International Journal of Artificial Intelligence
ISSN 0974-0635

Speciation based firefly algorithm for optimization in dynamic environments

Babak Nasiri, M.R. Meybodi

Abstract

In many optimization problems in real world, objective function, design variable or constraints can be changed during time, so optimal value of these problems also can be changed. These kinds of problems are called dynamic. Algorithms which are designed for optimizing in these environments have some principles that distinguish them from algorithms designed in static environment. In this paper, for the first time, an algorithm based on firefly algorithm is proposed for optimization in dynamic environment. Firefly algorithm is a new meta-heuristic algorithm with a great potential for discovering multiple optima simultaneously. Mentioned ability of this algorithm has been used to propose a novel approach for multi-modal optimization in dynamic environments. The proposed approach evaluated on Moving peaks benchmark problem, which is the most famous benchmark for assessment in dynamic environments. The obtained results show the proper accuracy and convergence rate for the proposed approach in comparison with other well-known approaches.