**Abstract**

Classification is one among the hot research topic in the field of data mining. Classically classification task represents the data to be categorized based on its features or characteristics. This proposed research work aims in developing genetic based support vector machine classifier. Support vector machine is a type of supervised machine learning technique and once when the dataset is given as input it performs the classification task by itself. The proposed classifier aims in improving the classification accuracy of the support vector machine by making use genetic algorithm. Genetic algorithm is used in order to perform fuzzy association rule extraction, candidate rule pre-screening, rule selection and lateral tuning. The proposed classifier has been tested onnamely PIMA Indian diabetes to classify the occurrence of heart disease among the patients. Performance metrics classification accuracy are taken for comparison of the proposed genetic based support vector machine classifier (GSVM) with SVM classification algorithm. Results showed that the proposed GSVM classifier gives better classification accuracy than that of support vector machine