

Identification of Breast Anomalies Based on Deep Convolutional Neural Networks and K-Nearest Neighbors

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Abstract : Breast cancer (BC) is one of the widespread ailments among females globally. The early prognosis of BC can decrease the mortality rate. Exact findings of benign tumors can avoid unnecessary biopsies and further treatments of patients under investigation. However, due to variations in images, it is a tough job to isolate cancerous cases from normal and benign ones. The machine learning technique is widely employed in the classification of BC pattern and prognosis. In this research, a deep convolution neural network (DCNN) called AlexNet architecture is employed to get more discriminative features from breast tissues. To achieve higher accuracy, K-nearest neighbor (KNN) classifiers are employed as a substitute for the softmax layer in deep learning. The proposed model is tested on a widely used breast image database called MIAS dataset for experimental purposes and achieved 99% accuracy.

Keywords : breast cancer, DCNN, KNN, mammography

Conference Title : ICCTR 2020 : International Conference on Cancer Treatment and Radiology

Conference Location : New York, United States

Conference Dates : April 23-24, 2020