AI & ML Training Program

Duration: 5 Days

Content Outline

Day 1

Introduction to Python Programming Language

- Basics of Python
- Python-1 (defining variables, if else loop, for loop, while loop)
- Python-2 (functions, functions with parameter, predefined functions)
- Python-3 (Classes, inheritance)
- Python-4 (OOPS concepts)
- Python-5 (Exception Handling)
- Python-6 (I/O Operations)

Day 2

Feature Engineering

- What is Machine Learning?
- Differences between AI,ML and Deep Learning
- What is Data Science
- Numpy -1(Array creation, manipulation of arrays)
- Numpy -2 (Creating Multidimensional array)
- Numpy -3 (Indexing and slicing operation)
- Numpy-4 (inbuilt functions in numpy)
- Pandas- 1(Introduction to Pandas and uses of pandas library)

- Pandas-2(Discussion on Series, creating Series and its inbuilt functions)
- Pandas-3(Creating Dataframes, Dataframes inbuilt function)
- Pandas-4(Reading different types of files such as csv,excel,html and json using Pandas)
- Matplotlib (Visualizing data in various forms)
- Data Cleaning-1(Data preprocessing techniques)
- Data Cleaning-2(Data preprocessing techniques)
- Feature Enginering and Data preprocessing use cases for large dataset

Day 3

Supervised Machine Learning Techniques

Regression Techniques

- Simple Linear Regression Algorithm
- Multiple Regression Algorithm
- Polynomial Regression
- Evaluating Regression Model Performance

Classification Techniques

- Logistic Regression
- K- Nearest Neighbor
- Decision Tree Classification
- Random Forest Classification

Day 4

- XGboost
- Dimensionality Reduction
- Principal Component Analysis
- Evaluating Classification Model Performance

Unsupervised Machine Learning technique

Clustering Techniques

- K-Means Clustering
- Hierarchical Clustering

Model Selection

- K Fold Cross Validation
- Grid Search

USE CASES- Included in all the above topic

Day-5

- Natural Language Processing
- Text Analysis, Text Pre-processing
- Bag of Words,TF-IDF model
- Naïve Baye's Theorem
- Time Series Data
- Arima Model