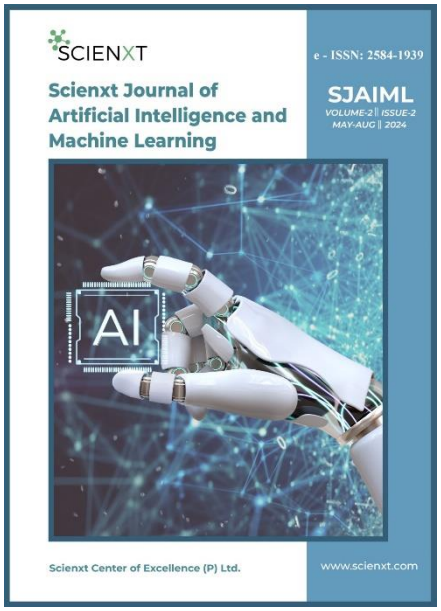

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"A review of methods for thyroid disease detection: examining hybrid meta-heuristic and lstm models in the literature"

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Abstract:

Clinical research faces major challenges due to thyroid disease management and metabolic control complexity. Hypothyroidism and hyperthyroidism are two common thyroid disorders that are metabolically affected by the secretion of thyroid hormones. It is important to use data cleansing techniques to analyze the random data to assess patient risk accurately. Deep neural networks (DNNs) are an important and effective tool for predicting thyroid diseases, surpassing manual diagnostic methods in knowledge and time required. In this study, we present a new method for thyroid diagnosis and disease prediction, including long-term and short-term memory-based convolutional with a special architecture for disease detection. Let us include the neural network (LSTM-CNN). Feature selection incorporates bias field correction and uses a hybrid insufficiency technique, combining Black Widow optimization with a mayfly optimization approach (HBWO-MOA) to obtain disease classification using LSTM and Vgg-19 architectures in deep learning (DL). Framework in the. Using ultrasound images from the DDTI dataset, our method demonstrates skill in predicting and classifying thyroid diseases. The comparative analysis shows that the proposed Vgg-19-LSTM method, using metrics such as accuracy, sensitivity, precision, recall, and F1-score, outperforms current methods such as AlexNet-LSTM, ResNet-LSTM, and Vgg16-LSTM.

Keywords:

Classification, HMOA-BWO, LSTM, pre-processing, segmentation, Vgg-19.