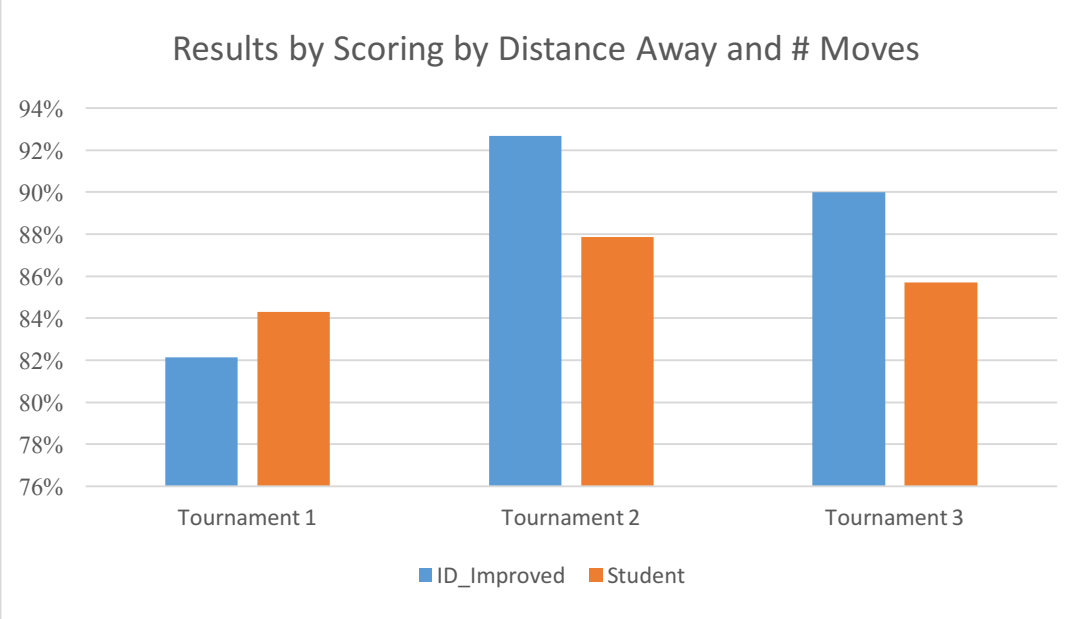
For the heuristics I worked with four functions. I first attempted to create a heuristic that just attempted to pick the position that was the farthest away from the opponent. I did this by find the location of the proposed move and the location of the opponent. I then calculated the distance of the line in between and returned it.

```
Results of Score of Distance Away:
          ----------
    ID_Improved         87.14%
    Student             79.29%
```

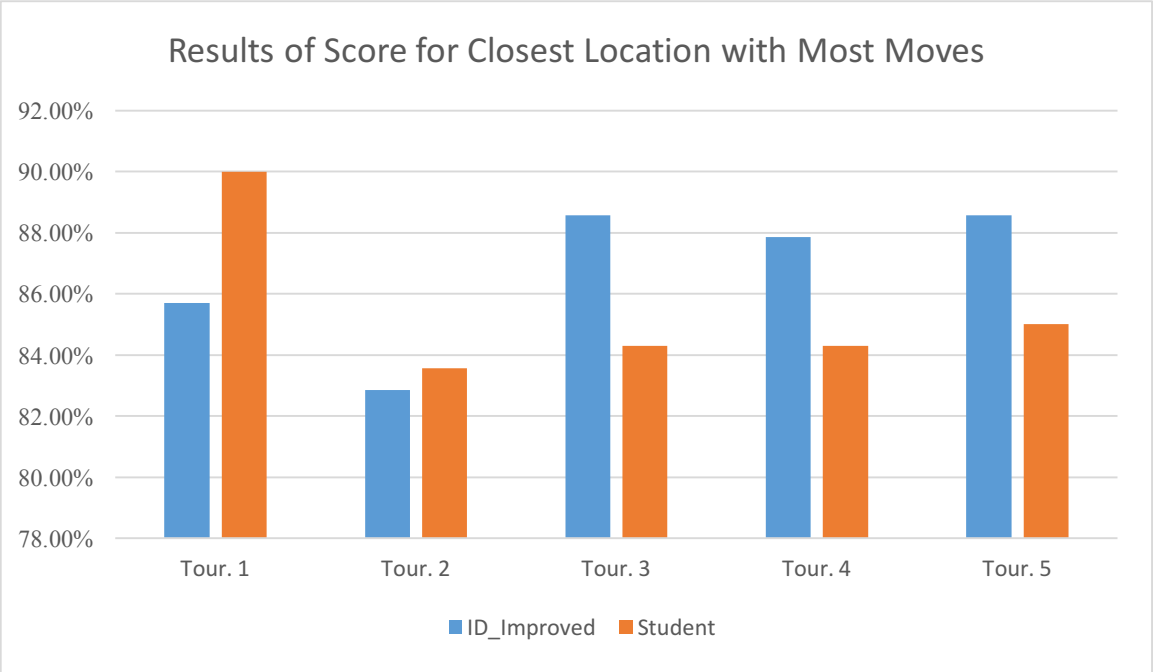
This heuristic performed poorly, as I suspected it might. I modified this heuristic to pick the move that was the furthest away from the opponent, but also taking into account the number of available moves at that location. This was completed simply by adding the number of moves to the distance of the line in between. The pro of this is it goes further away from opponent while trying to survive the longest. The con, is that in the case of a very fair location it may pick it over a very close move with more potential moves available later. I would have to play the game a lot more to understand which may be more useful. Either way, this heuristic performed significantly better. Although it still didn't outperform the ID_Improved its tournament average seems to stay in the 80% range



I then shifted tactics completely to an idea of picking a location with the most moves on the half (split on the y-axis) with the most open spaces. I thought this might cause it to move towards the open area of the board and have less likelihood of getting boxed into a corner. Unfortunately, this performed worse than the previous during its first tournament.

```
Results of Scoring by Most Open Half and Number of Moves:
          ----------
    ID_Improved         86.43%
    Student             78.57%
```

Finally, after playing a lot of games with my partner, I discovered that moving towards the opponent seemed to work better when using the knight configuration. I modified my second heurist to pick the closest location to the opponent with the most number of moves by subtracting them from each other. At first it seemed to performed better the ID_Improved, but on tournaments 3 to 5 it did not out perform.



I decided to submit this final heuristic though as it performed the best out of the ones measured. It also beat the ID_Improved on two occasions. Finally, this method was closest to the what helped me win during human game play. With a transposition table and opening and ending moves, I think this could be a good heuristic.

Unfortunately each of them needs more testing and refining.