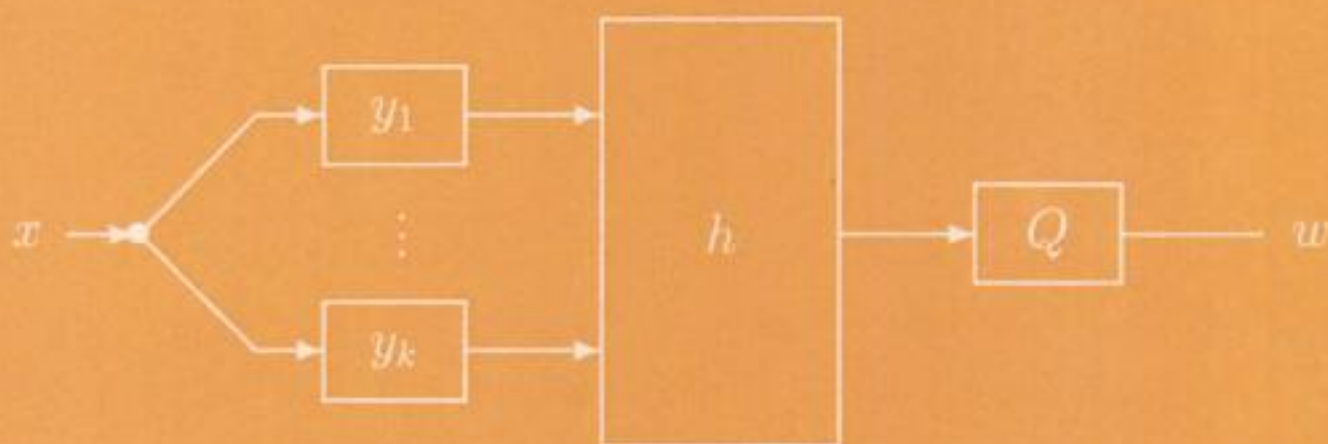


*A Volume in the Wiley Series on Adaptive and Learning Systems for
Signal Processing, Communications, and Control*
Simon Haykin, Series Editor

Nonlinear Dynamical Systems

Feedforward Neural Network
Perspectives



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Nonlinear Dynamical Systems: Feedforward Neural Network Perspectives, 2001, 298 pages, Irwin W. Sandberg, 0471349119, 9780471349112, John Wiley & Sons, 2001.

The first truly up-to-date look at the theory and capabilities of nonlinear dynamical systems that take the form of feedforward neural network structures. Considered one of the most important types of structures in the study of neural networks and neural-like networks, feedforward networks incorporating dynamical elements have important properties and are of use in many applications. Specializing in experiential knowledge, a neural network stores and expands its knowledge base via strikingly human routes—through a learning process and information storage involving interconnection strengths known as synaptic weights. In *Nonlinear Dynamical Systems: Feedforward Neural Network Perspectives*, six leading authorities describe recent contributions to the development of an analytical basis for the understanding and use of nonlinear dynamical systems of the feedforward type, especially in the areas of control, signal processing, and time series analysis. Moving from an introductory discussion of the different aspects of feedforward neural networks, the book then addresses: * Classification problems and the related problem of approximating dynamic nonlinear input-output maps * The development of robust controllers and filters * The capability of neural networks to approximate functions and dynamic systems with respect to risk-sensitive error * Segmenting a time series. It then sheds light on the application of feedforward neural networks to speech processing, summarizing speech-related techniques, and reviewing feedforward neural networks from the viewpoint of fundamental design issues. An up-to-date and authoritative look at the ever-widening technical boundaries and influence of neural networks in dynamical systems, this volume is an indispensable resource for researchers in neural networks and a reference staple for libraries.

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