| Sl No | Particulars | | |
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| 3 | PhD Thesis Title | Techniques Towards the detection and classification of clustered microcalcification in digital mammograms | |
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| 5 | Date of Registration for PhD | 19-11-2008 | |
| | University /Branch | University of Mysore /Electronics | |
| 6 | Date of Award of PhD degree | 17th October 2013 | |
| 7 | Brief synopsis<br>The factors that lead to the missed detection of breast cancer include nature of radiographic findings, poor image quality and oversight by the radiologist. 15- 25% of biopsy proven cancerous is not detected for various reasons such as technical problems and abnormalities that are not observable. There are many challenges that determine the efficiency of many CAD systems starting from the preprocessing steps to the classification steps. Most of these systems tend to overemphasize the sensitivity in their detection ability at the expense of specificity. This in many cases result in increased unnecessary biopsies when using such CAD systems. Addition of accurate pre-classifier (classifier) to classify the potential microcalcification into the 'true microcalcifiction' is not done effectively in many CAD systems. This increases in false positive detection. Most of the research work on classification of microcalcification cluster deal with feature extraction and classification using a suitable classifier. Many classification approaches are developed by assuming the underlying training set is evenly distributed. However, those approaches are faced with a severe bias problem when the training set is a highly imbalanced distribution. There are many real-world problems those are faced with severe problem of learning for imbalanced class. The imbalanced data cause classifiers to perform poorly on the minority class. When the data are highly imbalanced many existing methods tend to misclassify the minority class. In the mammogram data set there is an unbalanced distribution of cases between the malignant class and the benign class, since the number of instances of benign class is much higher than the malignant class. When learning from imbalanced datasets the tendency is that the classifier obtains a high predictive accuracy over the majority class, but predict poorly over the minority class. Many CAD systems have not well addressed these issues. We developed a CAD system that solve these issues. | | |