
HEURISTIC ANALYSIS

Playing Matches										

Match #	Opponent	AB_Improved		AB_Custom		AB_Custom_2		AB_Custom_3		
		Won	Lost	Won	Lost	Won	Lost	Won	Lost	
1	Random	8	2	9	1	9	1	10	0	
2	MM_Open	7	3	9	1	7	3	7	3	
3	MM_Center	8	2	9	1	9	1	9	1	
4	MM_Improved	9	1	8	2	7	3	8	2	
5	AB_Open	4	6	4	6	5	5	5	5	
6	AB_Center	7	3	4	6	5	5	7	3	
7	AB_Improved	5	5	5	5	4	6	4	6	

Win Rate:		68.6%		68.6%		67.1%		70.0%		

AB Custom:

The smaller the value of the custom_score function is the worst chance to win the game. The function evaluates the number of the empty space on the game board.

AB Custom_2:

This heuristic beats the player if his current position is in on of the corners. When a player is near a boarder the possibilities to move get smaller and the chance of win gets reduced.

AB Custom_3:

This heuristic calculates the difference between the available moves of the players. The moves of the opponent are multiplied by two to make the opponent player more competitive.

Conclusion:

Custom_3 heuristic which calculates the difference between the available moves works best. The player has more moves compared to the opponent player which enhances the changes to win the game. The current position on the game board is key factors which decides the winner of the game. As we can see from the results (table attached above) the heuristic beats the player when the player is in the corner of the board. Custom_2 heuristic works the second best here.

Isolation is the two player step by step game, the heuristics(custom_1) wont be helpful since it calculates only the remaining space on the empty board. Combining custom_2 and custom_3 will lead to better heuristic and the other possibilities is to calculate the distance between the player in such a way where the player gets reward if the position in in the center and gets pushed when its on the corner of the board. After considering all the scenarios I would recommend AB_custom_3 which has the best winner rate and not complicated to calculate.