

9771 exp 7

Postlab

Advantage

- Allows systematic exploration of possible states and transitions
- Can find optimal solutions for problem with well-defined state and transition rules
- Useful for modeling and solving a wide range of problems in AI, including search and planning

Disadvantage

- Complexity increases exponentially with problem size
- May get stuck in local optimal or search spaces with infinite loops
- Requires careful design and implementation to ensure efficiency and correctness

⇒ Simple and easy to implement

- Iterative improvement leads to quick convergence
- Suitable for problems with a continuous search space

- prone to getting stuck in local optima, especially in rugged search spaces
- Cannot guarantee finding the global optimum
- Sensitive to initial starting points

⇒ Simple hill Climbing: Iteratively makes small improvements to the current solution.

Steepest Ascent hill: Considering all neighbours states and selects the one with the highest improvement.

Random Restart hill climbing: Randomly restart the search from different initial states to escape local optimal.

Simulated Annealing: Introduces randomness to escape local optimal by allowing uphill moves with a decreasing probability.