DeepVisionAI Interns Roadmap

Overview

This roadmap outlines the structured training journey for interns at **DeepVisionAI**, designed to help them build strong foundations in data science, machine learning, and deep learning. The roadmap is divided into weekly chunks, ensuring gradual progression from core programming and data understanding to applied AI model development.

Week 1 – Grass Root & Foundations

- **Day 1:** Data Science Flow + Python Setup
- **Day 2:** Python Objects & Data Structures
- **Day 3:** Functions and Statements
- **Day 4:** Data Handling with NumPy & Pandas
- **Day 5:** Data Aggregation & Hands-on Assignment

Week 2 – Data Understanding & Visualization

- **Day 1:** Assignment Review + Variable Types
- **Day 2:** Visualizations with Matplotlib & Seaborn
- **Day 3:** Data Transformation & Cleaning
- **Day 4:** Exploratory Data Analysis (Titanic Dataset)
- **Day 5:** Feature Engineering Basics

Week 3 – Probability & Machine Learning Basics

- **Day 1:** Probability & Conditional Probability
- **Day 2:** Bayesian Inference & ML Introduction
- **Day 3:** Supervised Learning and Data Splitting
- **Day 4:** Linear Regression & Cross-Validation

- **Day 5:** Gradient Descent & Project 1 Kickoff

Week 4 – Regression & Classification

- **Day 1:** Multivariate Regression Analysis
- **Day 2:** Polynomial Regression & Regularization
- **Day 3:** Classification with Logistic Regression
- **Day 4:** Confusion Matrix & Performance Metrics
- **Day 5:** ROC Curve & Project 2 Assignment

Week 5 – Decision Trees & Unsupervised Learning

- **Day 1:** Decision Trees & Information Gain
- **Day 2:** Random Forest & Boosting Concepts
- **Day 3:** Bagging & Multi-Classification
- **Day 4:** Clustering Introduction
- **Day 5:** K-Means & Project 3 Assignment

Week 6 – Advanced Clustering & Association Rules

- **Day 1:** Cluster Evaluation & Profiling
- **Day 2:** DBSCAN Algorithm & Validation
- **Day 3:** Hierarchical Clustering & Dendrograms
- **Day 4:** Association Rules Concepts
- **Day 5:** Apriori Algorithm and Metrics

Week 7 – Dimensionality Reduction & Deployment

- **Day 1:** Visualizing Association Rules
- **Day 2:** Network Graph Theory & SNA
- **Day 3:** Principal Component Analysis (PCA)
- **Day 4:** Image Classification with PCA
- **Day 5:** Flask App Deployment Basics

Week 8 – Deep Learning & Applied Projects

- **Day 1:** Introduction to Deep Learning & NLP
- **Day 2:** Computer Vision & Evolutionary Algorithms
- **Day 3:** Data Science Test
- **Day 4:** Final Project & Presentation
- **Day 5:** Self-Learning Path Guidance

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