

## CS 4300 - WordGuess Initial Search Results Report

This report presents the search results and performance analysis of the heuristic agent for the WordGuess game. The agent uses a heuristic approach to filter words based on letter frequency and feedback from previous guesses.

The agent is capped at Six guesses only, after which the episode is considered a failure. The environment supports Three levels of difficulties scaling with the size of the word list used.

Following is the performance of the agent over 1000 episodes:

	List of 3k words	List of 5k words	List of 14k words
Success rate (%)	95.8%	90.5%	84.1%
Average number of guesses <b>left</b>	2.07	1.84	1.49

To measure the agent's performance if it would have reached a correct solution without a guess limit. Here is the performance of the agent over a 1000 episodes and uncapped guesses:

	List of 3k words	List of 5k words	List of 14k words
Success rate (%)	100%	100%	100%
Average number of guesses <b>used</b>	4.09	4.47	5.03

I believe this means with few performance adjustments it is possible to have near perfect results across all lists. The filtering side of the agent is what ensures a correct result is reached eventually, it is the heuristic side of the agent that will need additional work.