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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key words

SVM    breast cancer diagnosis    feature selection    SFFS

Index Terms

Computer Science    Pattern Recognition

44:773–784 DOI 10.1007/s11517-006-0079-4
- Chung-Jui Tu, Li-Yeh Chuang, Jun-Yang Chang, and Cheng-Hong Yang, Member, IAENG, IAENG International Journal of Computer Science, 33:1, IJCS_33_1_18

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