

Q1) ~~What~~ What are the advantages and disadvantages of state space search?

Ans Advantages :

- 1) Completeness : Guaranteed to solution if one exists
- 2) Optimality : can find the best solution
- 3) Flexibility : Adaptable to various problem domains.
- 4) Applicability : suitable for a wide range of problems.

Disadvantages :

- 1) Exponential Complexity : Computationally expensive for large problems.
- 2) Memory Requirements : High memory usage, especially for large search spaces.

Q2) What are the advantages and disadvantages of the hill climbing approach?

Ans Advantages :

- 1) Simplicity : Hill climbing is easy to understand and implement making it suitable for simple optimization problems.
- 2) Efficiency : It can converge quickly to a local optimum, especially in problems with smooth and continuous search spaces.

Disadvantages

Local optima : Hill climbing is prone to getting stuck in local optima, failing to find the global optimum in non convex search spaces.