

Project Proposal: AI Gomoku Player in Haskell

Yunkai Zhu; UNI: yz4129

1 Introduction

Gomoku, also called Five in a Row, is an abstract strategy board game. It is usually played by two players, represented by the white and black Go stones, on a Go board. In the past, this game was played on standard 19×19 Go board, however, now the game is usually played on 15×15 board.

2 Game Rules

Players can place stones of their color on empty intersections on the board, represented by $(row, column)$. For simplicity, in this project, when a player have placed an unbroken chain of 5 stones, the game stops and that player wins. The unbroken chain of 5 stones can be placed horizontally, vertically and diagonally.

3 AI Player

I am going to implement a MinMax search algorithm with depth 6 for the AI player. The search process will be implemented in parallel when searching for the best option for each branch.

4 Testing

I plan to run the program on different numbers of cores for 10 times, take the average and compare the results.

References

1. <https://www.andrew.cmu.edu/user/rbcarlso/proposal,bcarlso.html>
2. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.124.5904rep=rep1type=pdf>