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BCDDO: Binary Child Drawing Development Optimization

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Abstract

Child Drawing Development Optimization is a recently developed metaheuristic algorithm that has been demonstrated to perform well on multiple benchmark tests. In this paper, a binary Child Drawing Development Optimization (BCDDO) is proposed for wrapper feature selection. The proposed BCDDO is utilized to choose a subset of important features to reach the highest classification accuracy. Harris Hawk optimization, salp swarm algorithm, gray wolf optimization, and whale optimization algorithm are utilized to evaluate the effectiveness and efficiency of the suggested feature selection method. In the field of feature selection to improve classification accuracy, the proposed method has gained a considerable classification accuracy advantage over previously mentioned methods. Four datasets are used in this research work; breast cancer, moderate COVID, big COVID, and Iris using XGBoost classifier and the classification accuracies were (98.83%, 98.75%, 99.36%, and 96%), respectively, for the four mentioned datasets.

Keywords Child Drawing Development Optimization · CDDO · BCDDO · Classification · Feature selection

1 Introduction

Data science has recently become a vital part of the healthcare industry. Typically, healthcare data are acquired from patients via electronic medical records. A typical application of data in health care is the development of decision support

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