Ref-9

Image processing techniques have been used widely across medical fields for tumor detection.This research was divided into three stages including image enhancement, image segmentation and feature extraction. Image enhancement techniques which include spatial domain methods and frequency domain methods, with the aim to improve the interpretability of images for human viewers. It utilizes Gabor filter, Fast Fourier transform and auto enhancement. Gabor filter is a linear filter, defined by harmonic function multiplied by Gaussian function. Whereas Fourier transform works on transform of the image in frequency domain. Image segmentation part is used to locate boundaries and to simplify the image with the goal of assigning labels to every pixel in an image, resulting in a set of segments that cover the entire image. Segmentation algorithms are based on the discontinuity and similarity properties of image intensities. Image segmentation can be done through Thresholding approach or Marker-Controlled Watershed Segmentation approach. Thresholding is a non-linear function which converts an image into a binary image where levels are assigned to pixels above or below a threshold. Marker-driven segmentation technique extracts seeds that indicate presence of objects or background at specific image locations. In feature extraction phase, algorithms and techniques are used to isolate desired portions of an image, usually done by Binarization or Masking approach.

The proposed technique gives promising results compared to other techniques. The main detected features for accurate image comparison are pixel percentage and mask labeling.