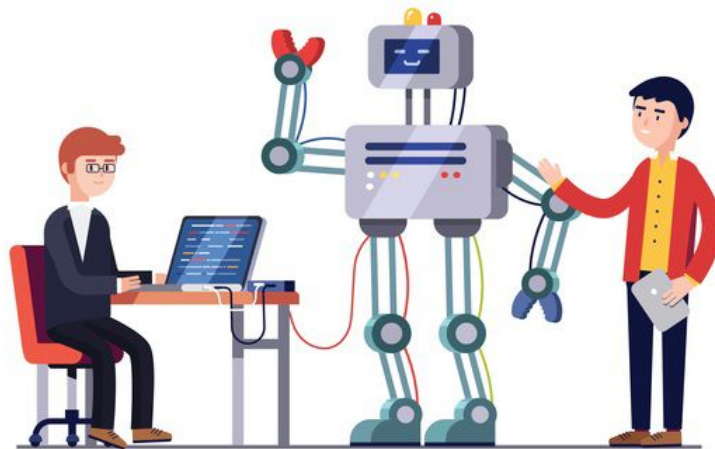


# 120 Hours Python Development and Machine Learning Training Program

## Python + Django + Machine Learning



### Introduction to 120 Hours Python Development with Machine Learning Training Program

Python is one of the most used programming language in the world. It is compatible with any of the high end Frameworks like Big Data, Analytics, Machine Learning. Fortune 500 companies like Google, Facebook, Amazon, YouTube, NASA, Reddit, Quora, Mozilla use Python.

We have compiled a 120 hours professional training program to master Python programming language, that too with practical exposure and project development. This training program encompass the basic concepts of Python like setting up the IDE, variables, operators, loops as well as Object Oriented concepts of classes, objects,

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inheritance, polymorphism. Other important techniques like Regular Expression, Multithreading too are covered. Our major attraction for this training program are in depth coverage of Django Web Framework Framework and Machine Learning.

## Course Details

- **Duration : 120 hours**
  - **Session : 2 per week**
  - **Projects : 1 Web Application & 1 Machine Learning Application**
  - **Case Studies : 3**
  - **Batch Size : 8-10 Students per batch**
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## Course Content

**The proposed 120 Days Machine Learning Training Program covers the following modules:**

1. Setting Up Python
2. Basics of Python
3. Object Orientation with Python

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4. Advanced Python
  5. Python with Database
  6. Introduction to OpenCV
  7. Django Web Frameworks
  8. Machine Learning Modules
  9. Case Studies.
  10. Project

## Detailed Syllabus

### Setting Up Python

- History of Python
- Downloading and setting IDE for Python
- Writing Hello World Program

### Basics of Python

- Identifiers
- Reserved Words
- Lines and Indentation
- Multi-line statements
- Single Line Comments
- Input
- Naming Conventions
- Variables

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- What are variables?
  - Assigning Values
  - Assigning Values to Multiple Variables.
  - Number
  - Strings
  - List
  - Tuples and Dictionary in Details
  - Basic Operators
  - Decision Making
  - Looping Structure
  - Functions and Lambda Functions

## Object Orientation with Python

- Classes
- Objects
- Inheritance
- Abstraction

## Advanced Python

- Modules and Packages
- Exception Handling
- Regex
- Multi-Threading

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## Introduction to OpenCV

**OpenCV** (Open Source Computer Vision) is a library of programming functions mainly aimed at real-time computer vision. Originally developed by Intel, it was later supported by Willow Garage and is now maintained by Itseez. We provide a small project based introduction for this module

## Django Web Framework

- Intro to Django
- MVC Framework
- Why Django?
- History of Django
- Getting Started, Installing necessary software, Hello World project
- Project Architecture. Folder Architecture for the Project
- Views
- Url Mapping
- Models and model migrations
- Admin Interface
- Templates –
  - ❑ Using External HTML Files with Django.
  - ❑ Sending Variables in HTML files
  - ❑ Using python code inside HTML files.
- Generic Views
- File uploading
- Form Processing

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- Page Redirection
  - [Creating an API using Django Rest Framework]

## Web Project

- E-commerce Web Application.

## Machine Learning

### 1. Introduction

- Why Machine Learning?
- Problems Machine Learning Can Solve
- Knowing Your Task and Knowing Your Data
- Essential Libraries and Tools
- Jupyter Notebook
- NumPy
- matplotlib
- pandas
- Sci-Kit.

### 2. Supervised Learning

- Classification and Regression
- Generalization, Overfitting, and Underfitting
- Supervised Machine Learning Algorithms
- k-Nearest Neighbors
- Linear Models

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- Naive Bayes Classifiers
  - Decision Trees
  - Ensembles of Decision Tree

### 3. Unsupervised Learning

- Principal Component Analysis (PCA)
- Clustering
  - k-Means Clustering
  - Agglomerative Clustering
  - DBSCAN

### 4. Representing Data and Engineering Features

- One-Hot-Encoding
- Automatic Feature Selection

### 5. Model Evaluation and Improvement

- Cross-Validation
  - Cross-Validation in scikit-learn
  - Benefits of Cross-Validation
  - Stratified k-Fold Cross-Validation and Other Strategies
- Grid Search
  - Simple Grid Search

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- Grid Search with Cross-Validation
  - Evaluation Metrics and Scoring
  - Algorithm Chains and Pipelines
    - Parameter Selection with Preprocessing
    - Building Pipelines

## 6. Natural Language Processing.

- Representing Text Data
  - Applying Bag-of-Words to a Toy Dataset
  - Bag-of-Words on Real Data.
- Stopwords
- Bag-of-Words with More Than One Word (n-Grams)
- Advanced Tokenization, Stemming, and Lemmatization
- Topic Modeling and Document Clustering



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## Live Case Studies.

### 1. Building Voice Assistant. (NLP ).

Building a neural network model from scratch to understand users intent.

*Problem statement:*

The model should be able to handle various accent of different people, extract important Keyword and perform App Classification.

### 2. Flowers Classifications (Classifications).

Building a multiclass classifier.

*Problem Statement:*

Given the features classify the flower into one of the various families.

### 3. Housing Price Predictions. (Regressions).

Performing exploratory data analysis(EDA) and building a regression model .

*Problem Statement :*

Ask a home buyer to describe their dream house, and they probably won't begin with the height of the basement ceiling but with the proximity to railroad, no of bedrooms, area of the house. Predict the price of the home buyer's dream house using regression techniques learnt during the course.

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# Placements

## How our Placement Process Work ?

- We have a dedicated team who looks after placing our students.
- Above 90% of our students trained right now are placed & hence any vacancy in their respective companies we get to know it first.
- Apart from that our company has tie-up with an array of job-portals & IT Job Consultants.
- To sum it up in a line, we have taken utmost care & in partnering with Job Portals for Java Related Jobs.

## Top Companies Where Our Students Are Placed

- **Accenture**
- **Wipro**
- **Planfirma Technologies Pvt Ltd**
- **Interact CRM**
- **Infosys**
- **Sudeshi Infotech**
- **HRDXangers Ltd**
- **AD Stringo**
- **Mastek Pvt Ltd**
- **Forbes Technosys Ltd**
- **Wind World**
- **SQWA India**
- **Parametrix Technologies**

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# Contact

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