

## ADAPTATION OF THE MINIMAX ALGORITHM FOR GAMES WITH THREE OR MORE PLAYERS

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In game theory, a very popular algorithm for decision-making is known as MiniMax. It utilizes a function to analyze and score the current state of the game, forms a tree of possibilities, and assuming the opponent always chooses the best move, finds the best possible state for the game after N turns. However, one limitation of this algorithm is that it was originally developed only for two-player games. Therefore, the objective of this work is to analyze and explore the possibilities of extending and adapting the MiniMax algorithm for three or more players, where more complex situations arise. The study aims to understand its behavior, identify suitable scenarios, and investigate any bottlenecks in its functionality. With that said, the goal of this work is to adapt the original MiniMax algorithm, originally designed to handle the limitation of two players, to a more complex setting involving three or more players. The purpose is to develop, analyze, and present a variation of the initial algorithm in the form of an applied research, using an inductive method to observe and compare the adaptation with the original version of the algorithm. Within this context, we aim to compare the performance of the MiniMax algorithm implemented in games with three or more players against other decision-making methods. We want to verify if the MiniMax algorithm can identify the best moves in different scenarios, investigate its performance, and compare the results obtained.

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