

Heuristic Review 6

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- Custom score

First custom heuristic explores the ideal weight assignment to player's moves attribute as well as opponent moves attribute to increase the average win rate using this simple yet effective criteria. Various aggressive, conservative and optimized weight combinations were assigned to maximize win rate.

In addition, this criterion was enhanced by multiplying with number of filled spaces throughout the length of the game given that its more important to trust available moves later in the game to win.

- Custom score 2

The first heuristic has a “cap” to its performance, especially during various stages of the game. In this heuristic, various criterion is used to provide score based on how many turns have been played. During the first quarter, we player to stay as close to the center, hence weighted “own_dist – opponent distance” is used. During next two potential quarters of the game first custom heuristic is used. During last quarter of the game, score is purely based on weighted “available moves” for the player.

Performance of this heuristic was significantly better than first heuristic which confirmed that having different criteria during opening, middle and closing is important.

- Custom score 3

Since the isolation variant uses knight moves, the traditional concepts such as distance to center, don't apply as well. Whereas with knight isolation, the distinctive pattern of moves lets you steal moves from other players.

In this heuristic, if the player has access to the same move as the opponent a higher score is returned. If the player has access to same move as opponent

and the amount of moves available is less, then even higher score is returned.

Win ratio with 5 matches :

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

Win Rate:		71.4%		65.7%		65.7%		72.9%	