

INTRODUCTION TO DATA SCEINCE

* Need of Data Science
* History of Data Science
* What is Data Science?
* Data Mining

INTRODUCTION TO MACHINE LEARINING

* What is machine learning?
* Types of learning
* Supervised Machine Learning
* Unsupervised Machine Learning
* Machine learning algorithms

Core statistics concepts

* Descriptive statistics
* Inferential statistics
* Predictive modeling
* Probability distributions
* Hypothesis testing
* Regression
* Conditional probability
* Prios, posteriors
* Maximum likelihood
* Mean, mode
* Dimensionality reduction
* Over and under sampling
* Bayesian statistics
* Range
* Interquartile range (IQR)
* Variance
* Deviation
* Population variance
* Sample variance
* ANOVA
* Standard deviation
* Null hypothesis
* Alternate hypothesis
* Data conversion

Data Visualization with SEABORN/MatplotLib

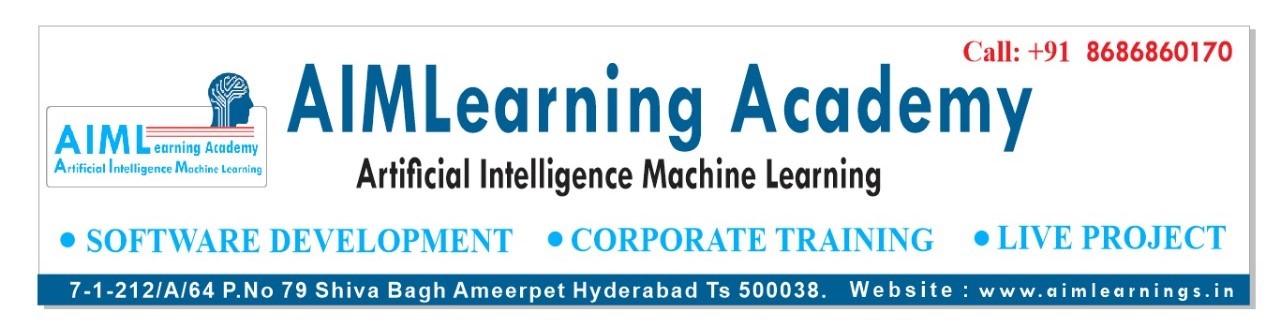
* MatPlotlib
* Bar Graph
* Histogram
* Scatter Plot
* Pie Chart

DATA SCIENCE ESSENTIALS – Numpy, Scipy

* Numpy
* Introduction
* Numpy Package
* Ndarray Object
* Data Types
* Array Attributes
* Array from Numerical Ranges
* Indexing & Slicing
* Advanced Indexing
* Iterating over array
* Array manipulation
* String Functions
* Arithmetic Operations
* Statistical Functions

NLP / NLTK

* Introduction to Text Mining and NLP
* Extracting, Cleaning and Pre-processing Text
* Preprocessing data using tokenization
* Stemming text data/
* Converting text to its base form using lemmatization
* Analyzing Sentence Structure
* Building a text classifier
* Text to Features

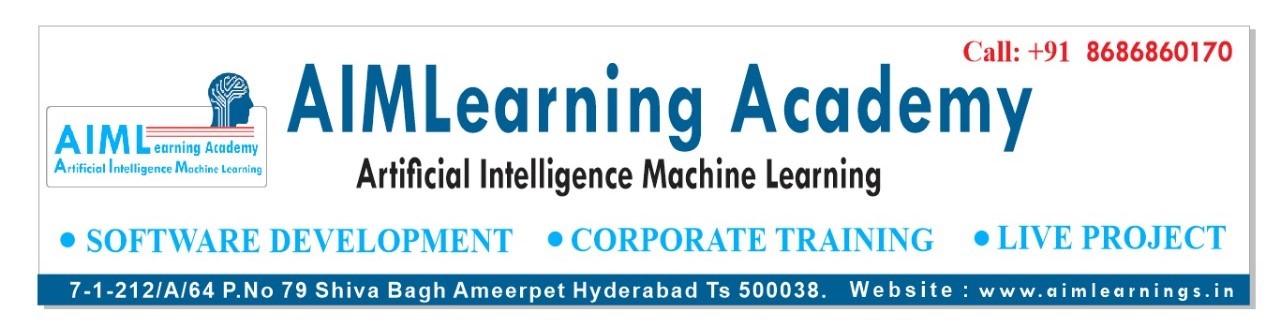


Pandas

* Introduction
* Reading files
* Series operations
* lookup
* selection
* Indexing
* Re indexing
* Handling NAN
* Feeling methods
* Data frame joins
* Data frame basic operation used for EDA like info (), head () etc...
* Data frame joins
* Data frame add/delete columns ,rows
* Data and time handling
* Grouping and aggregate functions
* Basic plotting
* Pandas Package
* Data Frame,Panel
* Indexing and Selecting Data
* Iteration
* Sorting
* Aggregations
* Missing Data
* Group By
* Merging/Joining
* Concatenation
* Date Functionality
* Pandas—Visualization
* Pandas -IO Tools
* CSV to Data Frame
* Loc and iloc
* Data Frame Filtering

Machine Learning Algorithms using Python

* Regression
* K-Nearest Neighbor
* Support Vector Machine (SVM)
* Decision Tree and Random Forest
* NAIVE BAYES
* K-MEANS
* Neural Networks – CNN
* Neural Networks – RNN
* Neural Networks – LSTM



**Core Python**

Introduction

* Basic Syntax
* Variable and Data Types
* Operator

Conditional Statements

* If
* If- else
* Nested if-else

Looping

* For
* While
* Nested loops

Control Statements

* Break
* Continue
* Pass

Modules

* Importing module
* Packages
* Composition

String Manipulation

* Accessing Strings
* Basic Operations
* String slices
* Function and Methods

Lists

* Accessing list
* Operations
* Working with lists
* Function and Methods

Tuple

* Accessing tuples
* Operations
* Working
* Functions and Methods

Dictionaries

* Accessing values in dictionaries
* Working with dictionaries
* Properties
* Functions

Functions

* Defining a function
* Calling a function
* Types of functions
* Function Arguments
* Anonymous functions
* Global and local variables

Input-Output

* Printing on screen
* Reading data from keyboard
* Opening and closing file
* Reading and writing files
* Functions

Exception Handling

* Exception
* Exception Handling
* Except clause
* try? finally clause
* User Defined Exceptions

OOPs concept

* Class and object
* Attributes
* Inheritance
* Overloading
* Overriding
* Data hiding