CONCLUSION

In this thesis a Intelligent system is designed to diagnose breast cancer 161 pairs of digitized mammogram is used to design the System. A Tracking algorithm is used to eliminate the unwanted things and median filter is used to eliminate the noise (or) high frequency components.

The modified clustering algorithm Fuzzy ‘C’ means (FSDCM) and PSO is used to extracting suspicious region from digital mammogram Image.

In the image segmentation MRF the image pixels have been labeled and their posterior function values have been calculated. The optimum label that minimizes the MAP estimate is computed to segment the image; ABC is implemented. Employed bees are randomly visit all the pixel in the image. The onlooke bees determine the neibour pixel values and compare with the best value of the image Again search the scout bees and discover the best solution as optimum label for image segmentation. During the final iteration, the global minimum has returned the optimum label for image segmentation.

The mammogram textural features have been extracted from the segmented image and they are classified using BPN with ACO. The SRDM textural analysis method is used to extract the features. The feature set has been selected using the feature selection algorithms Genetic Algorithm, PSO and Artificial Bee Colony Optimization. The selected textural features have been given as input to a three-layer Back Propagation Neural network classifier, to classify into benign, malignant or normal.

The BPN classifier has been trained using Jack Knife method. From the viewpoint of classification accuracy and computational complexity, the SRDM is superior to the other
conventional methods. The results from the classifier have been analyzed using ROC analysis. Under the Az curve the performance of the classifier has been evaluated. The overall performance and the results show that the MRF - Artificial Bee Colony Optimization algorithm performs better than the other existing methods comparatively.

The experimental results show that the FSDCM approach produces 0.938, PSO approach produces 0.966 and the MRF-ABC method produces 0.993 as Az value. It is observed that the metaheuristic ABC hybrid with MRF has performed well.