

ColumbiaX: CSMM.101x Artificial Intelligence (AI)



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?	what does the dollar sign mean? I have written my functions bfs, dfs, asta	ar and ida that would write	answer to output.txt	4
2	[DFS] Benchmarks			12
?	IDA* Fringe Size I keep getting zero grades for IDA* fringe_size / max_fringe_size values. They are actually			
Y	IDA* Implementation I have quite a few doubts about the implementation of IDA* and it is incredibly difficult t			19
Q	Conflict in Week 2 Project description. I am somewhat puzzled by the examples in Week2 project. A stated objective is: "compar			10
?	Project does not run in Vocareum Hi to all, i have submitted my project on	ect does not run in Vocareum all, i have submitted my project on Vocareum but it seems like it doesn't run there		
?	IDA*: STUCK AT IDA* I'm stuck at IDA* and would appreaciate	A*: STUCK AT IDA* stuck at IDA* and would appreaciate any true explanation. Say G is goal state, R is roo		
?	STAFF] A better test case for A* and IDA* Ii, Would it be possible to get a more complex test case with output for A* and IDA*. It s			96
Q	Project 1: Additional test cases Hi, I think additional test cases could help with developing, debugging or verifying the pro			42
?	Initialize with? How do I initialize frontier with initialstate in the search tree? I just started python and I h			4
Q	Difference between search_depth ¿Is there any scenario when search_dep	•	ifferent values? If so, c	3
ID/	A* Implementation			+

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here.

- 1. Should IDA* use a heapq or a stack (as in DFS)
- 2. Should we reset nodes_expanded each time the limit is increased?
- 3. Should we use an explored nodes list?
- 4. If we need to have an explored nodes list, should we add nodes already explored if they have lower f(n) values?
- 5. Is it fine if the next limit is the min f(n) of the nodes refused into the frontier? Or should the increment be constant?
- 6. What does the instructions mean by "For each iteration, you can handle node ordering as you would in depth-first search." Does that imply we need to use a stack?

Thank You

Related to: Week 2 / Project

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enricogiannini

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20 days ago - marked as answer 20 days ago by amalolan

1) Looking at lectures, if we implement IDA* based on IDS design - actually an iterated DFS with an increasing threshold (depth level for IDS, state cost for IDA*) - I'm a bit confused how you will use an heapq in place of a stack. 2) Yes, i think so - not resetting the node leads to other interesting alghoritm (fringe search for example, where in subsequent iterations the exploring restart from previously dropped nodes for exceeding cost threshold) 3) Set is efficient, or dictionary.... any structure with a lightweight lookup. 4) Yes, you drop the node/path with higher cost and keep the light one. 5) One of the best strategy, in my opinion, is starting with the root cost and using the lower dropped cost as next cost. You are sure you'll never lose a path with an improper greater increment. 6) See 1) - it's the same point

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gainsley



20 days ago - marked as answer 20 days ago by **amalolan**

I have been struggling to find a proper and consistent explanation about IDA* as well. Look at this: https://heuristicswiki.wikispaces.com/IDA*

This clearly says that it's a DFS (i.e. using a **STACK and NOT a priority Q**) where you cutoff at g+h>limit. I have to wrap my brain about optimality but one advantage (key points) of doing this is that it keep the fringe size small compared to A*. If you use a PriorityQ then your fringe size can also become very big.

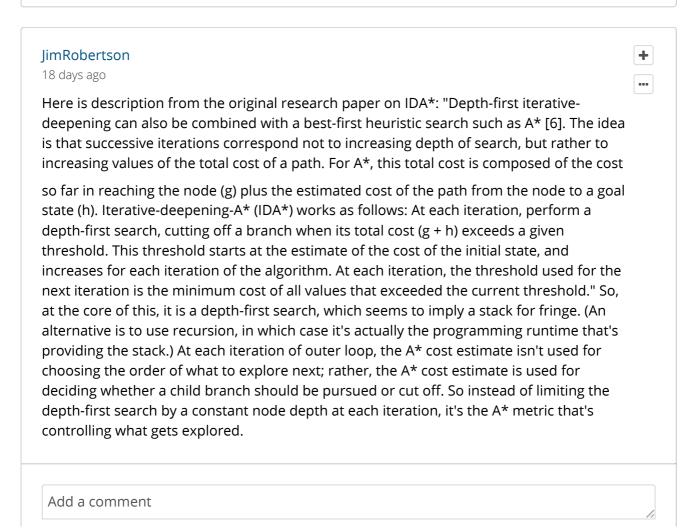
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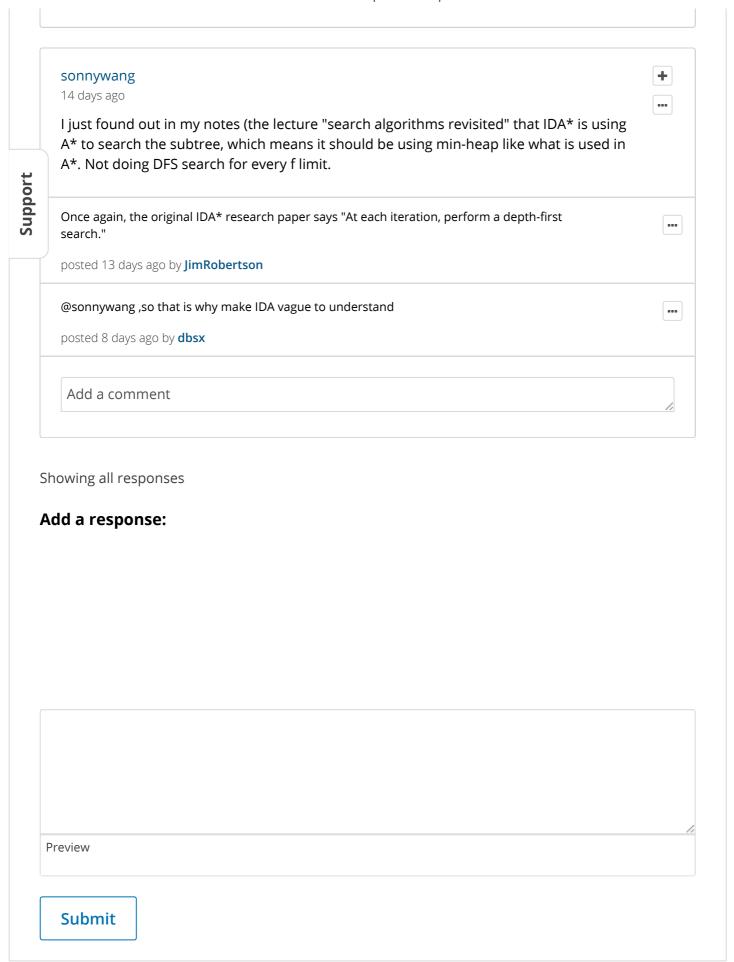
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Discussion | CSMM.101x | edX HCL33 20 days ago 1. heapq, similar to A* 2. don't know 3. yes, but use set() so your 'is in' comparison is O(1) 4. same as A* 5. design decision 6. No. It means use reverse UDLR as we did for DFS. Ok thanks a lot mate. ••• posted 20 days ago by amalolan Explain why heapq??:-/ ... posted 19 days ago by AHoebeke IDA* uses a stack, not a heap. It doesn't store nodes in a priority queue. It just uses fn ... value to compare it to the threshold (depth boundary) and increase it to the minimum of the fn values that exceeded the previous threshold. posted 13 days ago by StathisPeioglou







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