A Novel and Efficient Selection Method in Genetic Algorithm

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Abstract

The performance of a Genetic Algorithm (GA) is inspired by a number of factors: the choice of the selection method, the type of crossover operator, the rate of mutation, population size etc. GA allows a diverse population to evolve under a specific selection scheme to fitter population. Therefore, the choice of the selection method plays a very important role in the maximization of the fitness function of the evolved population. In this paper, a novel selection method called “Alternis” has been proposed. This study emphasizes on the comparison among the different selection methods used in GAs and the proposed method and evaluate their performance. Results of this study highlight the significant differences among the various selection schemes. The influence of the various selection methods on the performance of genetic algorithm can be estimated to assist the preference of a selection method. The aim of this paper is to propose a selection method which gives best overall performance in a widely diverse population.

References
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Index Terms

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Keywords

Genetic algorithm, Chromosomes, Crossover, Mutation, Fitness function.