

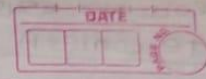
EXPERIMENT 6

Postlab

1. What is the difference between A* and AO* algorithm?
2. Why AO* algorithm only works when heuristic values are underestimated?

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ExPT-6



Postlab:-

(1) What is difference between A* and AO* algorithm?

Aspect	A* algorithm	AO* algorithm
optimality	Guaranteed optimal selection solution	Not guaranteed optimal solution
Heuristic quality	Requires admissible heuristic	Works with under-estimated heuristic
solution equality	Always provides optimal solution	May not provide optimal solution
Explanation	Efficient guided search	Iterative ^{refinement} of estimate

(Q2) Why AO algorithm only when heuristic values are under estimated?

Improper Heuristic Handling:- AO* may coverageset suboptimal solutions if heuristic values are overestimated

Convergence issues:- Overestimated heuristics in AO* is iterative refinement process leading to unreliable solutions

Reliability condition violations:- overestimated heuristic may prevent AO* from terminating early result in unnecessary exploration

Inefficient exploration:- AO* might waste resources exploring unnecessary paths of the search space with overestimated heuristic