

CS6380 : Artificial Intelligence

Assignment-2 : OTHELLO Game Implementation

- For this Assignment (OTHELLO implementation) , we have implemented MinMax_with_AlphaBeta_Pruning Algorithm

Algorithm Description :

- This algorithm is basically an AlphaBeta algorithm that consists of an evaluation function which comprises of 5 major components namely :
 - Stability ,
 - Mobility ,
 - Corner_Capture ,
 - Placement ,
 - Coin_Difference
- **Stability :**
The coins are Stable if they cannot be captured by the opponents.
Eg : Boundaries & Corners
- **Mobility :**
Increasing our available moves and reducing the possible opponent moves.
- **Corners_Capture :**
Tries to capture the corner position which cannot be captured by the opponent later.
- **Placement :**
Having different weights for different positions on the board to get a positional advantage over the opponent.
- **Coin_Difference :**
To maintain a coin_difference over the opponent to gain the upper hand which is ultimately the required goal.

Observations:

- Due to the time constraint , we can either use Iterative deepening approach or search the tree from left to right until the constrained time and we found that the later approach was better than the former approach.
- After deciding over the components, their respective weights are to be learned based on the results from several runs with other bots