Chapter 1 : INTRODUCTION TO AI 1-1 to 1-33

Syllabus : Introduction : Introduction to AI, AI techniques, Problem Formulation. Intelligent Agents : Structure of Intelligent agents, Types of Agents, Agent Environments PEAS representation for an Agent.

Self-Learning Topics : Identify application areas of AI.

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Syllabus : Uninformed Search Techniques : Uniform cost search, Depth Limited Search, Iterative Deepening, Bidirectional search. Informed Search Methods : Heuristic functions, Best First Search, A*, Hill Climbing, Simulated Annealing. Constraint Satisfaction Problem Solving : Crypto-Arithmetic Problem, Water Jug, Graph Coloring. Adversarial Search : Game Playing, Min-Max Search, Alpha Beta Pruning. Comparing Different Techniques.
Self-Learning Topics : IDA*, SMA*.

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Syllabus : Knowledge and Reasoning : A Knowledge Based Agent, WUMPUS WORLD Environment, Propositional Logic, First Order Predicate Logic, Forward and Backward Chaining, Resolution. Planning as an application of knowledge based agent. Concepts of Partial Order planning, Hierarchical Planning and Conditional Planning. Self-Learning Topics: Representing real world problems as planning problems.

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Chapter 4 : INTRODUCTION TO DS 4-1 to 4-10

Syllabus : Introduction and Evolution of Data Science, Data Science Vs. Business Analytics Vs. Big Data, Data Analytics, Lifecycle, Roles in Data Science Projects. Self-Learning Topics : Applications and Case Studies of Data Science in various Industries.

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Chapter 5 : EXPLORATORY DATA ANALYSIS 5-1 to 5-26

Syllabus : Introduction to exploratory data analysis, Typical data formats. Types of EDA, Graphical/Non graphical Methods, Univariate/multivariate methods Correlation and covariance, Degree of freedom, Statistical Methods for Evaluation including ANOVA.

Self-Learning Topics: Implementation of graphical EDA methods.

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Chapter 6 : INTRODUCTION TO MACHINE LEARNING 6-1 to 6-17

Syllabus : Introduction to Machine Learning, Types of Machine Learning: Supervised (Logistic Regression, Decision Tree, Support Vector Machine) and Unsupervised (K Means Clustering, Hierarchical Clustering, Association Rules) Issues in Machine learning, Application of Machine Learning Steps in developing a Machine Learning Application.
Self-Learning Topics : Real world case studies on machine learning

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