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**Abstract**

Machine learning techniques can be used to judge important predictor variables in medical datasets. This research applies two machine learning techniques: Support Vector Machines (SVM) and Random Forest to Wisconsin Breast Cancer Database. The two developed models predict whether the patients’ trauma is benign or malignant. The research aims at comparing the performance of these two algorithms through accuracy, precision, recall and f-measure. Results show that SVM yields the best accuracy of 98.8%, which is slightly better than random forest that have accuracy of 96.5%. These results are very competitive and can be used for diagnosis, prognosis, and treatment