

AI Project 2

Team Member

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Task Assignment:

Jinhao Hu:

Design the structure of the program; Alpha-beta pruning function; heuristic function; Assemble all the code into the program, then debug and test.

Xiangyang Han:

Design the httpClient class and implement the function to send POST and GET request; Extract the useful information from the result returned by the httpClient.

Yizhu Wang:

Implement the isEnd() function to judge if the game ends; Implement createGame() and acceptGame() function to initial the game when create a game or accept a game.

Zheyu Zhang:

Implement the Node class; Implement the start() function to start the game and the game mode can be changed by change the values of some variables.

Description:

Environment: The project is coded in Java

Search Space: Each spot of the chess board three states : X,O,-, so the search space is the combination of all the states of all the spots.

Evaluation Function:

For each spot with chess piece on it:

- 1.Begin from the spot to vertical direction, horizontal direction and two diagonal directions, count the number of chess pieces with same color until it meet a piece with another color or to the edge of the board. Record the count.
- 2.If the count is more than the target, then the score will a very big value*(1 or -1), 1 or -1 depend the beginning chess is belong to me or not. Otherwise, judge if at the two ends of the line is blocked by edge or opponent's chess piece. If both of the ends are not blocked, the score will be $\text{count}^2 \cdot (1 \text{ or } -1)$. If one end is blocked, the score will be $\text{count}^2 \cdot (1 \text{ or } -1) / 4$

3. The score of one chess is add four direction score. And the total score of the board is add all the chesses' score

Agent: One agent is my algorithm and another agent is the opponent's algorithm

If anyone win or the game draws, the program will print the information and end.

Get more information to run the program by reading README.