CURRICULUM

Data Science with python Classroom Training

EXIT PROFILE

Professionals skilled in Data Science are highly demanded in the market. Upon successful completion of this training, you will befit one of the following profiles depending upon your experience and qualifications.

- Data Engineer
- Data Analyst
- Advance Analytics Professionals
- Machine Learning Expert
- Data Science Professional
- Data Scientist

WE ARE OFFERING

Python Programming

- Lean how to do data analysis with Python language- Data cleaning, Data Exploration, reporting and visualization using python libraries like Pandas, NumPy, Matplotlib etc.

Statistics

- No previous Background in stats? Don't worry! We are here to make maths simple for you

Machine learning

- What is the probability that your best friend is going to leave the company in next 1 year?
- Help banks to understand who can be a likely defaulter!
- Honda is going to launch a new car? What should be the optimal price they should set for that?

SQL

What is SQL, SQL Architecture

SQL Syntax, Data Types

Insertion of rows,

Joins, Subqueries

Functions

Brief about Functions

Aggregation Function

Data Warehousing concepts

Primary key/Unique key

NLP

- Text processing

- Stemming

- Stopwords

- Text classification

- World Clouds

What else?

We are offering

:
➤ 10 Assignments

➤ 10 real time industry projects on healthcare, banking, telecom and retail

➤ Certification at end of the course

➤ Resume that will help you merge your previous experience with data analytics

➤ Placement preparation- Question bank, PDF's, E-books, Sharing your CV with our Industry links

➤You will be equipped with all the skills on day one of your new analytics job

Introduction to Data Science

➢ What is Data Analytics & Data Science
➢ Different types of Data Analytics (Descriptive, Predictive, Prescriptive)
➢ What is Artificial Intelligence
➢ Machine Learning (Supervised & Unsupervised Learning)
➢ Deep Learning (Artificial Neural Networks, CNN)
➢ Overview of Banking, Healthcare, Telecom domain
➢ Real world Applications of Machine Learning & Deep Learning
➢ What to expect from this course (Salary, Market trends, job roles, Domain)

Introduction to SQL

Basic SQL

➢ What is SQL
➢ SQL in Python
➢ SQL Architecture
➢ SQL Syntax
➢ Data Types
➢ Operators
➢ Fundamentals of SQL
➢ Creating Database
➢ Creating Tables
➢ Insertion of rows
➢ Deletion of rows
➢ Null Values
➢ Removing Duplicate data
➢ Sorting data
➢ Alteration of Data

Introduction to SQL

Advance SQL

➢Joins
➢Relationships in SQL
➢Understanding Joins
➢Types of Joins
➢Subqueries
➢Functions
➢Brief about Functions
➢Aggregation Function
➢Data Warehousing concepts
➢Primary key/Unique key

Complete Practical Session on SQL in Python- Assignments Discussion

Learn Python language

Introduction to Python
➢Introduction to Python Programming
➢Data types and Objects
➢Data Types in Python
➢Basic libraries in python
➢Functions in Python
➢Introduction to Loops
➢Conditional Operators

Objects in Python
➢Lists
➢Tuples
➢Sets
➢ Dictionaries

Numpy- "Numeric python"- Package for mathematical computations
➢Importing Numpy
➢Mathematical functions and operators
➢Arrays
➢Reshaping
➢Indexing and Slicing
➢Sorting arrays
➢Statistical functions

Learn Python language

Data Importing
➢Data import techniques in Python
➢Import data from spread sheets and text files into Python
➢Install packages used for data import

Pandas- Data Manipulation
➢Creating a data frame
➢Reading data from various sources such as CSV, TXT, XLSX,
➢Selecting particular rows or columns from data set
➢Arranging data in ascending or descending order
➢Filtering data based on some conditions
➢Summarizing data
➢Transpose data
➢Merging and concatenating two datasets
➢Iterate over the rows of dataset
➢Writing or Exporting data in CSV or Excel format
➢Rename variables
➢Regular expressions

Data Visualization in Python using Matplotlib
➢Introduction to Matplotlib for 2D-3D graphs
➢multiple forms of both 2D and 3D graphs, like line graphs, scatter plots, bar charts, and more
➢Visualize Geographical data on maps
➢Customize graphs, modifying colours, lines, fonts, and more

Statistics for Business Analytics

Fundamentals of Statistics
➢Basic statistics; descriptive and summary
➢Inferential statistics
➢Statistical tests

Data Prep and Reduction techniques
➢Need for data preparation
➢Check Skewness of data
➢Outlier treatment
➢Missing values treatment

Basic Statistical Tests
➢Statistics Basics Introduction to Data Analytics and Statistical Techniques
➢Variable Distributions and Probability Distributions
➢Normal Distribution and Properties
➢Hypothesis Testing Null/Alternative Hypothesis formulation
➢P Value Interpretation
➢Correlation
➢ANOVA
➢T-Test
➢Chi-Sq test

Machine Learning in Python

Linear Regression Model
➤Basics of regression analysis
➤Correlation, VIF, missing value imputations and outliers
➤Create Linear regression model
➤Interpretation of results
➤Performance metrics for model.
Projects: Hands on project for implementing Linear Regression

Logistic Regression Model
➤Use cases of Logistic regression model.
➤Create a logistic regression model in Python
➤Churn prediction models and management
➤Feature Engineering- Feature Creation, Reduction and Selection
➤Sensitivity, specificity, Confusion matrix.
➤ROC curve.
➤Performance metrics of logistic regression
Projects: Hands on project for implementing Logistic Regression

Clustering
➤What is K-means clustering model
➤Create a clustering model in Python.
➤Interpreting results to select numbers of clusters for model.
➤Checking accuracy of the model.
Projects: Hands on project for implementing Clustering

Machine Learning in Python

Dimensions Reduction- Feature Engineering
➢Feature selection
➢Principal component Analysis

Advance ML technique
➢Time Series
➢Survival Analysis
➢Random Forest
➢GBM
➢Decision Trees
➢XgBoost

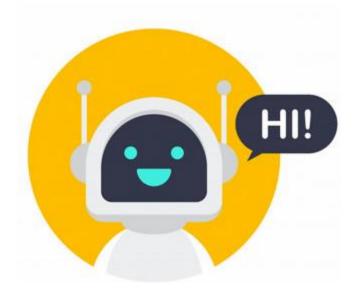**Introduction to AI, deep learning and other ML Techniques**
➢CNN
➢RNN
➢LSTM

Introduction to AI, deep learning and other ML Techniques

➢Text Preprocessing
➢Stemming
➢Stopwords
➢Text Classification
➢World Clouds

Real-World Projects:

Project 1:- Cancer detection using healthcare data
Project 2:-Forecasting sales of a company after 2 years from now.
Project 3:- Predicting who will default and who will not for a bank loan or Credit Card
Project 4:- Predicting the optimal price of a car to be launched
Project 5:- Segmentation of customer base for a retail chain
Project 6:- Predicting customer churn from a telecom industry
Project 7:-Predicting amount of money to be bet in a horse race
Project 8:- Exploratory data analysis, data cleaning exercise on a banking data
Project 9:- Sentiment analysis using twitter data
Project 10:-Text classification model using BBC news articles.

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