CHAPTER 8

CONCLUSION AND FUTURE WORK

This Chapter concludes the proposed methods of classification and diagnosis of breast cancer using mammographic images by optimization techniques.

8.1 CONCLUSION

The breast cancer analysis and diagnosis is predicted accurately at an early stage using mammographic image it increases the survival rate of patient. An earnest effort has been made to develop methodologies that facilitate to reduce the noise with affecting image enhancement quality. The proposed NSST pre-processing algorithm improves the quality of the extracted pixel which is ensured by the clarity of extraction by visual evaluation parameters in terms of PSNR with the range of 43-53 and MSE with the range 0.017-0.025 are obtained. The RVSM segmentation, detects the suspicious tissues based on the decision function to compute the optimal hyper plane. ANFIS classifier to reduce the computational cost and improves the prediction of tumour based on quality assessment parameters. The RSVM with ANFIS achieves accuracy of about 90.5% with 38 misclassified images, which are relatively high compared to other methods.

The highlight of the segmentation quality has been to reduce of number of iterations EMO algorithm with good search capabilities. The performance of ANFIS was evaluated by diagnosing a number of patients under the supervision of medical practitioner in a private healthcare centre.
EMO with ANFIS method proved to be satisfactory with an accuracy of 94.2% with a minimum of 23 misclassified images.

In order to measure the performance of proposed MTEMO approach, it uses the PSNR, STD and Mean values which assess the segment quality and it shows a marked improvement than the previous methods. LS-SVM classifier obtains this optimal hyper plane by using maximum Euclidean distance to the nearest point. The evaluation results show that the proposed MTEMO with LS-SVM algorithm achieves an accuracy of about 98.2% with 7 misclassified images between 10-45 iteration, which is found to be better when compared to other methods. Hence, classification and diagnosis of breast cancer using mammographic images with optimization method serves as a diagnostic tool which would help the physician make an objective and quantitative analysis of mammograms and reduce the rate of mortality.

8.2 FUTURE WORK

Based on the investigations of this work, the following suggestions are provided for further research.

- Enhanced performance of hybrid algorithm like Fuzzy-Genetic and Evolutionary algorithm and test it on different medical datasets.
- Study the performance with a larger database, increased number of shapes and texture features for classification and advanced training procedure may provide even better results.