EI Systems
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Python Programming + Data Science

COURSE & CONTENT

Available in

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Why should I learn Data Science?

Learning data science can be a valuable investment in your career for several reasons:

1. High Demand: Data science is in high demand across industries due to the increasing availability of data and the need to make data-driven decisions. There is a shortage of skilled data scientists in the market, making it a high-paying and lucrative career option.
2. Career Prospects: Data science offers a wide range of career prospects in various industries such as healthcare, finance, e-commerce, and technology. Some common job roles in data science include data analyst, data scientist, machine learning engineer, and data engineer.
3. Problem Solving: Data science involves analyzing data to solve complex problems, making it a challenging and rewarding field. Data scientists use various techniques such as statistical modeling, machine learning, and data visualization to gain insights from data and make informed decisions.
4. Personal Growth: Learning data science can also help you develop your analytical and problem-solving skills, improve your ability to work with data, and stay updated with the latest technologies and trends.
5. Interdisciplinary Field: Data science is an interdisciplinary field that involves knowledge of statistics, computer science, mathematics, and domain expertise. This makes it a versatile skill that can be applied in various industries and professions.

Overall, learning data science can be a valuable investment in your career, providing you with a range of job opportunities and helping you develop valuable skills in data analysis and problem-solving.

What are career prospects if I learn Data Science?

Data Science is a rapidly growing field with many career prospects. Here are some of the most common career options in Data Science:

1. Data Analyst: Data analysts collect, process, and perform statistical analyses on large data sets using tools such as SQL, Python, and Excel. They then use the insights gained from the data to inform business decisions.
2. Data Scientist: Data scientists use a combination of statistical analysis, machine learning, and data visualization techniques to analyze large datasets and develop predictive models. They use their insights to inform business decisions and improve processes.
3. Machine Learning Engineer: Machine learning engineers design and build machine learning systems that can be applied to a wide range of applications. They work closely with data scientists to build and test predictive models.
4. Business Analyst: Business analysts use data to identify areas for improvement and make recommendations for process optimization. They use their knowledge of data analysis and business processes to identify inefficiencies and propose solutions.
5. Data Engineer: Data engineers build and maintain the infrastructure required to store, process, and analyze large data sets. They work with data scientists and analysts to ensure that the data is available in the correct format for analysis.

6. Artificial Intelligence (AI) Specialist: AI specialists develop and implement machine learning and artificial intelligence algorithms to solve complex business problems. They have expertise in areas such as natural language processing, computer vision, and deep learning.
7. Data Visualization Specialist: Data visualization specialists use tools such as Tableau and Power BI to create visual representations of data. They use their knowledge of data analysis and visualization techniques to create clear, actionable insights from complex data sets.

The demand for skilled professionals in Data Science is high, and it is expected to grow in the coming years as more companies adopt data-driven decision-making. Data Science offers a wide range of career opportunities in various industries such as healthcare, finance, retail, and technology, making it a valuable skill to have.

What is Data Science market size?

The global data science market size is expected to reach USD 274.3 billion by 2026, growing at a compound annual growth rate (CAGR) of 30.0% from 2021 to 2026. This growth is driven by the increasing adoption of data-driven decision-making in businesses, the need to gain insights from large amounts of data, and the availability of advanced analytics tools and technologies.

The data science market is composed of various segments, including software, hardware, and services. The software segment is expected to dominate the market, driven by the increasing adoption of analytics software such as R, Python, and SQL. The services segment, which includes consulting, implementation, and maintenance services, is also expected to grow significantly due to the increasing demand for specialized skills in data science.

Overall, the data science market is expected to continue growing at a rapid pace, driven by the increasing demand for data-driven decision-making and the availability of advanced analytics tools and technologies.

Data Science & Indian job market

Data Science is a growing field in India with many opportunities for skilled professionals. India is home to a large pool of talented data scientists and analysts, making it an attractive destination for companies looking to set up data science teams or outsource their data analytics operations.

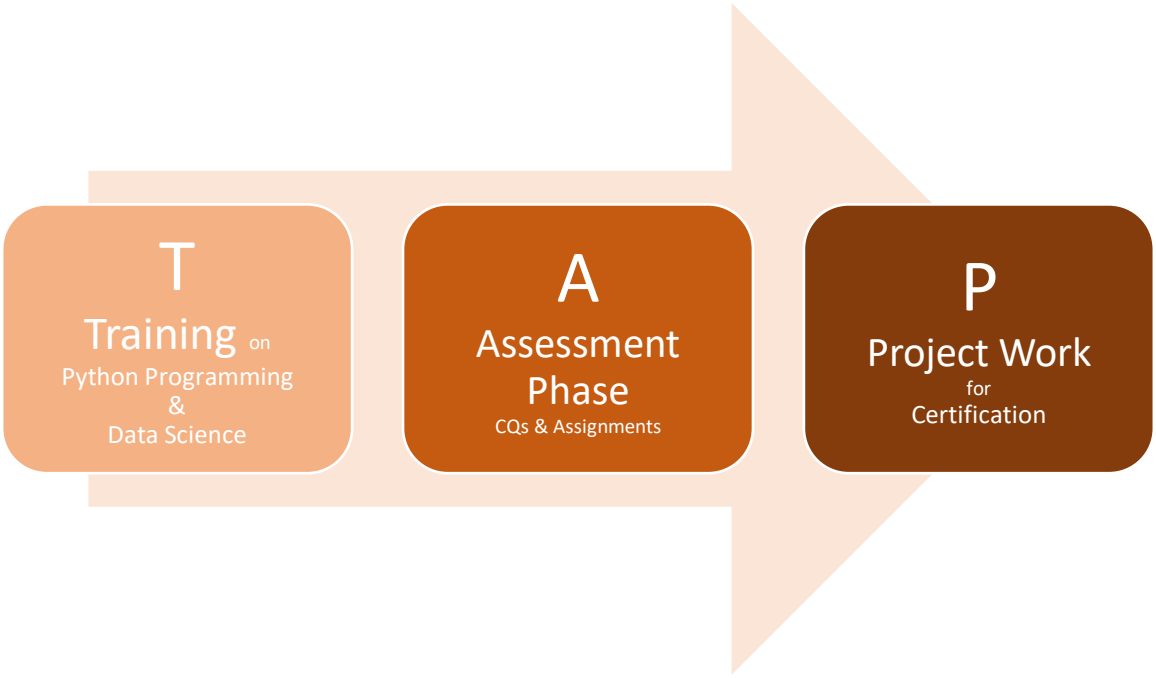
Here are some key facts about the Data Science job market in India:

1. High Demand: There is a high demand for skilled data scientists and analysts in India, driven by the increasing adoption of data-driven decision-making in businesses across various industries. According to a report by Analytics India Magazine, the Indian data analytics industry is expected to reach $3.5 billion by 2025.
2. Top Industries: Some of the top industries hiring data science professionals in India include e-commerce, finance, healthcare, and technology. These industries are increasingly relying on data analytics to drive business decisions and gain a competitive edge.
3. Job Roles: Some of the most common job roles in Data Science in India include data analyst, data scientist, machine learning engineer, and business analyst. There is also a high demand for professionals with expertise in areas such as natural language processing, computer vision, and deep learning.

4. Top Companies: Many top companies in India are hiring data science professionals, including Tata Consultancy Services, Accenture, IBM, and Amazon. Startups and mid-sized companies are also actively hiring data science professionals to help them gain insights from their data.
5. Education and Training: To enter the field of Data Science, it is important to have a strong foundation in mathematics, statistics, and computer science. Many universities in India offer data science courses and degree programs, and there are also many online training courses and bootcamps available.

Overall, the Data Science job market in India is growing and offers many opportunities for skilled professionals. With the increasing adoption of data-driven decision-making in businesses across various industries, the demand for data science skills is expected to continue to grow in the coming years.

Internship Process in a nutshell



Internship process in a nutshell

Prerequisites of this program

Participants from CSE/IT/MCA/BCA/BSc IT/ECE background are eligible to join this program, even if any person who is planning to sit in placement drive(s) or planning to switch in Data Science domain then this program will be very much helpful.

Infrastructural Requirements

We expect participant(s) to have

1. A laptop with Microsoft Windows configuration with minimum 8GB RAM.
2. Laptop Charger/ Adapter for charging purpose.
3. Internet Connectivity.
4. Smartphone (4G/5G)

Post Training Deliverables

Every participant will get all under mentioned deliverables

1. 50 hours training by specialized trainer.
2. Offer Letter
3. Certificate of Internship with Project Mentioning
4. Study Material / Classroom Material
5. Guidance for Entrepreneurship in chosen field or employment support.
6. Chance to assist our trainer in our workshop(s) at IISc, IITs, NITs etc.

Course & Content

All of the sessions will be practical oriented, kindly look on the syllabus which we are going to cover during training days.

Python Programming Module

Session 1 Introduction Why do we need Python? How to Install Python? Execution steps Interactive Shell User Interface or IDE Creating Your First Python Program **Session 2** Memory Management and Garbage Collection Object Creation and Deletion Object Properties Data Types and Operations Numbers String Operations **Session 3** List Tuple Dictionary Other Core Types **Session 4** Statements and Syntax Assignments, Expressions and prints If tests and Syntax Rules While and For Loops	**Session 5** File Operations Opening a file Using Files Other File tools Python Check If File or Directory Exists Python COPY and PASTE File using shutil.copy() Python Rename File and Directory using os.rename() Python ZIP file with Example **Session 6** Functions Function Definition and Call Function Scope Function Arguments **Session 7** Modules and Packages Module Creations and Usage Types of package in Python Package creation Importing packages **Session 8** Classes Classes and Instances Classes method calls Class methods Instance methods Static methods

Session 9 OOPs concept Abstraction Encapsulation Polymorphism Types of Polymorphism Inheritance Types of inheritance **Session 10** Exception Handling Default Exception Handler Except Exceptions Raise an exception User defined exception **Session 11** Accessing Internet Data with Python Manipulating XML with Python	**Activities & Project Discussion** **<u>Activities</u>** Installing different libraries of Python **<u>Project Discussion</u>** Random Password Generator QR Code Generator Alphabetical Letter Pattern creation Sending Email or Whatsapp messages via Python code Speech Recognition Quiz Game File Handling Project

Machine Learning Module

Session 1 Starting with Data Science Overview of this training. Overview of Data Science Terminologies in Data Science **Session 2** Introduction to Machine Learning What is Machine Learning? Types of Machine Learning How Machine Learning works? Usage of Machine Learning. **Session 3 (Revision)** Introduction to Python Programming Introduction to Python and Anaconda Working on Jupyter IDE Conditional statements in Python Different types of data List,Tuple Dictionary Loops	**Session 4** Function & Packages Function Packages Installing different packages of Python **Session 5** Working on Various Python Libraries NumPy Pandas Matplotlib Scikit-learn **Session 6** Working on NumPy Introduction to Numpy Array Creating arrays of different Dimensions Indexing Data processing using Array

Session 7 Data Analysis using Pandas Introduction to Pandas Data Type of Pandas Creating Dataframe using Pandas Importing Dataset using Pandas Various operations on data using Pandas tools **Session 8** Data visualization using Matplotlib Plotting data using Matplotlib library Using various tools of Matplotlib Types of Graph Implementation of different types of Graphs **Session 9** Applying Algorithms on Dataset using Scikit-learn Data splitting Using different algorithms for dataset Prediction Score check	**Session 10** Machine Learning algorithms Regression analysis Simple linear regression Multi linear regression Classification Binary class classification Multi class classification Support Vector Machine KNN algorithm **Projects** 1. Area Price Prediction Project 2. Gender Classification Project 3. Iris Flower Species Classification Project 4. Digit Recognition Project 5. Survival Prediction on Titanic Project 6. Object Recognition Project 7. Insurance Purchase Prediction Project 8. Project Deployment **Datasets** IRIS Dataset BMI Male Female Dataset MNIST Dataset DIGIT Dataset Titanic Dataset CIFAR Dataset

Tools Covered

Note
Eisystems Technologies reserves complete right to alter/modify above mentioned course by deleting or adding sessions in it at the time of delivery of training and attendee will not be having any issue in it as this modification/alteration can be done without any prior notification to attendee/student.

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