Abstract

Nowadays, Information, which is managed by Database Management System, is deemed as an asset for any of the organizations. Malicious attacks over a computer network can decrease security and trust of a system which may lead to various threats, which will be mitigated by introducing Intrusion Detection System. Emerging Intrusion detection systems (IDS) cannot improve the Integrity and in order to offer higher security for the confidential data with information integrity, an Artificial Bee Colony algorithm based Intrusion Detection system (ABC-IDS) is proposed. Clustering, Mining and Classification are the three major phases of this proposed system. The primary step is clustering the given datasets which helps to recover the quality of the datasets by partitioning the quantity in a cluster. Clustering is worked out by the clustering algorithm, Fuzzy C-Means and the second phase Mining is completed on the clustered datasets in order to get mined results by successfully mining the given datasets with the aid of Frequent Item set mining. The generated rules in the mining process get optimized by the usage of Artificial Bee Colony algorithm. After acquiring optimized mined results, the
Classification phase is carried out by using Artificial Neural Network classifier, which classifies the input dataset into Intrusion or Non-Intrusion packets. This proposed method is implemented in MATLAB platform over DARPA dataset and then it is analyzed for its accuracy of Intrusion detection rate and Non-Intrusion detection rate, which will also evidently improve the consistency and reliability of the ABC-IDS system. Moreover, comparison of the proposed methodology with the state-of-art works is done to prove the improvement in information integrity in the proposed method. Hence, the optimum Integrity is increased by this research by the increase of its intrinsic attributes of accuracy, consistency and reliability.

References


Index Terms
Keywords

Data Mining, Intrusion Detection System, Fuzzy C-Means, Frequent Item Set Mining, Artificial Bee Colony Algorithm, Artificial Neural Network.