

1) My evaluation function looked at how many # in a row both players had and assigned a score for each.

1 in a row = 15

2 in a row = 35

3 in a row = 75

4 in a row = 250.

Adversary points were subtracted from player ai's points so the machine could avoid a loss as expected from the alpha-beta expectimax algorithm.

2) The deeper the layers, the slower the ai responds. With four layers maximum, it takes the program about 10 seconds to respond, which is pretty bad considering it only sees 4 moves ahead. That said, the branching factor ($b = 7$) remains the same, so adding or subtracting from the maximum depth affects the ai's response time exponentially.

3) I can beat the ai algorithm (but you have to be paying attention or it will beat you)

4) In an ai vs ai game, the player that goes first will most likely (if not definitely) lose. This is because by my heuristic, no matter the game, the machines will be playing the exact same game.

Results

Y|R

Game1 0|1 Yellow first, Red wins

Game2 0|2 Yellow first, Red wins

Game3 0|3 Yellow first, Red wins

Red wins overall