Fixed parameters Support Vector Regression for outlier detection

ABSTRACT

The support vector machine (SVM) is currently a very popular technique of outlier detection as it is a robust model and does not require the data to be of full rank. With a view to evaluate the approximate relationship among the variables, there is necessity to detect outliers that are commonly present in most of natural phenomena before beginning to construct the model. Both of the standard support vector machine(SVM) for regression and modified SV Regression ($\mu -\varepsilon - SVR$) techniques are effective for outlier detection in case of non-linear functions with multi-dimensional inputs; nevertheless, these methods still suffer from a few issues, such as the setting of free parameters and the cost of time. In this paper, we suggest a practical technique for outlier detection by utilising fixed parameters to build SVR model, which reduces computational costs. We apply this technique to real data, as well as simulation data in order to evaluate its efficiency.