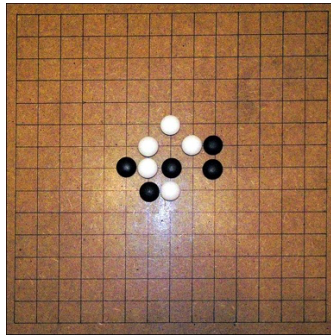


Project Proposal: Gomoku in Haskell

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1. Introduction:

Gomoku, also known as Five in a Row, is an abstract strategy board game. It is traditionally played with Go pieces (black and white stones) on a Go board. It is played using a 15 x 15 board while in the past 19 X 19 board was standard. Because pieces are typically not moved or removed from the board, Gomoku may also be played as a paper-and-pencil-game. It is a generalized version of Tic-Tac-Toe.



2. Game Rules

There are two players of the game, who own either white color stones or black color stones. Players can place their stones on empty intersections of the 15 x 15 board, represented by (row, column). Usually, player who owns the white stones are the first one to start the game. When one player has placed a serial chain of white stones or black stones, that player wins the game.

3. AI Player

The main purpose of this project is to develop a Gomoku AI using Haskell. I will implement the sequential version of Minmax Algorithm and Alpha-Beta Algorithm for the AI player. Then based on the performance, I will modify the two algorithms to be parallelized and compare the performance.

4. Testing

I will run the program on different numbers of cores and then use the average result to compare the performance of different algorithms.