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
≥ 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.