

COMPLETION CAMPER REAVER GAME SCENARIO IN 3D VIEW WITH UNINFORMED SEARCH METHODE USING NETLOGO SOFTWARE

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ABSTRACT

Search is the basis for intelligent behavior , not just a cognitive mechanism , but rather a fundamental process of Artificial Intelligence that contributes to our understanding of the intelligence in game scenario . This shows that the search method is not only a method of the many methods that can be used to achieve the goal , but is the most fundamental method of all . Informed Search has information on cost / cost to reach the goal state from the current state . With this information , Informed Search can do to develop or examine judgment collection node that leads to a goal state . This game in implementation for solving game with six camper and five reaver . They want everyone to get across a river using a boat that only fit two people , but the problem is that if the reaver outnumber camper at each stage , the reaver will eat where the role of camper quest to find an effective solution to the search problem using netlogo .

Keyword : *Game, Informed Search, Artificial Intelligence, camper and reaver*

INTRODUCTION

Background of this game is a game of strategy in which a full travel pitfalls and how to avoid them so they can survive until the goal . Character in this game scenario there are two of six people (in this case played by six camper) who travel where the trip across the river and had to cross over immediately if not wanting to be caught by the criminals in this case is characterized by reaver .

In this simulation game completion to reaver with six camper and five reaver. In this scenario the camper have come together on one side of the river and they all wanted to cross over to the other side . Provided a boat to cross enough to carry

two passengers in each crossing .Rules of the crossing if the number of passengers violated the camper will be eaten by the reaver.

The strategy in this crossing is divided into two stages , namely the first phase of which only two people can fit in the boat reaver at a time . Then the second phase of the reaver are not allowed to exceed the number of camper on every stage . If they do, they will beat the camper and then eat it . And the game will be Game Over.

Set of Problem

In formulating a strategy in this game is how to take across the camper

and reaver at the same time to secure the boat to the other side of the river. To solve this problem, search methods must be used to find different scenarios. Search methods used to find the scenario uninformed search algorithms.

The Purpose the Study

The most important thing in this game is how the algorithm incorporated in uninformed search like breadth-first search and depth-first search can be implemented into the software so that the solution netlogo search strategy in the game camper and reaver can be resolved properly.

The Design Model

In designing this model will use the agent-oriented approach that is relatively easy to be implemented in software netlogo, rather than using a queue data structure to implement a classical search algorithm. This agent do a search by transferring the information to another agent then forwards the search. Therefore, a queue data structure that is separate from what happened in the search is not needed in this search. The hope is that this could be the agent-oriented approach to provide a more intuitive solution that makes it easier to understand how the search strategy works. Using the design of the first-person perspective, so that it is easier to understand the differences in search strategy.

Search agent will maintain information about the current state as time is needed (path) and estimated (cost). Each seacher agents expand the search to see if this allows the following actions:

- Two camper get into the boat and cross to the other side;

- Two reaver get into the boat and cross to the other side;
- Two camper get into the boat and cross to the other side;
- Two reaver get into the boat and cross to the other side;
- Two of the camper and reaver get into the boat and crossed to the other side;
- Only one cannibal get into the boat and cross to the other side.

Note that the state of the search for these problems can be represented respectively by the two groups of characters: (# Camper at the start of the river, # reaver on the start side of the river, # boats on the start side of the river). Therefore, the start state is represented by the tuple (6,4, 1) and the goal state (0, 0, 0). In Interface, using parallel coordinates graph, is used to visualize the search.

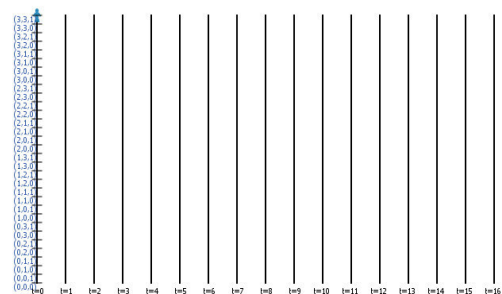


Figure 1. Graph coordinates to visualize search.

a. Interface Simulation Model

Interface Simulation models are defined as follows:

- Setup : to remove all environment variables and, re-animation and redraw the graph.
- Go-1 step: to make the search proceed one step at a time.
- Go-Finish: to create a continuous search continues until it reaches the destination or state is considered a success.
- Go-animation: to start the animation and displayed at the bottom center Interface. Voters sliders and switches model the

interface is defined as follows:
 Search-behavior: to determine the search strategy. Max-depth: to set the maximum depth of the search.

b. Uninformed Search

Searching uninformed or "blind searching" occurs when a search agent has no information about the environment is sought. A real analogy for this type of search is a blind man looking for a maze that had never entered before, who do not have prior knowledge. One approach is 'blind' search agent can make a decision to continue to make a choice at every intersection he met, and continues until he reaches the exit or central (purpose) or until it reaches a dead-end. can then backtracks to the last intersection that has not been visited, and then choose one of them. Repeatedly applying this behavior until the goal is reached.

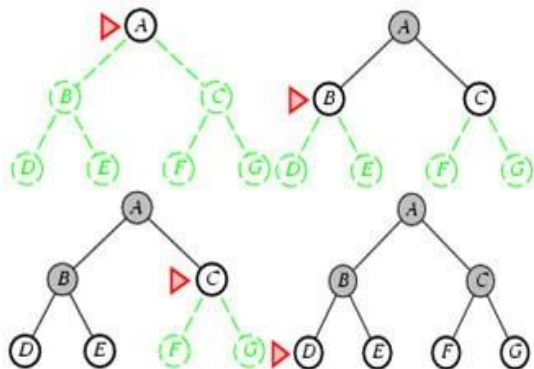


Figure 2. Tree Search Problem breath first search is relatively shorter.

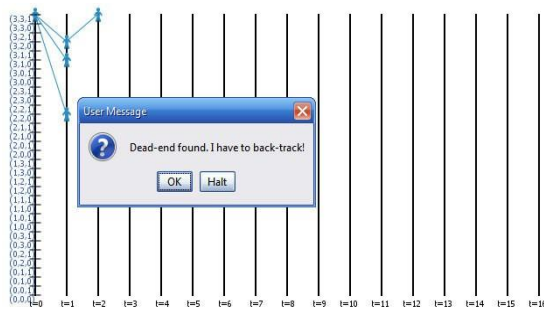


Figure 3. Graph shows DFS Dead-end that requires back-track the previous track

RESULTS AND DISCUSSION

Here are the results of the implementation of camper and reaver game where the generator engine to search using uninformed search strategies. In game has six camper and five reaver, then there is a boat and the river, where the camper had to find a strategy to safely cross the passengers in the boat where the balance must be maintained between the camper and reaver are.

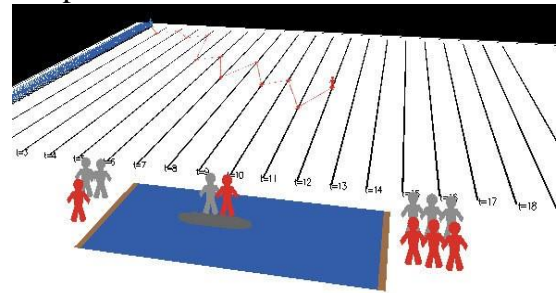


Figure 4 Camper and Reaver Display Game using NetLogo.

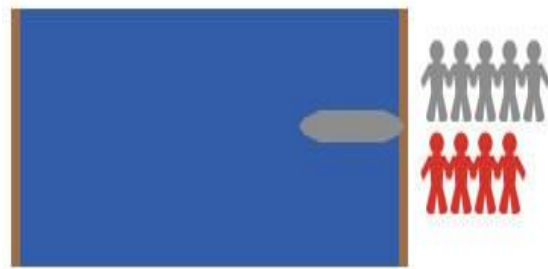


Figure 5. Animation shows the state 0-0-0 which means the search for solutions to the problems the game camper and reaver resolved.

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