

CS-401 Artificial Intelligence

Course Outline for Mid-1

Fundamentals of AI and Design of Rational Agents

Introduction, Foundations and State of the Art. Agents and Environments, Rationality and Structure

Solving Problems by Searching

Problem-Solving agents and example problems, Solution finding using Uninformed search techniques (Breadth-first, Uniform-cost, Depth-first, **Depth-limited, Iterative deepening depth-first, Bidirectional**) and Informed (Heuristic) search techniques (Greedy best-first and A*). Proof of A*.

Optimization Problems and Local Search

Hill-climbing search, simulated annealing, local beam search, genetic algorithms