Abstract

Artificial Neural Network (ANN) which is designed to mimic the human brain have been used in the literature for identifying variable(s) that is(are) responsible for out-of-control signal and the training algorithms have played a significant role in the identification of the aberrant variable(s). In this paper the effect of three algorithms in the training of ANN for pattern recognition of bivariate process is studied. Situations in which the algorithms performed satisfactorily with respect to recognition accuracy (in percentages), epochs and MSE were identified. The result of study shows that the Levenberg-Marquardt (trainlm) is the best algorithm for pattern recognition of bivariate manufacturing process in terms of recognition accuracy and the resilient backpropagation (trainrp) is best in terms of speed and mean square error performance.

References

Effect of Training Algorithms on the Performance of ANN for Pattern Recognition of Bivariate Process

Kotz S, Johnson NL, Read CR (eds). Wiley: New York, pp 110-122,
IIE Transactions 38(8), pp 647–657
Technometrics 27, pp 285-292

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