A Hybrid African Buffaloes Voting Optimization and Random Forest Framework for Breast Cancer Classification

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Abstract

Breast Cancer cases are rising day by day, and many women have lost their lives due to this disease. Timely detection of the disease can reduce mortality and increase patient survival. Many researchers have used machine learning to develop methods for precisely detecting breast cancer. The attributes used by these methods are high-dimensional. The model's results depend on the quality and size of the attributes. Feature selection is a vital step in breast cancer detection. In this paper, modified African buffalo optimisation known as African Buffalo Voting (ABV) optimization is proposed, which is utilised to select the essential features, while Random Forest is used as a classifier to classify the breast cancer. The Wisconsin Breast Cancer dataset (WBCD) is used to evaluate the performance of the proposed work. Results demonstrated that our model achieved an Accuracy of 97.02%.

Keywords

African Buffalo Optimization, Breast Cancer, Deep Learning, Machine Learning, Random Forest Classifier.