CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 CONCLUSION

A medical modality MRI image compression System has been developed and implemented using different types of transform techniques for RoI and non RoI with contourlet and wavelet transforms respectively and Modified Embedded Zerotree Wavelet algorithm used for compression of medical images.

The Acquired images were preprocessed using Median filter to retain the region of interest to extract the features. Median filter provided better output of original image and visual observation of tumors. It is found from the results that Median filter produces good Signal to Noise Ratio outputs and minimum Mean Square Error (MSE) comparable to other methods.

The region of Interest (ROI) has been identified from the preprocessed output using Fuzzy C means algorithm. Region based thresholding technique has been used for segmentation.

The segmented outputs particularly significant and insignificant portions that have been extracted are applied with suitable transform technique for better output. The reduced image size have been obtained using Embedded Zerotree Wavelet Algorithm (EZW). In this present work, instead of using four symbols as was used in original Shapiro algorithm, increased
number of symbols was used based on the significance of the pixel coefficients and an optimal coding efficiency to develop. The study reveals that optimized MEZW with wavelet and contourlet transforms increases the compression efficiency for effective disk storage and enhance effective transmission for teleradiology.

The objective of implementing the compression system has been achieved using denoising, segmentation, and applying appropriate image transforms to the segmented outputs and coding using well known technique to achieve better results. The implementation would help the clinical experts in high quality image storage and aiding effective transmission with limited bandwidth and acceptable time limit i.e.) saves time. So that the health care will become more reliable and improved.

It is concluded that the soft computing techniques enhance the compression of medical modality images for better teleradiology applications.

7.2 FUTURE SCOPE

- In addition to 6 symbols considered in the present work, all the other possible combinations of the pixel coefficients are also encountered for minimization of bits.

- Neural Network models may be incorporated to obtain better compression rate.

- The impact of different types of scanning systems on the proposed work (MEZW) may be examined.