***Abstract* – Ms. Pac-Man has long been a benchmark for testing software-playing artificial intelligence agents. This paper examines an algorithm used to play the game, as well as multiple variants of the algorithm. Using neuroevolution, optimal parameters were found and the best results from each algorithm, as well as results from attempts by human players using the same strategy, were compared. [SAVE THIS PART FOR RESULTS]**

1. INTRODUCTION

Video games have long been used to analyze Artificial Intelligence (AI) algorithms. One of the most popular genres of games to test algorithms are maze games, due to the necessity of pathfinding and the likely presence of some form of obstacle avoidance. Pac-Man, one of the first and undoubtedly the most universally recognized of these games, has been the subject of much research in game-playing AI. This is partly because of its quality of being simple enough to allow for significant research to be done while complex enough to require somewhat intensive algorithms. However, some aspects of the game lend itself to be rather trivial for AI software controllers to succeed, even at a high level. However, Ms. Pac-Man, a variant on the original game format, proves to be a better-suited challenge for an AI controller, due to its non-deterministic nature. The lower level of predictability in ghost behavior provides more use in examining different approaches.