

The table above shows the relative performance of my agent in a round-robin tournament against several pre-defined agents.

The tournament opponents are listed below.

- Random: An agent that randomly chooses a move each turn.
- MM\_Open: MinimaxPlayer agent using the open\_move\_score heuristic with search depth 3
- MM\_Center: MinimaxPlayer agent using the center\_score heuristic with search depth 3
- MM\_Improved: MinimaxPlayer agent using the improved\_score heuristic with search depth 3
- AB\_Open: AlphaBetaPlayer using iterative deepening alpha-beta search and the open\_move\_score heuristic
- AB\_Center: AlphaBetaPlayer using iterative deepening alpha-beta search and the center\_score heuristic
- AB\_Improved: AlphaBetaPlayer using iterative deepening alpha-beta search and the improved\_score heuristic

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Playing Matches									
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Match #	Opponent	AB_Improved		AB_Custom		AB_Custom_2		AB_Custom_3	
		Won	Lost	Won	Lost	Won	Lost	Won	Lost
1	Random	9	1	9	1	10	0	8	2
2	MM_Open	8	2	6	4	7	3	7	3
3	MM_Center	10	0	10	0	9	1	8	2
4	MM_Improved	6	4	4	6	6	4	5	5
5	AB_Open	8	2	7	3	6	4	5	5
6	AB_Center	5	5	6	4	4	6	7	3
7	AB_Improved	4	6	5	5	7	3	4	6
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Win Rate:		71.4%		67.1%		70.0%		62.9%	

custom\_score|

This custom function simply returned the difference between # of moves available to my player vs opponent. The strategy doesn't favor either player and came third in order of strategies.

custom\_score\_2

This custom function simply increased the aggression as the end of the game was near. The idea is that I would allow less spaces for opponent to move (putting more weight to prevent winning). This was the second best strategy.

custom\_score\_3

This custom function simply used the distance from current position differenced by number of opponent moves. The idea is that the further away you are from center, the more exploration is required leading to a lower probability of winning. This strategy didn't seem to work (alt least when compared to others) since the center of the board doesn't necessarily translate to more options for my player to move.