Abstract

Almost all of the approach to solve NP-hard and NP-complete problem simulate artificial life. In this research, the behavior of eurygaster life is studied, so according to their life the new algorithm is introduced. In spite of PSO algorithm, that is used to solve continuous nonlinear functions, researchers' algorithm is so suitable to solve both continuous and discrete functions. Eurygasters attack to grain farms and distributed over them. It is worth to mention that these insects attack to farms in groups furthermore each group colonizes in one farm. It is observed that after periods of time all of the farms in a region are occupied by these groups of eurygasters. When each group of these insects are going to seek a farm to feed on it, they consider nearly all the farms and settles on a farm which have a lowest distance with them and doesn't have any group of eurygasters. It is clear that by distributing several groups of eurygasters, depending on the problem size, on search space of problem, the solution of the problem can be extracted. In this research, using the behavior of eurygasters, a new algorithm has been invented and has been tested on graph partitioning. The evaluation results show the advantage of researcher algorithm over ancient ones like genetic and PSO.
Eurygaster Algorithm: A New Approach to Optimization

References

- L. Altenberg, "The evolution of evolvability in genetic programming", In K. E.


Index Terms

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Keywords

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eurygaster algorithm
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