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DATA SCIENCE & MACHINE LEARNING WITH PYTHON

CERTIFICATION & TRAINING PROGRAM BY
Ontutes Education Private Limited

WWW.ONTUTES.COM

ONTUTES.COM
THE ED-TECH FIRM

OnTutes.com was founded with a mission to Celebrate Learning, helping professionals, students and learners upgrade their skill sets while evolving in sync with their chosen professional fields. We focus on future and emerging technologies and provide the best Online Live Training for the ones who wish to stay ahead in their chosen professional fields.

UPDATE, UPSKILL AND UPGRADE

at your own convenience without compromising on the quality of learning with all necessary assistance and support from OnTutes.com. We aim at creating a flourishing learning ecosystem for knowledge seekers from diverse fields, enabling them to realize their full potential while being in sync with swift technological evolution at the same time.

The Affordable Education Initiative-which is our goal and we are trying to make sure that latest and future technology education is available at a fair price and it should reach out to masses. And that 's precisely the reason most of the OnTutes courses are available at very less pricing.

We want you to **Learn and Grow** with the rapid pace of changing World and Technology.

Our motto is **Celebrate Learning**.

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WHAT IS DATA SCIENCE **?**

Data science is an inter-disciplinary field or the field of study that combines domain expertise, programming skills and uses scientific methods, processes, algorithms and systems to extract knowledge and insights from many structural and unstructured data.

Data Science is a very vast field but focuses on extracting knowledge from data sets. Data Science helps providing meaningful information based on analysis done on large amounts of data. This, Data-driven Science, combines different fields of work to interpret data for decision-making purposes.

This includes analysis, preparing data for analysis, presenting insights and findings which can help individuals or organization make decisions.

Thus, it includes many times skills like Computer science, Mathematics, Statistics, Visualization, Design and domain expertise from various fields like Banking, Finance, Insurance ,Bioinformatics etc.

HOW TO ENTER IN THE FIELD OF DATA SCIENCE AND DO I NEED TO KNOW EVERYTHING TO START **?**

Absolutely Not.

Like we mentioned, Data science is NOT a single discipline but rather it is an umbrella containing and compassing many fields and technologies, you will **need to know and learn and master the basic concepts first** to enter into the field of Data Science and gradually over the years you will add on to your Data Science experience.

If you are already an expert in any domain like Banking or Finance or Insurance etc. that will also help you tremendously.

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WHY TO CHOOSE DATA SCIENCE AS A CAREER ?

Though it is an individual's choice but there are many reasons why someone should choose Data Science as a career in the current times.

We have researched and here are few insights :

- Interesting and evolving field
- Doing something new
- Various kinds of roles in Data Science Ecosystem
- Positions for all and not only for core technical folks
- Finding and making insights from data
- Adding value to your organization & business
- Growing Demand
- Better than average and high salaries

WHICH COMPANIES ARE HIRING DATA SCIENTISTS IN INDIA?

Almost every other big firm is hiring and looking for Data Scientists, we are mentioning few below based on our research and insights from various sources.

McKinsey & Company · accenture · amazon · Microsoft · ORACLE · wipro · Mu Sigma · fractal

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SO, WHERE & HOW SHOULD I START ?

If you are new to Data Science and even if you don't have any programming background , we always suggest to start with our 4 **months** weekend learning program - **Data Science and Machine Learning with Python**.

Our training and certification program: **Data Science and Machine Learning with Python**, is a premier and starter program for Data Science enthusiasts and is one of the most successful and liked program by various audience.

If you are new to Data Science, this is the program for you.

PROGRAM DURATION

This program is of 4 **months duration** where live classes will be held on **every Saturday and Sunday for minimum 2 hours each**. Additionally, instructors will also provide you various cases studies and reference materials as well for your self study.

WHO ARE THE INSTRUCTORS FOR THIS PROGRAM?

At OnTutes.com , we always strive for quality education and that is why we choose and employ our trainers meticulously. Each of our trainers are highly educated, are experts in their field and have relevant industry exposures.

Also, most of the mentors and advisors associated with OnTutes.com are PhD scholars and renowned individuals in the field of education and technology.

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ELIGIBILITY CRITERIA FOR THIS PROGRAM

None.

If you are passionate about learning Data Science and Machine Learning and you want to get into the field of Data Science, you can enroll in this program.

In every batch of our program, we have seen learners and enthusiasts from various backgrounds.

I DON'T KNOW PROGRAMMING **?**

That is completely OK.
In this program, our expert trainers will teach and start from the very basics and will help you with at every stage of this program.
We will teach you programming as part of this course.

IS IT ONLINE OR OFFLINE PROGRAM

This is complete Live Instructor-led Online program. And you will have the same experience of offline classes program.

DURATION OF THE PROGRAM

This is 4 **months Weekend Learning Program**. Classes will happen every **Saturday and Sunday** for 4 months.

HOW LONG IS EACH CLASS/ SESSION

Each session will be approximately of **2 hours** duration.

WHAT IF I MISS ANY CLASS /SESSION

You will get the recording of every class in this program for your reference and revision.

FEES AND FINANCIAL ASSISTANCE

Please speak with the course advisor on the program fee and EMI options.

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MAJOR HIGHLIGHTS OF THIS PROGRAM

01 Program designed for absolute beginners

02 Weekend Instructor led learning

03 Program created and taught in Python Programming language

04 Certificate of Completion and Achievement to be presented

05 3 Mock Interview Sessions to prepare you for the industry

06 Resume Preparation

07 Placement Assistance

08 Industry Oriented Projects and Real Time Case Studies

Some Projects for your reference are mentioned below , but we always try to introduce more and new meaningful projects in every batch to enhance your learning and to make you up to date.

- Ecommerce Purchase Order Evaluations
- Data Analysis on company HR Datasets
- Customer Analysis
- Industry Projects using multiple Machine Learning Techniques

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PROGRAM CURRICULUM

INTRODUCTION OF THE PROGRAM

- What is Data Science?
- What is Machine learning?
- What is Artificial Intelligence
- Python Environment setup and Installation
- Jupyter Notebook Overview
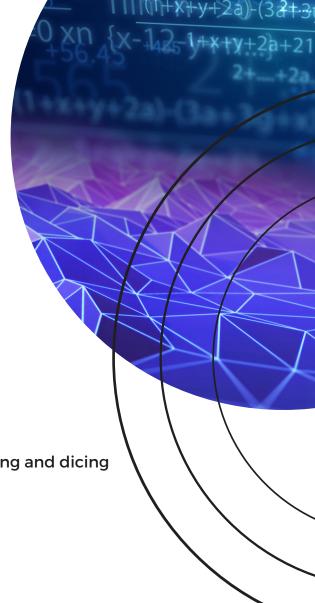- Spyder Overview

PYTHON FOR DATA SCIENCE

- Datatypes in Python (List /Dictionaries / Tuples / Sets)
- Functions, Procedure, lambda expressions, string slicing and dicing
- Python comparison/logical operators
- Loops and Conditionals statements
- Object Oriented Concepts in Python (Class / Object)
- Inheritance / Polymorphism
- Python Special methods
- Error and Exception handling
- File operations in python
- Python OS and SYS operations
- Creating python scripts for automation
- Python practice exercises

STATISTICS & PROBABILITY

- Types of Data
- Mean, Median, Mode
- Using mean, median, and mode in Python
- Variation and Standard Deviation
- Percentiles and Moments

DISTRIBUTION OF DATA

- Types of Data Distribution and it's graphical representation
- Central Limit Theorem
- Outliers and its effects in model building
- Inter Quantile Range
- Covariance and Correlation

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PROBABILITY

- Conditional Probability
- Bayes' Theorem
- Probability Density Function
- Probability Mass Function

REGRESSION ANALYSIS AND UNDERSTANDING HYPOTHESIS TESTING

- Hypothesis Testing
- Null Hypothesis / Alternate Hypothesis
- Level of Significance / Confidence level
- Degree of freedom
- Statistical test ,F-Statistic, T-Test, Jarque Bera test, Omnibus test

INTRODUCTION TO NUMPY

- Numpy array Indexing
- Operations
- Matrix operations, arithmetic and scientific operations
- Exercise on Numpy

INTRODUCTION TO PANDAS

- Pandas Series usage
- Data Frames in Pandas and its usage
- Data manipulation using data frame
- Missing data treatment
- Group by, merging, joining and concatenation operations using Pandas
- Data Input and Output using Pandas
- Web scrapping using Beautiful soup
- Connecting Database / XML and flat files

DATA VISUALIZATIONS

- Importance of data
- Exploration in data science projects
- Understanding Univariate / Bi-variate and multivariate analysis

EXPLORATORY DATA ANALYSIS

- Drawing various plots using Python
- A Crash Course in matplotlib
- Implementation of matplotlib on various datasets
- Exercise on Matplotlib

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SEABORN

- Distribution plot
- Categorical plot
- Matrix plot
- Grids
- Regression plots
- Exercise on Seaborn's library
- Pandas Built in Data Visualization
- Interactive data visualization using Plotly and Cufflinks

MACHINE LEARNING

- Supervised Learning
- Unsupervised Learning
- Reinforcement Learning
- Classification vs Regression Algorithms
- Usage of Machine Learning in Real Time applications

LINEAR AND LOGISTIC REGRESSION

- Theory with Mathematical Implementation
- Linear regression Implementation using Scikit learn package
- Linear Regression implementation using Stats model understanding model summary
- Evaluating and understating the results
- Model theory
- Mathematical Implementation

K-NEAREST NEIGHBORS ALGORITHM

- Concept
- Implementation with Python
- Mathematics behind K-Nearest Neighbors
- Find best K values using Elbow method
- Exercise on K-Nearest Neighbors
- Implementation using Scikit learn library

DECISION TREE AND RANDOM FOREST

- Concept
- Implementation with Python
- Mathematics behind Decision tree

SUPPORT VECTOR MACHINES

- What is Support Vector Machines
- SVM kernels
- Linearly separable data
- Non-Linearly separable data
- SVM project Overview
- Grid Search using SVM

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K-MEANS CLUSTERING

- Mathematical Implementation
- Python implementation
- Elbow method
- Exercise on K-means Clustering

FEATURE ENGINEERING

- Dimensionality reduction using Principal Component Analysis
- Feature Extraction
- Feature Selection
- PCA implementation with Python
- Exercise on PCA

KEY CONCEPTS IN MACHINE LEARNING

- Cross Validation and Bias variance Trade off
- Feature scaling techniques
- Understanding model overfitting and underfitting
- Handling skewed and unbalanced dataset
- Performance evaluation of Machine Learning Model

ENSEMBLE METHOD

- Clubbing multiple Machine Learning techniques
- BAGGING: Implementation with Python
- BOOSTING: Implementation with Python
- Exercise on Decision Tree and Random forest classifier its implementation using Scikit learn library. Advanced Ensemble learning techniques used in Hackathons and Machine Learning competitions

RECOMMENDER SYSTEM

- Application of recommender system in real time applications
- Types of recommender system (User based and Item based recommender system)
- Techniques to implement recommender system
- Exercise on recommender system with Python
- Project

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ENROLL TODAY AND TAKE THE FIRST STEP TO CHANGE YOUR WORLD.

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