**Introduction to AI  2hr**

AI vs ML vs DL

Applications of AI

Conventional AI vs GenAI

Future of AI

Assignment

**Introduction to DL  4hr**

Introduction to Deep Learning

Perceptron Model

Introduction to Tensorflow and Keras

Introduction to Types of Neural Networks

Assignment

**Artificial Neural Network Deep Dive  2hr**

Activation Functions in NN

Loss Functions

Optimization Technique

Regularization Techniques

CallBacks

Assignment

**Computer Vision  12hr**

Object Detection

Region Proposal Techniques

Semantic Segmentation

Assignment

**Computer Vision with OpenCV  12hr**

Working with images

Working with Videos

OCR

Media Pipe - FaceMesh, Pose Detection

Assignment

**Convolution Neural Network  6hr**

Introduction to CNN

Architecture of CNN - Kernel / Filter, Stride, Padding, Activation Function Max Pooling and Avg Pooling

Assignment

**Natural Language Processing  12hr**

Introduction to NLP

Text Preprocessing

Text Vecorization and Classification

Embedding Layer in Natural Language Processing

Sentiment Analysis

Sequence Model

Machine Translation

Introduction to LLM

Assignment

**Recurrent Neural Network  10hr**

Introduction to RNN

LSTM

GRU

Assignment

**RASA Chatbot  10hr**

What is RASA

RASA Installation

RASA Initialization

RASA Configuration and File System

Intents, Entity,Response and Story

Actions

Assignment

**Introduction to Time Series Analysis  4hr**

What is Sequential Data & Time Series

Functional Relationship

Components of Time Series

Mathemetical Representation of Time Series

ETS Decompositon

Classification of Time Series

Defference between ACF & PACF

Assignment

**Weather Forecasting using ARIMA Model  4hr**

Introduction to AR and MA model

Stationarity & Differencing

SariMax of Seasonal Data

Identifying order AR(p), I(d), MA(q)

Implementation of ARIMA

Assignment

**Stock Price Prediction using Sequence Model 4hr**

Introduction to Sequence Models RNN, LSTM

Preparing Time Series Data for LSTM

Forecasting using LSTM

Future Forecast

Assignment