Exp. 7 Saville D'silva 9536

Postlab

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Advantage	Disadvantage
- 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	- complexity increases exponentially with problem size - May get stuck in local optimal or search spaces with infinite loops. - Requires careful design and implentation to ensure efficiency and correctness

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Simple and easy to implement	prone to getting stuck in local optism, especially in rugged search spaces
- Iterative improvement leads to quick convergence - Continous search spale	- Cannot guarantee finding the global optinum - Sensitive to initial starting points

s → 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.