**Abstract**

Classification is the major research topic in data mining. Typically classification represents the data to be categorized based on its features or characteristics. This proposed research work aims in developing fuzzy logic based improved 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 of fuzzy logic. The proposed classifier has been tested on two different datasets namely PIMA Indian diabetes dataset and Z-AlizadehSani dataset in order to classify the occurrence of heart disease among the patients. Performance metrics sensitivity, specificity and classification

accuracy are taken for comparison of the proposed fuzzy logic based improved support vector machine classifier (F-ISVM) with several classification algorithms. Results showed that the proposed F-ISVM classifier gives better classification accuracy than that of support vector machine, naive bayes, neural networks, sequential minimal optimization (SMO) and bagging SMO classifiers.