عنوان مقاله:

Fuzzy Swarm-based Algorithm For Feature Selection

محل انتشار:

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خلاصه مقاله:

The process of selecting features is crucial in data mining and machine learning, as it can greatly improve the performance of models. Feature selection is not amenable to polynomial solutions. One approach involves utilizing approximate methods and metaheuristic algorithms. Metaheuristic algorithms have certain parameters that are typically treated as constants. This paper explores the application of swarm-based algorithms, including the Firefly Algorithm (FA), Bat Algorithm (BA), Pathfinder Algorithm (PFA), and Grasshopper Optimization Algorithm (GOA), for feature selection. All of these algorithms have one or more parameters that can be updated adaptively. The research focuses on the adaptive adjustment of algorithm parameters through the use of fuzzy inference systems, aiming to enhance the performance and efficiency of feature selection. In this paper, classification error, and the proportion of selected features are considered objective functions. A comparative analysis of the performance of these algorithms, with a specific emphasis on the impact of adaptive parameter updates, is presented. The findings offer valuable insights into the use of swarm-based algorithms for feature selection, providing guidance for practitioners and researchers in the field of metaheuristic optimization.

کلمات کلیدی:

Feature selection، Fuzzy inference system، Swarm، based algorithm

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