

ABSTRACT

IMPLEMENTATION OF RECURSIVE FEATURE ELIMINATION IN SUPPORT VECTOR MACHINE FOR BREAST CANCER CLASSIFICATION

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Breast cancer is a common type of cancer among women around the world. The presence of this cancer can have fatal consequences if not detected early. Therefore, it is important to quickly identify the type of tumor so that the patient can receive appropriate treatment. However, errors in breast cancer diagnosis can arise due to the use of irrelevant features or attributes, which can ultimately lead to misclassification. This study applies the Recursive Feature Elimination (RFE) feature selection method to the WDBC (Wisconsin Diagnostic Breast Cancer) dataset to select the most relevant features in distinguishing benign and malignant tumor classes. SVM (Support Vector Machine) algorithm was used as the classification model with a data sharing ratio of 90:10, resulting in an accuracy of 0.98, precision of 1.00, recall of 0.94, and F1-score of 0.97. The implementation of RFE successfully eliminated 15 out of a total of 30 features without compromising model performance compared to using all features. Thus, RFE proved effective in selecting the best features to improve the efficiency of the breast cancer classification process.

Keywords: *Breast Cancer, Recursive Feature Elimination (RFE), Support Vector Machine (SVM), WDBC Dataset*