**ABSTRACT**

Finding an appropriate set of features from data of high dimensionality for building an accurate classification model is challenging in recent years. In the preceding research, Acceleration Particle Swarm Optimization–Support Vector Machine (APSO-SVM) and Acceleration Artificial Bee Colony –Improved Transductive SVM (AABC-ITSVM) is introduced to handle the feature selection process over big data. However these methods are issues with computational complexity and accuracy of dataset. To avoid the above mentioned issues, in the proposed system, AABC-Artificial Neural Network (ANN) is proposed. This research contains modules are such as preprocessing, feature selection and classification. In preprocessing, k-Nearest Neighbor algorithm is applied which is used to handle the noise data efficiently. The size of the dataset is reduced significantly. Then these features are taken into feature selection process. In this research, AABC algorithm is used for performing feature selection. AABC optimization algorithm is used to select the important and relevant features from the preprocessed data. Then classification is done by using Artificial Neural Network (ANN) and it classifies more accurate classification results for the given large volume of dataset. ANN contains three layers are such as input, hidden and output layer. It is proposed to improve the time complexity by using neurons. The experimental result proves that the proposed system gives superior performance in terms of higher accuracy, recall, precision, f-measure, and lower time complexity by using AABC-ANN approach.