

# An Overview

Machine learning courses focus on teaching individuals the principles, techniques, and applications of machine learning, which is a subset of artificial intelligence (AI). These courses typically cover topics such as data preprocessing, feature selection, model training and evaluation, and various machine learning algorithms and Machine Learning Projects etc.

### Introduction

- Introduction to Machine Learning
- Introduction to Data in Machine Learning
- Applications of Machine Learning
- Best Python libraries for Machine Learning
- Difference Between ML & Al
- Difference Between ML & DL

# **Data Processing**

- Understanding Data Processing
- Generate Test Datasets for Machine learning
- Overview of Data Cleaning
- Feature Scaling Part 1
- Feature Engineering- Scaling, Normalization, and Standardization
- Label Encoding in Python
- One Hot Encoding in Machine Learning

# **Machine Learning Math**

- Linear Algebra Operations
- Linear Regression in Machine learning
- Mathematics Mean, Variance and Standard Deviation
- Understanding Hypothesis Testing
- Find a matrix or vector norm using NumPy
- Separating Hyperplanes in SVM



# **Supervised Learning**

- Types of Supervised learning
- Classification vs Regression in Machine Learning
- Getting started with Classification
- Basic Concept of Classification (Data Mining)
- Types of Regression Techniques in ML
- Gradient Descent algorithm and its variants
- Getting started with Classification
- Logistic Regression using Python
- Why Logistic Regression in Classification
- Introduction to Support Vector Machines (SVM)
- Decision Tree

# **Unsupervised Learning**

- Supervised and Unsupervised learning
- Clustering in Machine Learning
- Different Types of Clustering Algorithm
- K means Clustering Introduction
- Fuzzy Clustering

# **Dimensionality Reduction**

- Introduction of Dimensionality Reduction
- Approaches of Dimension Reduction
- Under fitting and Over fitting
- Common techniques of Dimensionality Reduction

# **Natural Language Processing**

- Introduction to Natural Language Processing
- ▼ Text Preprocessing in Python Set 1
- Text Preprocessing in Python Set 2
- Removing stop words with NLTK in Python
- Stemming words with NLTK
- Lemmatization with NLTK
- Lemmatization with TextBlob

#### **Neural Networks**

- Introduction to Artificial Neutral Networks
- Artificial Neutral Networks (Network Architectures)
- Activation functions in Neural Networks

# Numpy

- Introduction
- Creating numpy array
- Numpy array manipulation
- Matrix in numpy
- Operations on numpy
- Reshaping numpy array
- Arithmetic Operation on numpy
- Sorting and searching in numpy



#### **Pandas**

- Introduction
- Creating objects
- Viewing data
- Manipulating data
- Selection
- Working with text data
- Working with csv & Excel files
- Data analysis using pandas

# **Python GUI**

- Importing the module
- Python simple calculator using tkinter
- Simple Registration form using tkinter
- Simple Login form using tkinter
- Python GUI tkinter

# **Working with Database**

- Inserting Variables
- Mysql connection
- Python database management
- SQL using python SQlite

# Django Framework

- Django basic
- Views in django
- Django URLs
- Django Template
- Django Forms
- Django models
- Django projects

### **Deployment**

- Deploy a Machine Learning Model using Streamlit Library
- Deploy Machine Learning Model using Flask

# **Machine Learning Projects**

- Disease Prediction Using Machine Learning
- Predicting Stock Price Direction using Support Vector Machines
- Face and Hand Landmarks Detection using Python – Mediapipe, OpenCV
- Wine Quality Prediction Machine Learning
- Human Activity Recognition
- Twitter Sentiment Analysis



# Vinod Sir, CEO







