the forefront, looking for qualified data scientists to lead innovation and improve operational efficiency.



Competitive Salaries

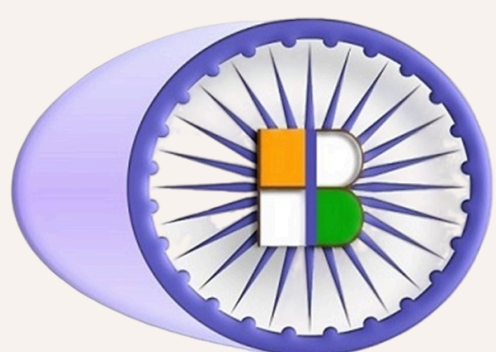
In India, the average salary for an entry-level data scientist is ₹800,000 annually, reflecting the high demand for skilled professionals.



A Competitive Tool

Helping many industrial sectors as a tool to be more competitive along with different technologies. A strong helping hand in the industry.

This program is sponsored by



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