

Data Science & Machine Learning Using Python

Introduction

This course designed to teach Data Science in a hands-on manner and prepare the participants for a career in this field. The course will provide you with the complete toolbox to become a Data Scientist. Students will acquire the precise technical skills recruiters are looking for when hiring Data Scientists.

At completion, students will have gained the analytical skills required to open the doors to a lucrative career as a Data Scientist.

Data is extremely important to all organizations, and at all levels. It's not just big IT and software companies: Data experts are needed in banking and finance, automotive, energy, healthcare, transport, retail, and virtually every domain you can think of. And because data drives decisions - from small regional offices to the boardroom - graduates from bootcamps in Data Science will be directly involved in important strategic decision-making processes.

The role of data scientist is now a buzz worthy career. It has staying power in the marketplace and provides opportunities for people who study data science to make valuable contributions to their companies and societies at large. LinkedIn recently picked data scientist as its most promising career of 2019. One of the reasons it got the top spot was that the average salary for people in the role is \$130,000.

Data science is one of the fastest-growing sectors of the tech industry. In simple words, there is soaring demand for Data professionals yet a huge deficit on the supply side. The course will qualify you for a position as a data scientist or a data analyst. This program will ensure you have the knowledge to kick-start your career in Data Science.

Learning Outcomes

The program will provide instruction and hands-on training for the participants to feel confident to start working in the industry. At the end of this program participants will learn to understand the how to manage Data Science projects throughout the life cycle. The following sections will be covered in the course

Schedule (Winter Session 2021)

Tuesdays: 6:30 PM to 8:30 PM

Saturdays: 11:30 PM to 4:30 PM (Break: 1:30 PM to 2:30 PM)

a) Python for Data Science

Python is a general-purpose programming language that is becoming ever more popular for data science. Companies worldwide are using Python to harvest insights from their data and gain a competitive edge. In this section students will learn how to manage and analyze data in Python. Students will learn about functions and loops in Python. Moreover, they will get hands-on experience with Jupyter Hub and Python libraries such as Pandas, NumPy, Scipy etc. They will also learn how create amazing visuals in Python Using Matplotlib, Bokeh and Seaborn. Below is the breakdown of the topics

- a) Intro to Python
- b) Variables, Data Types & Type Conversion in Python
- c) Numbers & Strings in Python
- d) Working with Lists in Python
- e) NumPy in Python
- f) Data Visualization in Python (Matplotlib & Seaborn)
- g) Dictionaries in Python
- h) Pandas Library in Python
- i) Manipulating Data Frames
- j) Conditionals & Loops in Python
- k) Functions & Built in Functions in Python
- l) Descriptive Statistics in Python

b) Exploratory Data Analysis and Model Preparation

How do we get from data to answers? Exploratory data analysis is a process for exploring datasets, answering questions, and visualizing results. This course presents the tools you need to clean and validate data, to visualize distributions and relationships between variables. The course will cover essential exploratory techniques for summarizing data. Students will learn how to prep their data for training their machine learning models. With the tools and skills taught in this section of the course, students will be prepared to work with real data, make discoveries, and present compelling results using Python.

c) Machine Learning and Model Deployment

Some of the most important tasks performed by data professionals are prediction and machine learning. This course will cover basic components of building and applying prediction functions with an emphasis on practical applications. Students will learn all state of the art AI & Machine learning models including how to create, test, train and deploy these models. Students will learn several techniques, including supervised learning and theoretical aspects of machine learning. The course will teach Classification, Regression, KNN, Decision Tree, Random Forest and other data science models. Finally, students will learn how to deploy machine-learning algorithms on Microsoft Azure Cloud Services.

(Note: This course is designed for beginners to learn data science machine learning technique, However, Basic IT Knowledge is required for this course. We would recommend students without any prior programming or it knowledge to take Fundamentals of Data Analytics prior to this course)