CS314
Image Processing Practical

Breast Cancer Diagnosis Using Image Enhancement and Segmentation

A PROPOSAL PRESENTED BY

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Introduction:

Breast cancer is the most well-known cancer affecting women worldwide over the course of recent decades, the incidence of breast cancer has risen globally. Studies have demonstrated that the greatest increment will be among women in developing countries, a majority of whom live in the Asian region. The first line diagnosable solution by detecting all lesions of the breast early to help and improving prognosis of cancer. More than one diagnostic modalities are used for breast cancer screening like computed tomography, resonance magnetic imaging and ultrasound. All of these modalities aren't enough to detect all lesions of the breast in spite of their characteristics such as high sensitivity of soft tissue detection. The digital mammography is prevalent in detecting breast lesions than other diagnostic modalities.

There are many types of techniques used for mammography images detection such as edge-based transform, smoothing, noise removal and extraction techniques. Therefore it is necessary to have an efficient method to enhance and improve the mammography images to identify the size of the tumour in breast cancer.

Using my proposed system I would like to implement a method to achieve this task. Those methods help the physician in breast cancer diagnosis and monitor the treatment process.

Domain Overview:

The diagnosis methods examined above is mostly identified with physicians who use mammographic images to identify and diagnose the level of the tumour (breast cancer). Since this task is a bit tough and comes with experience for doctors, the proposed method could become of high use for doctors to calculate the level of cancer and the efficiency of the process would be very high.

Proposed Solution

Aim:

The aim of this proposed system is to enhance and improve the mammography images to identify the size of the tumour in breast cancer.

My Approach:

1. Get mammography images of the breasts.
2. Pre-process the original images to get a clear image.
3. Using python and opencv concepts enhance and segment the image and get the final images.
4. Display the end result to the user
    - Segmented Tumour images
    - Area of the tumour present in the images

References:

1) https://www.google.com/search?q=imaging+to+detect+breast+cancer&tbm=isch&chips=q:imaging+to+detect+breast+cancer,online_chips:mammography&hl=en&sa=X&ved=2ahUKEwieyerrhtbrAhWF-jgGHcUKB1wQ4lYoAXoECAEQFg&biw=1519&bih=674
2) https://www.opencv.org