



Data Science with Python for Undergraduates

In Collaboration with **IBM**

Table of Contents

1. About the Program
2. Collaborating with IBM
3. About Intellipaate
4. Key Features
5. Career Support
6. Course Advisors
7. Program Curriculum
8. Case Studies & Project Work
9. Certification
10. Intellipaate Success Stories
11. Contact Us





Global Big Data market to reach
\$122 billion in revenue by 2025.

- Frost & Sullivan

About the Program

Intellipaat's Data Scientist training program is specially designed for undergraduates. The course is created and taught by top Data Scientists from India and the United States. In this course, you will study Data Science, Python programming, Machine Learning, statistical libraries, etc. This program focuses on helping you become proficient in using a wide range of Machine Learning algorithms and learning their implementations using Python and statistical libraries to solve complex business problems, along with attaining hands-on exposure to leading Big Data technologies like Apache Hadoop and Spark.

In this course, you will be working on real-time projects that provide industry exposure. After the completion of the course, you will be working on the Capstone project, where you will implement the hard-earned Data Science skills to solve real-world problem statements. You can showcase this project to impress your potential employers. Also, this program includes intensive mock interview sessions and resume creation service from experts.

IBM

Collaborating with IBM

IBM is one of the leading innovators and the biggest player in creating innovative tools for Big Data Analytics. Top subject matter experts from IBM will share knowledge in the domains of Analytics and Big Data through this training program that will help you gain the breadth of knowledge and industry experience.

Benefits for students from IBM:

- Industry-recognized IBM certificate
- Industry in-line case studies and project work



About Intellipaate

Intellipaate is one of the leading online e-learning training providers with more than 600,000 learners across 53+ countries. We are on a mission to democratize education as we believe that everyone has the right to quality education.

Our courses are delivered by subject matter experts from top MNCs, and our world-class pedagogy enables to quickly learn difficult topics in no time. Our 24/7 technical support and career services will help learners jump-start their careers in their dream companies.

Key Features

60

**60 HOURS OF ONLINE LIVE
INSTRUCTOR-LED SESSIONS**



24/7 SUPPORT



**5+ REAL-TIME
INDUSTRY PROJECTS**



10+ CASE STUDIES

IBM

**PROGRAM IN COLLABORATION
WITH IBM**



**INDUSTRY-RECOGNIZED
CERTIFICATION FROM IBM**



**WEEKLY SESSIONS BY TEACHING
ASSISTANTS FOR DOUBT
CLEARANCE**



CAPSTONE PROJECT

Career Support



DEDICATED LEARNING MANAGER

Get mentored by an expert, receive personalized feedback on your performance, and clarify your doubts in no time



PERSONALIZED INDUSTRY MENTOR

We match your profile with the right industry mentor based on your past skills. Their guidance will help you prepare for your dream job



MOCK INTERVIEWS

Mock interviews to make you crack job interviews by top employers



GUARANTEED INTERVIEWS & JOB SUPPORT

Get interviewed by our 400+ hiring partners



RESUME PREPARATION

Get assistance in creating a world-class resume from our career services team

Course Advisors



Diwakar Chittora

Co-founder and CEO, IntelliPaat

He has more than 11 years of experience in developing large-scale BI products for Fortune 500 companies. He also has great experience in doing data analytics on large-scale data. He has worked in companies such as Amex, Mercedes Benz Research, Pentaho, and Wipro in the past.



Niraj Kumar

Co-founder and CTO, DataMetica

Leading data architecture, data modelling and Big Data Vertical. Comes with great expertise on Data Science, Machine Learning, Neural Network, Data Discovery, Text Mining, etc. Worked with top companies like Sears, Neilsen and comes with more than 12 yrs of experience in designing architecture for top fortune 500 companies.



Muthusamy Manigandan

Head Engineering, Amazon India

Mani comes with great experience in Algorithms, Data Science, Big Data, and AI. He has worked on multiple research projects in the past on Data Science, AI and ML for Display Advertising, and Recommendation and Classification systems. He comes with more than 16 years of experience in building large-scale AI products with top MNCs.

Program Curriculum

Introduction to Data Science

What is Data Science, what does a data scientist do, various examples of Data Science in the industries and how Python is deployed for Data Science applications, various steps in Data Science process like data wrangling, data exploration and selecting the model.

Introduction to Python

Introduction to Python programming language, important Python features, how is Python different from other programming languages, Python installation, Anaconda Python distribution for Windows, Linux and Mac, how to run a sample Python script, Python IDE working mechanism, running some Python basic commands, Python variables, data types and keywords.

OOPs in Python

Understanding the OOP paradigm like encapsulation, inheritance, polymorphism and abstraction, what are access modifiers, instances, class members, classes and objects, function parameter and return type functions, Lambda expressions.

NumPy for mathematical computing

Introduction to mathematical computing in Python, what are arrays and matrices, array indexing, array math, inspecting a numpy array, Numpy array manipulation.

SciPy for scientific computing

Introduction to SciPy, building on top of NumPy, what are the characteristics of SciPy, various subpackages for SciPy like Signal, Integrate, Fftpack, Cluster, Optimize, Stats and more, Bayes Theorem with SciPy.

Data manipulation

What is a data Manipulation. using Pandas library for data manipulation, NumPy dependency of Pandas library, Series object in pandas, Dataframe in Pandas, loading and handling data with Pandas, how to merge data objects, concatenation and various types of

joins on data objects, exploring dataset, Cleaning dataset, Manipulating dataset, Visualizing dataset

Data visualization with Matplotlib

Introduction to Visualization, Introduction to Matplotlib, Using Matplotlib for plotting graphs and charts like Scatter, Bar, Pie, Line, Histogram and more, Matplotlib API, Subplots and Pandas built-in data visualization.

Machine learning using Python

Revision of topics in Python (Pandas, Matplotlib, NumPy, scikit-Learn), Introduction to machine learning, need of Machine learning, types of machine learning, workflow of Machine Learning, Uses Cases in Machine Learning, its various algorithms, What is supervised learning, What is Unsupervised Learning.

Supervised learning

What is supervised learning, What is linear regression, Step by step calculation of Linear Regression, Linear regression in Python, Logistic Regression, What is classification, Decision Tree, Confusion Matrix, Random Forest, Naïve Bayes classifier, Support Vector Machine, xgboost.

Unsupervised Learning

Introduction to unsupervised learning, use cases of unsupervised learning, What is clustering, Types of clustering(self-paced)-Exclusive clustering, Overlapping Clustering, Hierarchical Clustering(self-paced), What is K-means clustering, understanding the K-means clustering algorithm, Step by step calculation of k-means algorithm, Demo on k-means using Scikit , Association Rule Mining, Market Basket Analysis , Measures in association rule mining -support, confidence, lift, Apriori Algorithm, Demo on Apriori

Hands-on Exercise – Setting up the Jupyter notebook environment, loading of a dataset in Jupyter, algorithms in Scikit-Learn package for performing Machine Learning techniques and training a model to search a grid.

Python integration with Spark-(selfpaced)

Introduction to pyspark, who uses PySpark, need of spark with python, basics of pysark, Pyspark in industry, pySpark installation, pySpark fundamentals, advantage over mapreduce, pySpark Use-cases, and pySpark demo.

Python for Data Science Projects

Project 1	Analyzing the naming trends using Python
Project 2	Performing Analysis on Customer Churn Dataset
Project 3	Netflix-Recommendation system
Project 4	Python Web Scraping for Data Science
Case Study 1	Create multiple methods using OOPS concept
Case Study 2	Working with NumPy
Case Study 3	Building models with the help of Machine Learning Algorithms
Case Study 4	Building models with the help of Machine Learning Algorithms

Case Studies & Project Work

Parallel to the online classroom training, you will work on multiple assignments and exercises, and at the end of the course, you will work on 1 Capstone project. These exercises and the Capstone project are designed to help you understand and apply your Data Science skills in real-world scenarios.

Capstone Project



You will use your Machine Learning skills to find a reasonable solution. The project involves creating a model and transforming the data to be included in the algorithm. You have to test the solution to determine if additional data or other algorithms are needed to solve the problem.

You can show this project to impress your potential employer and share it on LinkedIn.

Certification

After the completion of the course, you will get a certificate from IBM and IntelliPaat.



Intellipaat Success Stories



Vishal Pentakota

The best part of this online course is the series of hands-on demonstrations the trainer performed. Not only did he explain each concept theoretically, but he also implemented all those concepts practically. Great job! A must go for beginners.



Shreyashkumar Limbhetwala

I want to talk about the rich LMS that Intellipaat Data Science training offered. The extensive set of PPTs, PDFs, and other related course material were of the highest quality, and due to this, my learning with Intellipaat was excellent. I could clear the Cloudera Data Scientist certification in the first attempt.



Giri Karnal

I had taken the Data Science master's program, which is a combo of SAS, R, and Apache Mahout. Since there are so many technologies involved in the Data Science course, getting your query resolved at the right time becomes the most important aspect. But with Intellipaat, there was no such problem as all my queries were resolved in less than 24 hours.



Sharath Reddy Yellapati

The course material was very well organized. The trainer explained the basics of each module to me. All my queries were addressed very clearly. The trainer also made me realize how important this course is for beginners in the IT stream.

CONTACT US

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