REPORT (Abelardo Jara)

Results:

Opponent	# Matches	Time Limit (ms)	Win pct	Exec time (s)
GREEDY	100	150	86.5	63
GREEDY	100	150	83.0	65
GREEDY	100	150	83	64
MINIMAX	100	150	54	87
MINIMAX	100	150	52.5	80
MINIMAX	100	150	57.5	86
SELF	100	150	50	106
SELF	100	150	50	109
SELF	100	150	50	106

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

I implemented the Monte Carlo search algorithm as described in "Monte Carlo Tree Search with Heuristic Evaluations" by Marc Lanctot [https://www.cs.du.edu/~sturtevant/papers/im-mcts.pdf]

A difference with that implementation is when multiple possible expansions are possible I added an additional heuristic to choose the solution that gives me higher number of liberties with regards to my adversary.

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?

Opponent	Time Limit (ms)	Depth	Win pct	Exec time (s)
MINIMAX	150	2	49	46
MINIMAX	150	2	54	41
MINIMAX	150	3	53	69
MINIMAX	150	3	64	69

Search time increases dramatically with increased depth. However, win percentage only improves slightly.