



CS402

ARTIFICIAL INTELLIGENCE

UNIT-I

Introduction: Definition, history and applications of AI. Search in State Spaces: Agents that plan, Uninformed search, Algorithm A*, Heuristic Functions and Search Efficiency, Alternative Search Formulations and Applications, Adversarial Search.

UNIT – II

Knowledge Representation and Reasoning: The Propositional Calculus, Resolution in Propositional Calculus, The Predicate Calculus, Resolution in Predicate Calculus, Rule-Based Expert Systems, Representing Common Sense Knowledge.

UNIT-III

Reasoning with Uncertain Information: Review of probability theory, Probabilistic Inference, Bayes Networks.

Planning Methods Based on Logic: The Situation Calculus, Planning.

UNIT-IV

Learning from Observations: Learning decision-trees using Information theory, Learning General Logical Descriptions, Neural Networks: Perceptron, Multilayer feed-forward neural network. Rule Learning.

UNIT-V

Natural Language Processing: Communication among agents

Fuzzy Logic Systems: Crisp Sets, Fuzzy Sets, Some fuzzy terminology, Fuzzy Logic Control, Sugeno Style of Fuzzy inference processing, Fuzzy hedges, Cut Threshold, Neuro Fuzzy systems.

Suggested Reading:

1. Nils J. Nilsson (1998) Artificial Intelligence: A New Synthesis, Elsevier
2. Stuart Russell, Peter Norvig (1995), Artificial Intelligence – A Modern Approach, Pearson Edition/PHI.
3. Elaine Rich, Kevin Knight, Shivashankar B Nair (2009), Artificial Intelligence, Third edition, Tata McGraw Hill.

References :

1. George F Luger (2009), Artificial Intelligence, Structures and strategies for Complex Problem solving, Pearson Edition.