Title:
Breast Cancer Prediction Using Artificial Neural Networks Back Propagation Method

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Abstract:
Research on breast cancer has been widely conducted and previously studied with various methods or algorithms to categorize it into benign and malignant groups. In ANN algorithm, one method called back propagation network is utilized to solve complex problems related to identification, pattern recognition prediction, and so forth. The objective of the present study is to investigate the level of accuracy and performance by ANN back propagation in predicting breast cancer. Several stages for this study are formulating the problem, collecting and processing the Wisconsin breast cancer dataset from the Kaggle site. Designing and creating an ANN algorithm system to classify cancer into malignant and benign, then examining the system to perceive the prediction accuracy, and conclude it. The results of the numerical simulation indicate that the created system of MATLAB R2016a software obtained an accuracy of 96.929% with an error of 3.071% by a combination of training parameters with epoch 1000, learning rate 0.01, goal 0.001, and hidden layer 5.