

ABSTRACT

Game theory's Min-Max algorithm is a strategic decision-making tool in AI that optimizes outcomes by minimizing potential losses. By evaluating possible moves and their consequences, Min-Max enables AI agents to make informed decisions in competitive environments. The algorithm works by recursively exploring game trees, considering all possible moves, and selecting the one that maximizes the chances of winning or achieving a favorable outcome. Min-Max is widely used in game development, particularly in board games like chess and Go, to create intelligent opponents. Its applications extend beyond gaming to decision support systems and strategic planning. By anticipating potential moves and counter-moves, Min-Max helps AI agents outmaneuver opponents and achieve strategic goals.