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OPERATIVE IMAGE PROCESSING AND SEGMENTATION BASED DEEP LEARNING TECHNIQUES FOR DIAGNOSIS OF BREAST MICRO CALCIFICATION

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ABSTRACT:

Breast cancer is the most occurring type of disease comes in women as well as men. There are various imaging techniques like MRI Magnetic Resonance Imaging, Ultrasound (US) and Computed Tomography (CT) to diagnose the breast cancer. Among this the popular one is mammography which is used to diagnose the disease at the early stage. Classical techniques were time consuming and expensive. In this paper, we proposed that image processing through deep learning. The input dataset for this approach is a sequences of microcalcification images which is used as an input data. The Histogram Matching is used to improve the quality of the image by increase the contrast of the image. The filtering techniques such as Kwahara filter used to remove the noise. Classical segmentation techniques Such as Edge based Segmentation is used to Segment the image. Deep Learning Semantic Segmentation techniques such as U-Net used to segment the image. The deep learning classification techniques such as VGG16 used to classify the images. The classical technique is compare with the Advanced Deep Learning Technique which gives the best result for classification.

Keywords: Breast cancer; Micro calcification, VGG, Kwahara filter, Edge based segmentation.

I. INTRODUCTION:

Breast cancer rapidly increased in all types of countries. This cancer is a deadly disease in women. Accordingly, to the study 25% women suffer from breast cancer. So, Identify the specific region of microcalcification plays a vital role. Mammography is a radiological procedure which has a bundle of photons to be maps with the breast tissues. With the high-resolution detectors, it is possible to detect micro structure with a high atomic Number in the breast. Micro Calcification can be a indicator for breast cancer as it is an expression of cell necrosis. Micro Calcification appear as region with high intensity compare to the background. They are varying in size, shape and density. The scale range from (2 as benign to 5 highly suspicious of malignancy) in the distribution.

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