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Moon phase wavelet model with chain rule neural network classifier for breast cancer detection

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Abstract

Breast cancer is very prevalent and because of its death rate is taken into deliberation to be the second dangerous disease in the world. There is a relentless effort to create more effective techniques for an early and reliable diagnosis. Classical approaches require oncologists to investigate breast lesions to detect and classify different cancer stages. Such manual attempts in many cases are time-

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density, tumour size and thus it reduces the beam hardening problems. Our work has initiated Modified Segmented Stationary Wavelet Transform and Multivariable Chain Rule-Based Back Propagation Neural Network, to improvised the features extraction and classifying the phases of breast cancer by avoiding the under and overfitting problems. The proposed model reduces the dense mass accumulation, beam hardening, and obtains a segmented feature image for feature extraction. The Accuracy, Sensitivity, Specificity, Recall, Precision, prevalence performances of 98.62%, 98.25%, 97.52%, 98.25%, 97.25%, and 25.03% respectively. Hence, the outcome of the proposed model has been showing that our system is a promising and robust method for detecting breast cancer.

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