HIDDEN MARKOV MODEL CLASSIFICATION SCHEME FOR CANCER DETECTION IN IMAGE PROCESSING

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ABSTRACT

The development of detection systems using artificial intelligence techniques has been very helpful in medical computing. The employment of machine learning algorithms has improved the medical health sector drastically. This research work has employed the Hidden Markov Model classification scheme for the detection of breast cancer. During the classification analysis some miss fit were discovered which were discussed in this work with recommendations given. The R statistical programming language has been used in the analysis of this system. The HMM was able to classify completely the non-cancerous (Benign) data with an accuracy of 100% but, fail to completely classify the cancerous data giving an accuracy of 97.1% with a misclassification of 0.028%. The model, generally, did not perform well as it produces a performance accuracy of 37.2% when it was summarized to check for the states correctness. However, the performance accuracy was not a thing to worry about as the HMM documentation has clearly stated that the "Viterbi" function can be unstable or unreliable.

KEYWORDS: Image Processing, Hmm, Artificial Intelligence, R Programming Language, Cancer Detection.

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