AAST

[Live cancer detection]

[Image processing]

AAST

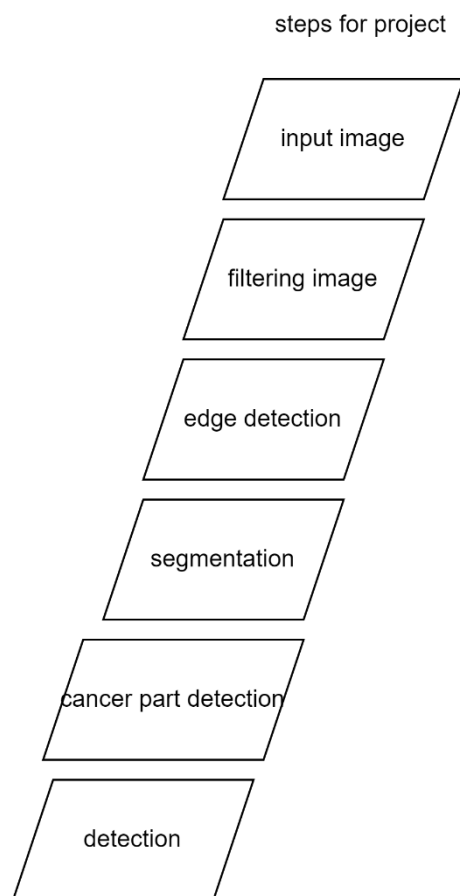AHMED MOHAMED SALEM 20109956 | | ESLAM MOHAMED ARAFA 20102059

Abstract:

- The abnormal growth of cells in the liver causes liver cancer which is also known as hepatic cancer, where, Hepatocellular Carcinoma (HCC) is the most common type of liver cancer which makes up 75% of cases. The detection of this tumour is difficult and mostly found at advanced stage which causes life-threatening issues. Hence it is far essential to discover the tumour at an early stage. So the principle intention of this project is to detect liver cancer at earlier stage using image processing technique. Here the malignant liver tumours are detected from Computed Tomography (CT) images. The image undergoes enhancement using anisotropic diffusion filters and segmented by morphological operations which is simple and easy to work. This operation uses combination of two processes, dilation and erosion. The scope of this propounded technique is to highlight the tumour region present in the Computed Tomography.

Steps:

steps for project

input image

filtering image

edge detection

segmentation

cancer part detection

detection

Dataset:

One dataset that might be useful for liver cancer detection using image processing is the Liver Tumor Segmentation dataset on Kaggle. This dataset contains 130 CT scans for segmentation of the liver as well as tumor lesions. Liver cancer is the fifth most commonly occurring cancer in men and the ninth most commonly occurring cancer in women. There

were over 840,000 new cases in 2018. The liver is a common site of primary or secondary tumor development .

Tools:

1- Image filtering.

Ex: median filter or Gaussian filter

2- Image segmentation.
Ex: thresholding or clustering.

3- Image edge detection.
Ex: Sobel operator or canny edge detector.

4- Image detection.
Ex: by colouring the part of cancer.

5-image processing (up sampling or down sampling).

Ex: bilinear or bicubic interpolation or nearest neighbour.

6-user interface.

Ex: tinker library.

Updates:

We may add other features in our project in the development process such as:

1. **Image compression.**
2. **Image remove watermark.**
3. **Image restoration.**
4. **Image enhancement.**

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References:

https://www.irjet.net/archives/V7/i3/IRJET-V7I3257.pdf