

PYTHON FOR DATA SCIENCE CERTIFICATION TRAINING COURSE

About IntelliPaat

IntelliPaat is a global online professional training provider. We are offering some of the most updated, industry-designed certification training programs in the domains of Big Data, Data Science & AI, Business Intelligence, Cloud, Blockchain, Database, Programming, Testing, SAP and 150 more technologies.

We help professionals make the right career decisions, choose the trainers with over a decade of industry experience, provide extensive hands-on projects, rigorously evaluate learner progress and offer industry-recognized certifications. We also assist corporate clients to upskill their workforce and keep them in sync with the changing technology and digital landscape.

About The Course

Intellipaate Python for Data Science training helps you learn the top programming language for the domain of Data Science. You will master the technique of how Python is deployed for Data Science, work with Pandas library for Data Science, do data munging and data cleaning, advanced numeric analysis and more through real-world hands-on projects and case studies.

 <p>Instructor Led Training 39 Hrs of highly interactive instructor led training</p>	 <p>Self-Paced Training 24 Hrs of Self-Paced sessions with Lifetime access</p>	 <p>Exercise and project work 50 Hrs of real-time projects after every module</p>	 <p>Lifetime Access Lifetime access and free upgrade to latest version</p>
 <p>24x7 Support Lifetime 24*7 technical support and query resolution</p>	 <p>Get Certified Get global industry recognized certifications</p>	 <p>Job Assistance Job assistance through 80+ corporate tie-ups</p>	 <p>Flexi Scheduling Attend multiple batches for lifetime & stay updated.</p>

Why take this Course?

- Python's design & libraries provide 10 times productivity compared to C, C++, or Java
- A Senior Python Developer in the United States can earn \$102,000 – indeed.com

Python is one of the best programming languages that is used for the domain of Data Science. Intellipaate is offering

the definitive Python for Data Science training course for learning Python coding, running it on various systems like Windows, Linux, Mac thus making it one of the highly versatile language for the domain of Data analytics. Upon completion of the training you will be able to get the best jobs in the data science for top salaries.

Course Content

1. Introduction to Data Science
2. Introduction to Python
3. Python Basic Constructs
4. Writing OOP in Python and connecting to database
5. NumPy for mathematical computing
6. SciPy for scientific computing
7. Data analysis and machine learning (Pandas)
8. Data Manipulation
9. Data visualization with Matplotlib
10. Supervised Learning
11. Unsupervised Learning
12. Web Scraping with Python
13. Python integration with Hadoop and Spark

Introduction to Data Science

- ❖ What is Data Science and 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

- ❖ Understanding data visualization
- ❖ What is exploratory data analysis and building of hypothesis, plotting and other techniques.

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.

Python Basic Constructs

- ❖ Introduction to a basic construct in Python
- ❖ Understanding indentation like tabs and spaces
- ❖ Code comments like Pound # character, names and variables
- ❖ Python built-in data types like containers (list, set, tuple and dict), numeric (float, complex, int), text sequence (string), constants (true, false, ellipsis) and others (classes, instances, modules, exceptions and more)
- ❖ Basic operators in Python like logical, bitwise, assignment, comparison and more, slicing and the slice operator
- ❖ Loop and control statements like break, if, for, continue, else, range() and more.

Writing OOP in Python and connecting to database

- ❖ 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, connecting with database to pull the data.

NumPy for Mathematical Computing

- ❖ Introduction to mathematical computing in Python
- ❖ What are arrays and matrices, array indexing, array math, ND-array object
- ❖ Data types, standard deviation
- ❖ Conditional probability in NumPy, correlation, covariance

SciPy for Scientific Computing

- ❖ Introduction to SciPy
- ❖ Building on top of NumPy
- ❖ What are the characteristics of SciPy
- ❖ Various sub packages for SciPy like Signal, Integrate, Fftpack, Cluster, Optimize, Stats and more
- ❖ Bayes Theorem with SciPy.

Data Analysis and Machine Learning (Pandas)

- ❖ Introduction to Machine Learning with Python
- ❖ Various tools in Python used for Machine Learning like NumPy, Scikit-Learn, Pandas, Matplotlib and more
- ❖ Use cases of Machine Learning
- ❖ Process flow of Machine Learning and Various categories of Machine Learning
- ❖ Understanding Linear Regression and Logistic Regression
- ❖ What is gradient descent in Machine Learning
- ❖ Introduction to Python DataFrames, importing data from JSON, CSV, Excel, SQL database, NumPy array to DataFrame
- ❖ Various data operations like selecting, filtering, sorting, viewing, joining and combining, how to handle missing values, time series analysis.

Data Manipulation

- ❖ What is a data object and its basic functionalities
- ❖ Using Pandas library for data manipulation
- ❖ NumPy dependency of Pandas library, loading and handling data with Pandas
- ❖ How to merge data objects, concatenation and various types of joins on data objects
- ❖ Exploring and analyzing datasets..

Data Visualization with 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.

Supervised Learning

- ❖ What is supervised learning, classification
- ❖ Decision Tree, algorithm for Decision Tree induction
- ❖ Confusion Matrix
- ❖ Random Forest
- ❖ Naïve Bayes, working of Naïve Bayes, how to implement Naïve Bayes Classifier
- ❖ Support Vector Machine, working process of Support Vector Mechanism
- ❖ What is Hyperparameter Optimization
- ❖ Comparing Random Search with Grid Search
- ❖ How to implement Support Vector Machine for classification.

Unsupervised Learning

- ❖ Introduction to unsupervised learning, use cases of unsupervised learning
- ❖ What is K-means clustering, understanding the K-means clustering algorithm
- ❖ Optimal clustering
- ❖ Hierarchical clustering and K-means clustering and how does hierarchical clustering work
- ❖ What is natural language processing, working with NLP on text data
- ❖ Setting up the environment using Jupyter Notebook
- ❖ Analyzing sentence, the Scikit-Learn Machine Learning algorithms
- ❖ Bags of words model
- ❖ Extracting feature from text
- ❖ Searching a grid, model training, multiple parameters and building of a pipeline

Web Scraping with Python

- ❖ Introduction to web scraping in Python, various web scraping libraries
- ❖ BeautifulSoup, Scrapy Python packages
- ❖ Installing of BeautifulSoup
- ❖ Installing Python parser lxml
- ❖ Creating soup object with input HTML
- ❖ Searching of tree, full or partial parsing, output print and searching the tree

Python integration with Hadoop and Spark

- ❖ What is the need for integrating Python with Hadoop and Spark
- ❖ The basics of the Hadoop ecosystem, Hadoop Common
- ❖ The architecture of MapReduce and HDFS and deploying Python coding for MapReduce jobs on Hadoop framework
- ❖ Understanding Apache Spark
- ❖ Setting up Cloudera QuickStart VM
- ❖ Spark tools
- ❖ RDD in Spark
- ❖ PySpark, integrating PySpark with Jupyter Notebook
- ❖ Introduction to Artificial Intelligence and Deep Learning
- ❖ Deploying Spark code with Python
- ❖ The Machine Learning library of Spark Mllib
- ❖ Deploying Spark MLib for classification, clustering and regression parameters and building of a pipeline

Project Works

Project 1 : Analyzing the naming pattern using Python

Industry : General

Problem Statement : How to analyze the trends and most popular baby names

Topics : In this Python project you will work with the United States Social Security Administration (SSA) has made available data on the frequency of baby names from 1880 through 2016. The project requires analyzing the data considering different methods. You will visualize the most frequent names, determine the naming trends, and come up with the most popular names for a certain year.

Highlights :

- ✓ Analyzing data using Pandas Library
- ✓ Deploying Data Frame Manipulation
- ✓ Bar & box plots with Matplotlib.

Project 2 : – Python Web Scraping for Data Science

In this project you will be introduced to the process of web scraping using Python. It involves installation of BeautifulSoup, web scraping libraries, working on common data and page format on the web, learning the important kinds of objects, Navigable String, deploying the searching tree, navigation options, parser, search tree, searching by CSS class, list, function and keyword argument.

Project 3 : Predicting customer churn in Telecom company**Industry** - Telecommunications**Problem Statement** - How to increase the profitability of a telecom major by reducing the churn rate**Topics:** In this project you will work with the telecom company's customer dataset. This dataset includes subscribing telephone customer's details. Each of the column has data on phone number, call minutes during various times of the day, the charges incurred, lifetime account duration, whether or not the customer has churned some services by unsubscribing it. The goal is to predict whether a customer will eventually churn or not.**Requirements:-**

- ✓ Deploy Scikit-learn ML library
- ✓ Develop code with Jupyter Notebook
- ✓ Build a model using performance matrix

Project 4: Server logs/Firewall logs**Objective** – This includes the process of loading the server logs into the cluster using Flume. It can then be refined using Pig Script, Ambari and HCatlog. You can then visualize it using elastic search and excel.

This project task includes:

- ✓ Server logs
- ✓ Potential uses of server log data
- ✓ Pig script
- ✓ Firewall logs
- ✓ Work flow editor

Job Assistance Program

Intellipaat is offering job assistance to all the learners who have completed the training. You should get a minimum of 60% marks in the qualifying exam to avail job assistance. Intellipaat has exclusive tie-ups with over 80 MNCs for placements.



Successfully finish the training

Get your resume updated

Start receiving interview calls

Intellipaat Alumni Working in Top Companies



Payal Raheja 

Sr. Python Developer at Mindfire Solutions

I loved the way Intellipaat trainers taught the Python programming language as applicable to the data science domain. Great work!



Alexane Hofer 

Software Engineer at Accenture

I liked the dedication of the Intellipaat support team when it came to resolving my queries regardless of the time of the day. Hats off to team Intellipaat!



Swetha Pandit 

Big Data Developer at Accenture

Their Data Science courses are well structured and taught by recognized professionals which helps one to learn Data Science fast. I have found the videos to be of excellent quality. Thanks

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Our Clients



+80 Corporates

Frequently Asked Questions

Q 1. What is the criterion for availing the IntelliPaat job assistance program?

Ans. All IntelliPaat learners who have successfully completed the training post April 2017 are directly eligible for the IntelliPaat job assistance program.

Q 2. Which are the companies that I can get placed in?

Ans. We have exclusive tie-ups with MNCs like Ericsson, Cisco, Cognizant, Sony, Mu Sigma, Saint-Gobain, Standard Chartered, TCS, Genpact, Hexaware, and more. So you have the opportunity to get placed in these top global companies.

Q 3. Do I need to have prior industry experience for getting an interview call?

Ans. There is no need to have any prior industry experience for getting an interview call. In fact, the successful completion of the IntelliPaat certification training is equivalent to six months of industry experience. This is definitely an added advantage when you are attending an interview.

Q 4. If I don't get a job in the first attempt, can I get another chance?

Ans. Definitely, yes. Your resume will be in our database and we will circulate it to our MNC partners until you get a job. So there is no upper limit to the number of job interviews you can attend.

Q 5. Does IntelliPaat guarantee a job through its job assistance program?

Ans. IntelliPaat does not guarantee any job through the job assistance program. However, we will definitely offer you full assistance by circulating your resume among our affiliate partners.