

“Adaptive Control Technique Using Multilayer Feedforward Neural Networks”

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Abstract

This paper presents a new method for implementing adaptive controllers using multilayer feedforward neural networks (MFNN). The controlled process is approximated at each sampling time by a linear time-invariant (LTI) model. The proposed adaptive controller is a combination of a parameter estimation algorithm to estimate the parameters of the process and an adaptation algorithm for the connection weights of the neural network. An adaptation algorithm to adjust the connection weights of the neural network has been derived. Simulation results are included to demonstrate the feasibility and the adaptive properties of the proposed controller.