Abstract

This work focuses on the problem of diagnosing the disease in the earlier stage by applying a selection technique based on genetic algorithm and least square support vector machines. The implementation of the technique analyses the accuracy of the classifier as well as the cost effectiveness in the implementation. This technique will help us to diagnose the disease with a limited number of tests that could be performed with minimal amount. We use evolutionary computation which is a subfield of artificial intelligence or computational intelligence that involves combinatorial optimization problems. Evolutionary computation uses iterative progress, such as growth or development in a population. This population is then selected in a guided random search using parallel processing to achieve the desired end. Such processes are often inspired by biological mechanisms of evolution. The obtained results using the genetic algorithms approach show that the proposed method is able to find an appropriate feature subset and SVM classifier achieves better results than other methods.
Reference

- Baresel A: Automating structural tests using evolutionary algorithms,(German) Diploma Theses, Humboldt_University of Berlin, Germany, 2000.

Index Terms

Computer Science  Evolutionary

Computation
### Key words

- Feature selection
- Genetic Algorithm
- Simulated Annealing
- Least Square Support Vector Machines
- classification