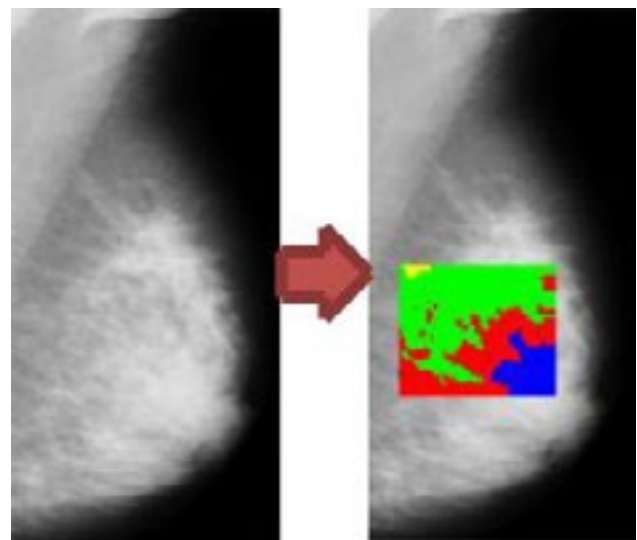


A colored CAD system for breast mammography

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Breast Cancer is the most common and life threatening cancer among women. Mammography is the process of using low-energy X-rays to examine the human breast. It is one of the best examination procedures for early detection of breast cancer. Mammograms are the most difficult of radiological images to interpret since they are of low contrast. Radiologists typically diagnose breast abnormalities and indicate their regions from mammograms. Sometimes due to small masses or breast density radiologists may miss the suspicious regions, so the diagnosis can fail. Therefore, efforts in developing Computer Aided Detection/Diagnosis (CAD) algorithms for mammogram analysis will assist radiologist in images interpretation for accurate diagnosis and efficient detection of cancer cells in the earlier stages. This study developed an algorithm to analyze mammograms automatically with colors, in order to detect the abnormal breast tissue. It proposed the use of the Discrete Wavelet Decomposition (DWD) technique using symlet wavelet to find out this detection. Different sets of proposed combination techniques based on the DWD technique were used in order to obtain the best accuracy in breast tissues classification. The study showed that the combination between the un-decimated DWD technique and the Spatial Gray Level Dependency Matrix (SGLDM) achieved

the best result. It achieved 98.8% accuracy, 95.0% sensitivity. This accuracy has been verified with the ground truth given in the mini-MIAS database. This algorithm will help to spare women unnecessary and stressful biopsies.



Biography

Maha A Elhady Almona Ali has her expertise and passion in improving the mammograms reading. Her algorithm creates new pathways for improving women healthcare and save their lives. She has developed this algorithm after years of experience in research, applied her algorithms on mammograms from sites for scientific researches and mammograms from hospitals. The algorithm is based on wavelet decomposition technique which is a powerful tool for image analysis.

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