

Self Organizing Neural Networks for the Identification Problem

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Abstract: This work introduces a new method called Self Organizing Neural Network (SONN) algorithm and demonstrates its use in a system identification task. The algorithm constructs the network, chooses the neuron functions, and adjusts the weights. It is compared to the Back-Propagation algorithm in the identification of the chaotic time series. The results shows that SONN constructs a simpler, more accurate model. requiring less training data and epochs. The algorithm can be applied and generalized to applications as a classifier.