Abstract

Breast cancer is one of the ruinous diseases causing more number of deaths in women. Many efforts are being made to develop efficient techniques to identify the breast cancer at early stage. This paper implements weaver ant colony optimization (WACO) for classifying mammograms. The behavior of weaver ants' to bind the neurons between the layer to make the path to find the output of Neural Network (NN). The unique nest building behavior of Weaver ants' made a considerable remark, NN have proved to be one of the best methods for classification & WACO is used for optimized pathfinding. Each layer of NN is considered as one leaf and the leaves are divided into as many portions equal to the number of neurons, & let ants connect portion of leaf from one layer to another, makes the weight connection in the NN. The task is accomplished by using a NN with a back propagation technique (BPT). To determine the usefulness of WACO based Neural Network (NN) closed nests building behavior made us change the architecture of BPN. Weaver ants show indirect message between ants to find the shortest path between their nest and food sources. These ants ability is to construct nests by weaving together leaves using larval silk. Local Binary Pattern is a method which can be used
extract the features for identifying the breast cancer abnormality by mammogram. Multilayer perceptron (MLP) and support vector machine for mammogram classification and mammogram images are preprocessed to reduce noise and detect the background of the mammogram to extract the required features. This paper implements WACO for classifying mammograms. Here we used MIAS database which describes the mammogram is in which stage benign or normal stage.

References

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22. A.Kaja Mohideen, Department of Applied Mathematics and Computational Sciences, PSG College of Technology, Coimbatore, Tamil Nadu, India

Index Terms

Computer Science
Information Sciences

Keywords

Weaver ant colony optimization, neural networks, Back Propagation technique, Mammogram, Local Binary Pattern