Artificial based on the corresponding measured data.conclusionsin this

Artificial neural network (ANN)A customized neural network is adopted here. A network first needs to be trained before using it for prediction. We have used back-propagation algorithm as the learning algorithm as they are especially capable of solving prediction problem. A total of 15, 000 data points were utilized during training session and 50 data points were used during testing session. A suitable configuration has to be chosen for the best performance of the network. Out of the different configurations tested, two hidden layer with 50 and 25 hidden neurons produced the best result.

The log sigmoid function was employed as an activation function. Suitable numbers of epochs have to be assigned to overcome the problem of over fitting and under fitting of data. Adaptive Neuro Fuzzy Inference System (ANFIS)ANFIS was originally founded by JSR Jang. ANFIS is a fuzzy system trained on the set of input and output data by an algorithm derived from the theory of Artificial Neural Networks. This algorithm is a hybrid training algorithm based on back propagation and the least squares approach.

Advantages of ANFIS consist of smoothness property from the fuzzy principle and adaptability property from the neural networks training structure. We have used Subtractive Clustering algorithm in ANFIS for training the dataset which resolves the problem of dimensionality and often doesn’t require the optimization from ANFIS commands. Comparison of ANN and ANFIS modelsResults from the two models are presented in this section to compare theprediction accuracy. The same training and testing data sets were used to train and test both models to extract fair conclusions from the comparison results. Mean square error (MSE), root mean square error (RMSE) were calculated based on the corresponding measured data.

ConclusionsIn this paper we showed the ability of ANFIS and the ANN in predicting the Employee turnover and potential candidates who are going to leave the firm. The results showed that the RMSE, MSE for the training data were 0. 088, 0. 007 for the ANN model, and 0. 160, 0. 025 for the ANFIS model.

As for unseen data, the RMSE, MSE were 0. 8, 0. 89 for the ANN and 0. 5, 0. 25 for the ANFIS model. The ANFIS model, however, was more sensitive than the ANN model for the unseen data set and is performing better for the same.

We can conclude that ANN model can fit the output better compared to the ANFIS model for the unseen data set. But ANFIS is better than ANN in generalization and prediction of unseen data.