Abstract

Board games are very simple games and easy to learn. It has simple rules to move dice or discs. Though they are simple to learn, differences in experiences, skills and strategies make master-level players and naive players. To teach these properties to machine is a daunting task. Researchers attempt to develop evolutionary game player who like humans needs time to start the board game and will improve its performance at each passing game. Evolutionary algorithms simulate this learning procedure and genetic approach helps to find diverse fitter
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players. With respect to checkers, the evolutionary algorithm was able to discover genetic algorithm that can be used to optimize the move selection in play to near-expert level. Evolutionary approach develops machine player that generates solutions which does not often dominates in the last generation. In real world board game problems, diversity is very useful which can be attained by having a number of machine learning algorithms. This paper highlights, evolutionary genetic algorithm to improve the diversity of a population. From the last generation, representative checkers player fitness values are chosen to carry them to next generation from each species (population member) and combine them in current generation to play the checkers game. There are many high fitness solutions in a search space. Fitness selection techniques can find diverse strategies that survive in genetic search. In this paper, diverse evolutionary checkers players found by such techniques are combined. The evolved move of game player is compared with the fittest player evolved using a simple evolutionary algorithm.

References


Index Terms

Computer Science
Keywords
Board Game  Evolutionary Algorithm  Game of Checkers Evaluation Function  Genetic Algorithm