Jatin Kadu
9648

Exp 6 Postlab

Q1. What is difference between A* and AO* algorithm

→ A* Algorithm

- Optimal solution
- Requires admissible heuristic
- Always provide optimal solution
- Efficient guided search
- More efficient with admissible heuristic

AO* Algorithm

- Not guarantee optimal solution
- Work with under estimated
- May not provide optimal solution
- Iterative refinement of estimates
- Better in scenario with underestimate heuristics

Q2. Why AO algorithm only works when heuristic values are underestimated?

→ 1. Improper Heuristic Handling: AO* may converge to suboptimal solution if heuristic values are overestimated.
2. Convergence Issue: Overestimated heuristic is harder AO* therefore must process leading unreasonable solution.
3. Subtlety Condition violation: Overestimated heuristic may permit AO* to mistakenly terminate early, resulting in unnecessary exploration.
4. Inefficient exploration: AO* might waste resources, explore unnecessary parts of search path.
5. Performance Degradation: AO*'s performance suffer with overestimated heuristics, resulting in longer convergence.