ARTIFICIAL INTELLIGENCE

Syllabus

UNIT-I

Introduction - AI problems, foundation of AI and history of AI intelligent agents: Agents and Environments, the concept of rationality, the nature of environments, structure of agents, problem solving agents, problem formulation.

UNIT – II

Searching - Searching for solutions, uniformed search strategies – Breadth first search, depth first Search. Search with partial information (Heuristic search) Greedy best first search, A* search Game Playing: Adversial search, Games, minmax, algorithm, optimal decisions in multiplayer games, Alpha-Beta pruning, Evaluation functions, cutting of search.

UNIT – III

Knowledge Representation & Reasons logical Agents, Knowledge – Based Agents, the Wumpus world, logic, propositional logic, Resolution patterns in proposional logic, Resolution, Forward & Backward. Chaining, First order logic, Resolution

UNIT – IV

Characteristics of Neural Networks, Historical Development of Neural Networks Principles, Artificial Neural Networks: Terminology, Models of Neuron, Topology, Basic Learning Laws, Pattern Recognition Problem, Basic Functional Units, Pattern Recognition Tasks by the Functional Units.

UNIT – V

Convolutional Neural Networks: Architectures of Convolutional Neural Networks, convolution/pooling layers, CNN Example

Recurrent Neural Networks: Why sequence models, Recurrent Neural Networks, different types Of RNN,Long Short Term Memory(LSTM), Gated Recurrent Unit(GRU), Encoder Decoder architectures

TextBooks

1. Artificial Intelligence – A Modern Approach. Second Edition, Stuart Russel, Peter Norvig, PHI/ Pearson Education.
2. Artificial Neural Networks B. YagnaNarayana,
3. Neural Networks Simon Haykin