Basic Report of my heuristic functions

1 custom_Score_simple_combination

In this function, I mainly changed the coefficient before opp_moves. I tried to iterate tens of numbers between 0 and 1.0. Finally I found that the range [0.2-0.4] gives better performance. In this function, I just use the coefficient 0.3.

ID_Improved: 67.86% Student: 77.86%

2 custom_score_target

This function is still based on own_moves. However, when the last move is also in the legal moves of the opponent, I increase the score. The basic idea is that it is better to move to a position which is also opponent's legal move.

ID_Improved: 67.14% Student: 76.43%

3 custom_score_dist

This function is also based on own_moves. In addition, we add one item which is proportional to the distance. The basic idea is that if we move to position which cannot be achieved by the opponent, it should be better.

ID_Improved: 69.29% Student: 76.43%

Actually, in my computer, all of these data vary a lot. Generally, the winning rate of ID_Improved is around 65%-70% and the winning rate of Student is around 75%-80%. But sometimes, I may get a winning rate beyond the normal range because of timeout or other possible reasons.

All my three heuristic functions are based on own_moves. I just add other items as a secondary method to increase some tendency. Actually, all my three functions gave similar winning rate. I cannot see one function is obviously better another. However, based on the stability I observed from multiple runs, I think the first heuristic function is my choice for the final heuristic function.