



Informed Search Algorithms (Chapter 3)

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Material

- Chapter 3 Section 3.5~
- Exclude memory-bounded heuristic search

Outline

- Best-first Search
- Greedy Best-first Search
- A* Search
- Heuristics
- Local Search Algorithms
- Hill-climbing Search
- Simulated Annealing Search
- Local Beam Search
- Genetic Algorithms (GA)

Review: Tree Search

➤ `\input{\file{algorithms}{tree-search-short-algorithm}}`

➤ A search strategy is defined by picking the **order of node expansion**

Review: Uninformed/Informed Search

- Uninformed search algorithms **looked through** search space for **all possible solutions** of the problem **without having any additional** knowledge about search space.
- But informed search algorithm **contains an array of knowledge** such as how far we are from the goal, path cost, how to reach to goal node, etc.
- This knowledge help agents to explore **less to the search space** and find **more efficiently the goal** node.
- The informed search algorithm is more useful for **large search space**.
- Informed search algorithm **uses the idea of heuristic**, so it is also called **Heuristic search**.