Full Stack Data Science Masters

This program teaches students how to extract insights from data using statistical and machine learning techniques, as well as data visualization and data operational skills. Students learn to work with popular data analysis tools such as Python, SQL, and machine learning frameworks, and work on hands-on projects to apply their knowledge. Overall, the course provides students with the skills to make informed decisions based on data, relevant to a wide range of industries. You will learn all the stack required to work in data science, including machine learning operations and cloud infrastructure, as well as real-time industry projects.

Duration : 11 - 12 months Language : english Price : 20000

What you will learn?

- Python
- Flask
- Numpy
- Pandas
- Visualization
- Databases
- EDA
- Linear Algebra
- Statistics
- Machine Learning
- Deep learning
- Computer vision
- Natural language processing

Features

- Full Stack Data Science Masters Certification
- Job Guarantee Program
- Self-Paced Learning
- 150+ hours content recorded by Industry Veterans
- 20+ hands-on industry real-time projects
- 2 year Dashboard access
- Doubt clearing live classes
- Doubt clearing through mail and support team
- Assignment in all the modules
- Quiz in all modules

- End-to-End Projects
- Resume Building
- Career Guidance
- Interview Preparation
- Regular Assessment
- Job Fair & Internal Hiring
- Mock Interview Anytime
- Internship Portal Access
- NeuroLabs Access

Requirements

- System with minimum i3 processor or better
- At least 4 GB of RAM
- Working internet connection
- Dedication to learn

Course Curriculum

Week 0 Course Introduction

- Welcome to the Course
- Platform Overview

Week 1 Python Basic Building

- Python Keywords and identifiers
- Comments, indentation and statements
- Variables and data types in Python
- Standard Input and Output
- Operators
- Control flow: if else elif
- Control flow: while loop
- Control flow: for loop
- Control flow: break and continue

Week 2 Python Data Structures

- Strings
- Lists, Lists comprehension

- Tuples
- Sets
- Dictionary, Dictionary Comprehension

Week 3 Python Functions

- Python Built-in Functions.
- Python User-defined Functions.
- Python Recursion Functions.
- Python Lambda Functions.

Week 4 Python Exception Handling, Logging And Debugging

- Exception Handling Using Try Catch Block
- Custom Exception Handling
- Logging With Python
- Debugging With Python

Week 5 Python OOPS

- Python Objects And Classes
- Python Constructors
- Python Inheritance
- Abstraction In Python
- Polymorphism in Python
- Encapsulation in Python

Week 6 Flask

- Flask Fundamentals
- Building Rest API's

Week 7 Python Project With Deployment

- End To End Review Scraper Project With Deployment In Cloud
- Weather App- Build A Web app that displays current weather conditions for a specific location using OpenWeatherMap API
- Image web scraper- Build A Image Web Scraper which extracts images of Google

Milestone 1

- Milestone 1 Test

Week 8 Python For Data Science- Numpy

- Numpy Basics to Advance
- Key Operations using Numpy

Week 9 Python For Data Science- Pandas

- Pandas Basic To Advance- Dataframe And Series
- Key Operations on DataFrames

Week 10 Python For Visualization

- Getting Started with Matplotlib
- Getting Started with Seaborn

Milestone 2

- Milestone 2 Test

Week 11 SQL-Basic to Intermediate

- Working with MySQL Using NeuroLabs
- USE, DESCRIBE, SHOW TABLES
- SELECT
- INSERT
- UPDATE & DELETE
- CREATE TABLE
- ALTER: ADD, MODIFY, DROP
- DROP TABLE, TRUNCATE, DELETE
- LIMIT, OFFSET
- ORDER BY
- DISTINCT
- WHERE, Comparison operators, NULL
- Logical Operators
- Aggregate Functions: COUNT, MIN, MAX, AVG, SUM
- GROUP BY
- HAVING

Week 12 SQL- Intermediate To Advance

- Join and Natural Join
- Inner, Left, Right and Outer joins
- Sub Queries/Nested Queries/Inner Queries

- SQL Primary And Foreign Key
- SQL Function And Stored Procedures
- SQL Window Function
- CTE In SQL
- Normalization In SQL

Week 13 SQL Interview Questions

- Discussing FAANG SQL Interview Questions
- Discussing Other Top Product And Service Based Companies SQL Interview Questions

Week 14 Python With MongoDB

- MongoDB Tutorials With Various Operations- We will see how we can perform various database operations using MongoDB(No SQL)

Milestone 3

- Milestone 3 Test

Week 15 Exploratory Data Analysis - 1

- Analyzing Bike Sharing Trends.
- Analyzing Movie Reviews Sentiment.
- Customer Segmentation And Effective Cross Selling.

Week 16 Exploratory Data Analysis - 2

- Analyzing Wine Types And Quality.
- Analyzing Music Trends And Recommendations.
- Forecasting Stock And Commodity Prices

Milestone 4

- Milestone 4 Test

Week 17 Maths For Data Science(Linear Algebra 1)

- Linear Systems and Gaussian Elimination

In this module we will learn what a matrix is and what it represents. We will explore how a system of linear equations can be expressed via matrices.

- Matrix- In this module, we will learn how to solve a linear system of equations with matrix algebra.

Week 18 Maths For Data Science(Linear Algebra 2)

- Projection And Least Square-In this module we will discuss projections and how they work. We will build on a foundation using 1D 2D projections and explore the concept in higher dimensions over time.
- Determinant and Eigens-In this module we will learn how to compute the determinant of a matrix. Afterwards, Eigenvalues and Eigenvectors will be covered.

Week 19 Maths For Data Science(Probability)

- Important concepts in probability theory including random variables and independence

Week 20 Maths For Data Science(Calculus)

- Definition of a Derivative- What is a derivative? Calculate simple derivatives from the definition of a derivative.
- Product and Chain Rule-Use the product and chain rules to calculate the derivatives of more complicated functions.
- Using Derivatives to Graph Functions-Use where derivatives are positive and negative to help graph a function.
- Finding Maximums and Minimums-Use derivatives to find the maximum and minimum values of functions.

Week 21 Statistics 1

- Introduction & Descriptive Statistics- In this module, you will learn about the fundamentals of descriptive statistics, which include mean, median, mode, variance, and standard deviation. The module aims to demonstrate the importance of measures of central tendency and dispersion for various levels of measurement. You will gain an understanding of how these statistical tools are used to analyze and interpret data accurately. The module will cover the basics of mean, median, mode, variance, and standard deviation and provide examples of their practical applications. By the end of the module, you will be equipped with the knowledge to use these measures for data analysis effectively.

Week 22 Statistics 2

- Introduction to Probability Distributions- In this module, we will cover various distributions and understand pdf, pmf and cdf

Week 23 Statistics 3

- Hypothesis Testing-This module aims to equip you with the necessary knowledge to choose the appropriate test when analyzing data and determining their relationships. It will provide a detailed explanation of the assumptions underlying each test and teach you how to interpret the results of a

hypothesis test accurately.

Milestone 5

- Milestone 5 Test

Week 24 Feature Engineering

- Feature Selection
- Handling missing values
- Handling imbalanced data
- Handling outliers
- Encoding
- Feature Scaling

Week 25 Machine Learning (Supervised - 1)

- AI Vs ML Vs DL Vs DS
- Types Of ML Technqiues
- Supervised vs unsupervised and semi-supervised and reinforcement learning
- Linear Regression
- End To End Project With Deployment

Week 26 Machine Learning (Supervised - 2)

- Logistic Regression
- Task- End To End Project With Deployment
- Support Vector Machines
- Naive Bayes
- Task- End To End Project With Deployment

Week 27 Machine Learning (Supervised - 3)

- Decision Tree
- Gradient Boosting
- Xgboost
- Task- End To End Project With Deployment

Week 28 Machine Learning (Unsupervised)

- PCA
- Kmeans Clustering
- Hierarchical Clustering

- Dbscan Clustering
- Performance Metrics In Clustering

Week 29 Machine Learning (Time Series)

- Time Series Using fbprophet
- Time Series Using AutoTs
- Time Series Using Darts

Week 30 End To End ML Projects With Deployment

- Developing a Comprehensive Image Scraper with Python
- Machine Learning-Based Fault Prediction for Industrial Sensors End To End Project
- Developing an Advanced Review Scraper with Python and Data Visualization

Week 31 End To End ML Projects With Deployment

- ShipSage: Machine Learning for Smart Shipment Price Prediction
- GreenVision: AI-driven Forest Cover Type Classification System
- Customer Categorizer: Leveraging Machine Learning to Uncover Hidden Market Segments
- PhishFinder: Machine Learning-Based Phishing Detection and Classification With Bento ML and MLFOW

Milestone 6

- Milestone 6 Test

Week 32 Interview Preparation

- Resume Discussion And Resume Preparation
- Python Interview Questions Discussion
- Stats Interview Questions Discussion
- Machine Learning Interview Questions Discussion
- How To Explain End to Projects To Interviewer

Week 33 Deep Learning ANN

- Artificial Neural Network Working
- Back Propagation In ANN
- Chain Rule Of Derivatives
- Vanishing Gradient Problem
- Exploding Gradient Problem

Week 34 Deep Learning Fundamentals

- Different Activation functions
- Different types of Loss Function
- Different types Of Optimizers
- Weight Initialization Techniques
- Drop Out Layer
- Batch Normalization

Week 35 Deep Learning Frameworks

- Working With Tensorflow Keras
- Working With Pytorch

Week 36 Deep Learning (Computer Vision Fundamentals)

- CNN Fundamentals
- Lenet-5 Variants With Research Paper And Practical
- Alexnet Variants With Research Paper And Practical

Week 37 Deep Learning (Image Classification & Transfer Learning)

- Googlenet Variants With Research Paper And Practical
- Vggnet Variants With Research Paper And Practical
- Resnet Variants With Research Paper And Practical

Week 38 Deep Learning (Computer Vision - Object Detection)

- Object Detection(In this module we will discuss various advanced algorithms which will help us perform object detection)

Week 39 Deep Learning (Computer Vision - Segmentation Tracking)

- Image Segmentation(In this module we will discuss various advanced algorithms which will help us perform image segmentation)
- Object Tracking (In this module we will discuss various advanced algorithms which will help us perform object tracking)

Week 40 Deep Learning (NLP - 1)

- NLP With Machine Learning- In this module, we will discuss how we can apply different NLP techniques in text and work with ML algorithms
- NLP With Recurrent Neural Network and Its variants

Week 41 Deep Learning (NLP - 2)

- NLP with Sequence Models- In this module, we will discuss about various Sequence Models in Deep Learning
- NLP With Attention Models- In this module, we will discuss Transformers,BERT, and GPT models

Week 42 End To End Deep Learning Projects With Deployment

- Developing an Audio Classification System for Accurate Speech Recognition
- Developing a Robust Helmet Detection System using Computer Vision

Week 43 End To End Deep Learning Projects With Deployment

- Developing an AI-Driven Text Summarization System with Deep Learning Techniques
- Developing an AI Model for Automated Lungs Disease Diagnosis Using Bento ML and MLFLOW

Week 44 End To End Deep Learning Projects With Deployment

- Developing a High-Quality Text-to-Speech System with Advanced NLP Techniques
- AI-Enabled Object Detection for Improved Industrial Safety

Milestone 7

- Milestone 7 Test

Week 45 Big Data - Hadoop

- Hadoop

Week 46 Big Data - Spark

- Spark

Milestone 8

- Milestone 8 Test

Week 47 Data Analytics - PowerBi

- PowerBI

Week 48 Data Analytics - Tableau

- Tableau

Milestone 9

- Milestone 9 Test

Week 49 - 52 Interview Preparation

- Resume Discussion And Resume Preparation
- Computer Vision Interview Preparation
- NLP Interview Preparation
- Internship Tasks For Deep Learning
- Mock Interview Sessions
- Industry Expert Talks
- How To Build Analytical Thinking
- Discussing Different Project Architectures
- Project Building End to END