Abstract

In this paper a feature selection algorithm CSSFFS (Constrained search sequential floating forward search) based on SVM is proposed for detecting breast cancer. It is a greedy algorithm with search strategy of constrained search. The aim of this algorithm is to achieve a feature subset with minimal BER (Balanced error rate). This is a hybrid algorithm with the combination
of filters and wrappers. Feature ranking with SVM acts as filters for removing irrelevant features. Then SFFS acts as wrapper which further removes the redundant features yielding the optimal subset of features. WDBC dataset from UCI machine learning depository is used for the experiment. The experiments are conducted in WEKA. After feature selection the accuracy and BER for WDBC dataset is 98.2425 and 0.0226 respectively with 15 features.

Reference

- Weka: A multi-task machine learning software developed by Waikato University.
A Novel SVM based CSSFFS Feature Selection Algorithm for Detecting Breast Cancer

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44:773–784 DOI 10.1007/s11517-006-0079-4
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Index Terms

Computer Science

Pattern Recognition

Key words

SVM breast cancer diagnosis feature selection SFFFS

BER

