An Improved Ant Lion Optimization Algorithm Based Convolutional Neural Network for Big data Classification

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Abstract:
The continuous advancement of remote sensor technology is contributing to a daily surge in data production, necessitating improvements in the accuracy of big data classification. This research proposes a unique feature selection method named as Improved Ant Lion Optimization (IALO) algorithm that integrates the behavior of animal migration with Ant Lion Optimization (ALO) algorithm. The proposed feature selection method enhances the performance of the ALO algorithm. The datasets utilized for the research are iris, wine, Cleveland, and Switzerland datasets. Next, the map reduces framework is utilized and then feature extraction is processed by Linear Discriminant Analysis (LDA). The feature selection is performed by the proposed IALO algorithm and the selected features are given to CNN) classifier for the big data classification. The performance of the proposed ch as accuracy, computation time, specificity, and sensitivity. The proposed .05% with less computation time of 4.8 secs in the wine dataset which is comparatively higher than other existing methods such as Grey Wolf Optimization based CNN (GWO-CNN), Particle Swarm Optimization based CNN (PSO-CNN), Cuckoo Search Optimization based CNN (CSO-CNN), Ant Lion Optimization based CNN (ALO-CNN).

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