

Turkish Journal of Electrical Engineering & Computer Sciences

Turkish Journal

of

Control Chart Pattern Recognition Using Artificial Neural Networks

Electrical Engineering &
Computer Sciences

Şeref SAĞIROĞLU

Computer Engineering Department, Faculty of Engineering,
Erciyes University, 38039, Kayseri-TURKEY



e-mail: SS@erciyes.edu.tr

Erkan BEŞDOK

Geodesy and Photogrammetry Department, Faculty of Engineering,
Erciyes University, Kayseri-TURKEY

Mehmet ERLER

Electronic Engineering Department, Faculty of Engineering,
Erciyes University, Kayseri-TURKEY

 [Keywords](#)
 [Authors](#)



elektrik@tubitak.gov.tr

[Scientific Journals Home Page](#)

Abstract: Precise and fast control chart pattern (CCP) recognition is important for monitoring process environments to achieve appropriate control and to produce high quality products. CCPs can exhibit six types of pattern: normal, cyclic, increasing trend, decreasing trend, upward shift and downward shift. Except for normal patterns, all other patterns indicate that the process being monitored is not functioning correctly and requires adjustment. This paper describes a new type of neural network for speeding up the training process and to compare three training algorithms in terms of speed, performance and parameter complexity for CCP recognition. The networks are multilayered perceptrons trained with a resilient propagation, backpropagation (BP) and extended delta-bar-delta algorithms. The recognition results of CCPs show the BP algorithm is accurate and provides better and faster results.

Key Words: Multilayered Perceptrons, Resilient Propagation, Backpropagation, Extended Delta-Bar-Delta, Control Chart Pattern Recognition.

Turk. J. Elec. Eng. & Comp. Sci., **8**, (2000), 137-146.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Elec. Eng. & Comp. Sci.,vol.8,iss.2.](#)