**ABSTRACT**

In the recent years the volume of data has been growing tremendously with the development in the information technology. Hugh dimensionality would be one of the major challenges faced by people working in research with big data as a high dimensionality that happens while a dataset comprises of a big number of features (autonomous attributes). For resolving this issue, often researchers make use of a feature selection step for identification and removal of irrelevant features (not helpful in the classification of the data) and repetitive features (yield the same information like other features). Acceleration Artificial Bee Colony- Artificial Neural Network (AABC-ANN) has been introduced in the preceding research for handling the feature selection process over the big data. Computational complexity and inaccuracy of dataset remains as a problem for these methods. Enhanced Particle Swarm Optimization with Genetic Algorithm – Modified Artificial Neural Network (EPSOGA -MANN) is proposed in the proposed methodology for avoiding the above mentioned issues. Modules’ including preprocessing, feature selection and classification has been included in this research process. Fuzzy C Means (FCM) denotes the clustering algorithm which is used to handle the noise information efficiently in preprocessing. Issues like missing data, repetitiveness and error data are resolved effectively. Discarding of irrelevant features leads to the significant decrease in size of the structured and semi structured dataset. These features are then considered for the feature selection process. Feature selection process is carried out by means of EPSOGA algorithm optimally in this research. More important and relevant features are selected by EPSOGA optimization algorithm from the as it provides classification results with more accuracy for the huge volume of dataset given. Input, hidden and output layer are the three layers of MANN. It is introduced for improving the time complexity by means of neurons. This proposed methodology is more suitable for handling the big data principles such as volume, velocity and variety. The proposed model provides superior performance as show in experimental results in terms of superior accuracy, recall, precision, f-measure, and lesser time complexity by means of EPSOGA –MANN approach