Research review

‘game tree searching by min max approximation’ is a report which looks into using generalised mean operators to approximate the ‘min’ and ‘max’ values in a game tree. Their new technique aims to reduce the strain on the limiting factor of game tree searching, the computational time. Throughout the report techniques to search a game tree are discussed, such as alpha-beta, pruning which aims to reduce the number of branches the search needs to evaluate, and iterative deepening, which only allows the game tree to be searched to a set number of levels.

The minimax approximation heuristic is an altered version of the penalty-based search method. The penalty-based search method penalises edge nodes of the game tree which represent a bad move, more than an edge node which represents a good move. It then uses these penalty values to decide which leaf node should be expanded. In minimax approximation, the penalties are defined in terms of the derivatives of the approximating functions.