Machine Learning Internship

Module 1: Python Libraries for Machine Learning

- NumPy
- Pandas
- Matplotlib & Seaborn
- Assignment

Module 2: Data Preprocessing

- Handling Missing Data
- Encoding Categorical Variables
- Feature Scaling (Normalization & Standardization)
- Project

Module 3: Supervised Machine Learning

A. Regression Algorithms

1. Linear Regression
2. Multiple Linear Regression
3. Polynomial Regression
4. Decision Tree Regression
5. Random Forest Regression
6. Real-Time Project
7. Project

B. Classification Algorithms

1. Logistic Regression
2. Support Vector Machine (SVM)
3. K-Nearest Neighbors (KNN)
4. Naive Bayes
5. Decision Tree Classifier
6. Random Forest Classifier
7. Real-Time Project

Module 4: Unsupervised Machine Learning

1. K-Means Clustering
2. Hierarchical Clustering
3. Project

Module 5: Deep Learning Fundamentals

- Neural Networks
- Activation Functions
- Optimizers
- Loss Functions & Backpropagation
- Project

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Module 6: Convolutional Neural Networks (CNN)

- Convolution, Pooling, Flattening
- CNN Architecture in TensorFlow/Keras
- Data Augmentation
- Transfer Learning (VGG, ResNet overview)
- Project

Module 7: Recurrent Neural Networks (RNN)

- Sequential Data and Time Series
- RNN, LSTM, GRU Architectures
- Text and Sentiment Analysis
- Project

Module 8: Large Language Models (LLMs)

- Transformers Overview (Encoder-Decoder Architecture)
- BERT, GPT, LLaMA, Gemini Overview
- Prompt Engineering Basics
- RAG (Retrieval-Augmented Generation)
- Project

Module 9: Model Deployment (Intro)

- Introduction to Model Deployment
- Streamlit Overview
- AWS Overview