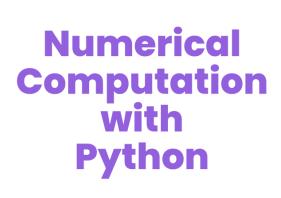Numerical Computation with Python

Description:

In this course, students will learn the principles of numerical analysis and computation in Python and use the power of a powerful Python library called Numpy. In the world of Artificial Intelligence and Data Science, NumPy is one of the most extensively used Python packages. NumPy provides high-performance functions and data analysis tools that are very efficient and simple to use.

Start Date:

Doubt Clear Time:

Course Time:

Features:

Online Instructor-led learning

Practical Implementation

Integrate academic knowledge with the tech

Real-time Project

Live Class Recording

Doubt Clearing

Assignment in all the Module

Quiz in every Module

Career Counselling

Completion Certificate

What we learn:

Introduction to NumPy

Applications of NumPy

NumPy fundamentals

Linear algebra using NumPy

Generating random number using NumPy

Requirements:

System with Internet Connection

Interest to learn

Dedication

Instructor:

Name:

Shivan Kumar

Description:

Associate Data Scientist, Mentor, and Kaggle Master with 2 Years of Experience. Experience in building models that translate data points into business insights. Highly accurate at

collecting, analyzing, and interpreting large datasets, developing machine learning, deep learning, Chatbots models, and deploying the solutions on the cloud. I also love to participate in Hackathons. In my free time, I like to mentor students to learn Data Science and achieve their goals.

>Course Introduction:

>>Dashboard Overview

>>Course Overview

>>Who is this course for?

>>What is Data Science?

>>Why should you learn Data Science?

>>History of Data Science

>>What is NumPy?

>>Why should you learn NumPy?

>>Applications of NumPy

>Introduction to Colab and Python programming:

>>Getting started with Google Colab

>>Saving and loading Jupyter Notebooks

>Introduction to Numpy:

>>What is an array?

>>Understanding array data structure

>>Creating a 1-Dimensional array using NumPy

>>1-Dimensional array operations

>>Searching an element in 1-Dimensional array

>Assignment 1:

>>Write a Program to find first occurance of an element in a 1-Dimensional array

>NumPy fundamentals:

>>What are multi-dimensional arrays?

>>Why should we learn multi-dimensional arrays?

>>Creating a 2-Dimensional array

>>Creating a 3-Dimensional array

>>Data Types for ndarray

>>Arithmetic operations with NumPy arrays

>>Basic indexing and slicing

>>How to do array indexing with slices?

>>Boolean Indexing in NumPy arrays

>>Transposing arrays in NumPy

>>Swapping axes in Numpy

>Assignment 2:

>>Building a calculator to perform arithmetic operations on two 1-Dimensional arrays

>Linear Algebra in NumPy:

>>Return the diagonal elements of a square matrix

>>Matrix multiplication

>>Compute the sum of the diagonal elements

>>Compute the matrix determinant

>>Eigenvalues and eigenvectors

>>Inverse of a square matrix

>**Assignment 3:**

>>Program to compare elements of two NumPy arrays

>**Assignment 4:**

>>Program to calculate the sum of the diagonal elements of a NumPy array

>**Random Number Generation in Numpy:**

>>Random number generator

>>Generating uniform distribution

>>Generating random integers

>>Normal distribution

>>Standard normal distribution

>>Binomial distribution

>**Assignment 5:**

>>Program to generate random numbers from the uniform distribution using NumPy

>Assignment 6:

>>Program to return a Matrix of random values from a standard normal distribution

>Course Summary:

>>Course Outro

>>Future Scope and References