

## Diagnosis of diabetes using support vector machines with radial basis function kernels

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### Abstrak

Diabetes is one of the most serious health challenges in both developed and developing countries. Early detection and accurate diagnosis of diabetes can reduce the risk of complications. In recent years, the use of machine learning in predicting disease has gradually increased. A promising classification technique in machine learning is the use of support vector machines in combination with radial basis function kernels (SVM-RBF). In this study, we used SVM-RBF to predict diabetes. The study used a Pima Indian diabetes dataset from the University of California, Irvine (UCI) Machine Learning Repository. The subjects were female and  $\geq 21$  years of age at the time of the index examination. Our experiment design used 10-fold cross-validation. Confusion matrix and ROC were used to calculate performance evaluation. Based on the experimental results, the study demonstrated that SVM-RBF shows promise in aiding diagnosis of Pima Indian diabetes disease in the early stage.