

Lung Cancer Feature Extractions From CT Image:

Features Extraction Image features Extraction stage is an important stage that uses algorithms and techniques to detect and isolate various desired portions or shapes (features) of a given image. To predict the probability of lung cancer presence, the following two methods are used: binarization and masking, both methods are based on facts that strongly related to lung anatomy and information of lung CT imaging.

Binarization Approach

Binarization approach depends on the fact that the number of black pixels is much greater than white pixels in normal lung images, so we started to count the black pixels for normal and abnormal images to get an average that can be used later as a threshold, if the number of the black pixels of a new image is greater than the threshold, then it indicates that the image is normal, otherwise, if the number of the black pixels is less than the threshold, it indicates that the image is abnormal.

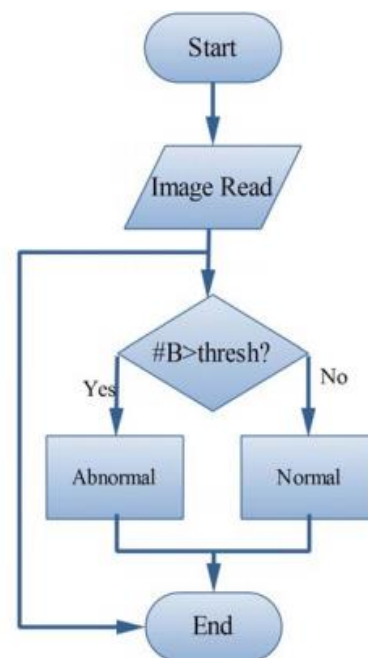
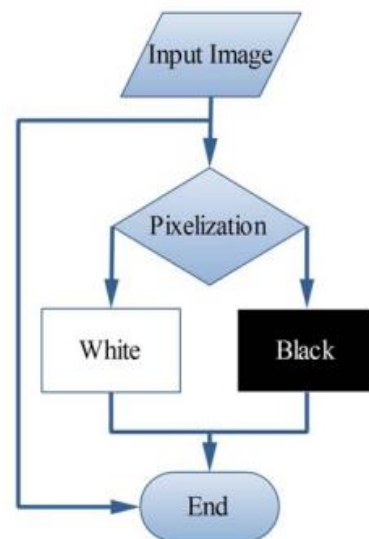


Figure 6. Binarization method procedure **Figure 7.** Binarization check method flowchart

Masking Approach

Masking approach depends on the fact that the masses are appeared as white connected areas inside ROI (lungs), as they increase the percent of cancer presence increase. The appearance of solid blue colour indicates normal case while appearance of RGB masses indicates the presence of cancer, the TAR of this method is (85.7%) and FAR has (14.3%). Figure 8 shows normal and abnormal images resulted by implementing Masking approach using MATLAB.

