

Assignment : 8 Puzzle Game

CSE-0408 Summer 2021

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Abstract—Many problems, such as game-playing and path-finding, can be solved by search algorithms. To do so, the problems are represented by a search graph or tree in which the nodes correspond to the states of the problem. In this assignment we are going to implement a algorithms to solve 8 puzzle problem
Index Terms—python

I. INTRODUCTION

In practice, an incomplete heuristic search nearly always finds better solutions if it is allowed to search deeper, i.e. expand and heuristically evaluate more nodes in the search tree and determine the best path to take next.

The heuristic function is a way to inform the search about the direction to a goal.

It provides an informed way to guess which neighbor of a node will lead to a goal. There is nothing magical about a heuristic function. It must use only information that can be readily obtained about a node.

II. WHAT'S THE BENEFITS OF DOING PUZZLS

1. Mental exercise
2. Better Visual-Spatial Reasoning
3. Greater Attention to Detail
4. Improve memory
5. Increase your IQ
6. Improve problem solving ability
8. Better collaboration and teamwork

LITERATURE REVIEW

Sadikov and Bratko (2006) studied the suitability of pessimistic and optimistic heuristic functions for a real-time search in the 8-puzzle. They discovered that pessimistic functions are more suitable. They also observed the pathology, which was stronger with the pessimistic heuristic function. However, they did not study the influence of other factors on the pathology or provide any analysis of the gain of a deeper search

HOW MANY POSSIBLE STATES ARE THERE IN THE 8-PUZZLE GAME?

2 possible states

The classical 8-puzzle belongs to the family of sliding blocks. My book (Artificial intelligence A modern approach by Stuart Russell and peter Norwig) says that the 8-puzzle has $9!/2$ possible states.

CONCLUSION

We tested our code to see how many states it would take to get from the current state to the goal state, and we came up with seven

ACKNOWLEDGMENT

I would like to thank my honourable **Khan Md. Hasib Sir** for his time, generosity and critical insights into this project.

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