Machine Learning

Duration : 5 Days

Prerequisites : Working knowledge of Python

Lab : Latest Anaconda, Pytorch, TensorFlow

Introduction – Different stages of CRISP DM framework and how it’s used in Data Science Industry

Data Exploration and Feature Engineering

Different data exploration techniques

Univariate and multivariate techniques

Identifying different issues with data

How to deal with skewed data

How to deal with missing data

How to handle rare categories in categorical variables

Identifying linear and non-linear relationship in data

Different types of data distributions

Different techniques to identify Outliers and when to apply which technique

Compare feature magnitude

Imputing missing data – different techniques

Different ways of encoding of categorical variables

Feature hashing

Different ways of transforming numerical variables

Variable discretization

How to work with dates and time variables

Different feature scaling techniques and when to apply them

Different feature selection and reduction techniques – when to apply them

Extracting features from text

When to apply which technique ?

How to use pretrained models ?

How to build pipelines ?

Machine learning

Linear Regression (working Examples with different feature engineering techniques applied)

Metrics for Linear Regression

Classification (working Examples with different feature engineering techniques applied)

Metrics for Classification

Confusion Matrix

Non-Linear Regression (working Examples with different feature engineering techniques applied)

Unsupervised learning - clustering

Decision Trees

Ensemble techniques

Advantages over standalone models

Bias Variance tradeoff

How to interpret results ?

How to fine-tune models ?

Natural language processing

Tokenization

Lemmatization

Stemming

Stopwords

Text Representation

Spam filtering

Sentiment Analysis

What techniques to apply when the prediction/classification accuracy is bad

How to use pretrained models ?

How to use chatbot frameworks ?

Deep Learning

Introduction to Neural Networks

Different architectures

DL Platforms (Tensorflow, Pytorch)

When to apply which technique

Introduction to reinforcement learning .

Deployment of Models in production .