Abstract

One of the major problems in support vector machines (SVM) is the selection of optimal parameters that can establish an efficient SVM to achieve better output with an acceptable level of accuracy. In this paper, we propose a hybrid classification algorithm (GSVM) based on the Gravitational Search Algorithm (GSA) and support vector machines (SVM) to optimize the accuracy of the SVM classifier by detecting the subset of the best values of the kernel parameters for the SVM classifier. In the GSVM classifier, the GSA is introduced as an optimization technique to optimize the SVM parameters. The GSVM algorithm was evaluated using the KDD CUP 99 data set and compared to the outperformance of the original SVM algorithms. The results show that the performance of the GSVM algorithm has a higher detection rate with lower false positive rate.

References


Index Terms

Computer Science  
Security
Keywords

Network Intrusion Detection, ensemble clusters, unlabeled data.