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Comparing the Performance of Various Supervised Machine Learning Techniques for Early Detection of Breast Cancer

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Abstract

Cancer is a fatal disease that is constantly changing and affects a vast number of individuals worldwide. At the research level, much work has gone into the creation and improvement of techniques built on data mining approaches that allow for the early identification and prevention of breast cancer. Because of its excellent diagnostic abilities and effective classification, data mining technologies have a reputation in the medical profession that is continually increasing. Data mining and machine learning approaches can aid practitioners in conceiving and developing tools to aid in the early detection of breast cancer. As a result, the goal of this research is to compare different machine learning algorithms in order to determine the best way for detecting breast cancer promptly. This study assessed the classification accuracy of four machine learning algorithms: KNN, Decision Tree, Naive Bayes, and SVM in order to find the best accurate supervised machine learning algorithm that might be used to diagnose breast cancer. Naive Bayes has the maximum accuracy for the supplied dataset, according to the prediction results. This reveals that, when compared to KNN, SVM, and Decision Tree, Naive Bayes can be utilized to predict breast cancer.

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