Advanced Heuristic

What features of the game does your heuristic incorporate, and why do you think those features matter in evaluating states during search?

My heuristic incorporates the distance from the corners and to the other opponent while evaluating its states. Distance from the corners is important as liberties decrease to 2 at the corner. Thus it is important that the agent attempts to stay away from them to maximize the liberties it has. Distance from the opponent is minimized to ensure that the agent is constantly attempting to block the other player's movements.

Analyze the search depth your agent achieves using your custom heuristic. Does search speed matter more or less than accuracy to the performance of your heuristic?

My heuristic reaches a search depth of about 6 to 7. This is twice as far as the MiniMax player. Thus search speed is more important as it allows the player to search further into the possible moves of the game, allowing it to avoid a terminal state earlier than its opponent.

Below are graphs showing comparisons of the Base Heuristic's performance to my heuristics performance in both 150ms and 300ms time limit constraints. One important thing to note is that there is no real noticeable difference between 300 ms and 150 ms search times. While the data is not shown here, even one whole second did not achieve any noticeable difference. The base heuristic achieved 68% wins against the MiniMax player while the new heuristic achieved 73%.