

Artificial Intelligence : Course Content , Lecture hours – 42 , notes , slides : 565
www.myreaders.info/ , RC Chakraborty, e-mail rcchak@gmail.com , June 01, 2010
www.myreaders.info/html/artificial_intelligence.html



Course Content

Artificial Intelligence

Artificial Intelligence topics : Introduction, Problem solving, Search and control strategies, Knowledge representations issues, predicate logic, rules, Reasoning system - symbolic, statistical, Game playing, Learning systems, Expert systems, Fundamentals of neural networks, Fundamentals of genetic algorithms, Natural language processing, Common sense.

Course Content

Artificial Intelligence

	Content	Hrs
01	Introduction to AI Definitions, Goals of AI, AI Approaches, AI Techniques, Branches of AI, Applications of AI.	1-6
02	Problem Solving, Search and Control Strategies : General problem solving, Search and control strategies, Exhaustive searches, Heuristic search techniques, Constraint satisfaction problems (CSPs) and models .	7-14
03	Knowledge Representations Issues, Predicate Logic, Rules : Knowledge representation, KR using predicate logic, KR using rules.	15-22
04	Reasoning System - Symbolic , Statistical : Reasoning - Over view, Symbolic reasoning, Statistical reasoning.	23-28
05	Game Playing : Overview, Mini-Max search procedure, Game playing with Mini-Max, Alpha-Beta pruning.	29-30
06	Learning Systems: Rote learning, Learning from example : Induction, Explanation Based Learning (EBL), Discovery, Clustering, Analogy, Neural net and genetic learning, Reinforcement learning.	31-34
07	Expert Systems : Knowledge acquisition, Knowledge base, Working memory, Inference engine, Expert system shells, Explanation, Application of expert systems.	35-36
08	Fundamentals of Neural Networks : Research history, Model of artificial neuron, Neural networks architectures, Learning methods in neural networks, Single-layer neural network system, Applications of neural networks.	37-38
09	Fundamentals of Genetic Algorithms : Search optimization algorithm, Evolutionary algorithm, Encoding, Operators of genetic algorithm, Basic genetic algorithm.	39-40
10	Natural Language Processing : Introduction, Syntactic processing , Semantic and Pragmatic analysis.	41
11	Common Sense : Introduction, Formalization of common sense reasoning, Physical world, Common sense ontologies, Memory organization.	42