Abstract

The healthcare environment is generally perceived as being information rich yet knowledge poor. The healthcare industry collects huge amounts of healthcare data which, unfortunately, are not “mined” to discover hidden information. However, there is a lack of effective analysis tools to discover hidden relationships and trends in data. The information technology may
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provide alternative approaches to Osteoporosis disease diagnosis. In this study, we examine
the potential use of classification techniques on a massive volume of healthcare data,
particularly in prediction of patients that may have Osteoporosis Disease (OD) through its risk
factors. For this purpose, we propose to develop a new solution approach based on Random
Forest (RF) decision tree to identify the osteoporosis cases. There has been no research in
using the afore-mentioned algorithm for Osteoporosis patients’ prediction. The reduction of the
attributes consists to enumerate dynamically the optimal subsets of the reduced attributes of
high interest by reducing the degree of complexity. A computer-aided system is developed for
this purpose. The study population consisted of 2845 adults. The performance of the proposed
model is analyzed and evaluated based on set of benchmark techniques applied in this
classification problem.

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Index Terms

Computer Science

Artificial Intelligence

Key words

Osteoporosis Disease

Multi-Classifier Decision Trees

Prediction

features reduction