A new series: Physics of Neural Networks
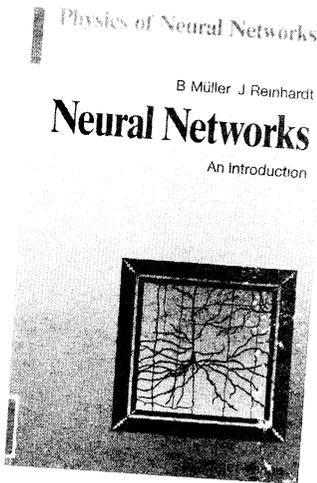
B. Müller, J. Reinhardt

Neural Networks

An Introduction

1990. XIII, 266 pp. 83 figs. (including a 5 1/4-inch MS DOS diskette) (Physics of Neural Networks) Hardcover DM 78,- ISBN 3-540-52380-4

The concepts of neural-network models and techniques of parallel distributed processing are comprehensively presented in a three-step approach: After a brief overview of the neural structure of the brain and the history of neural-network modeling, the reader is introduced to "neural" information processing, i.e. associative memory, perceptrons, feature-sensitive networks, learning strategies, and practical applications. – Part 2 covers more advanced subjects such as spin glasses, the mean-field theory of the Hopfield model, and the space of interactions in neural networks. – The self-contained final part discusses seven programs that provide practical demonstrations of neural-network models and their learning strategies. Ample opportunity is given to improve and modify the source codes. The software is included on a 5 1/4-inch MS-DOS diskette and can be run using Borland's TURBO-C 2.0 compiler, the Microsoft C compiler (5.0), or compatible compilers.
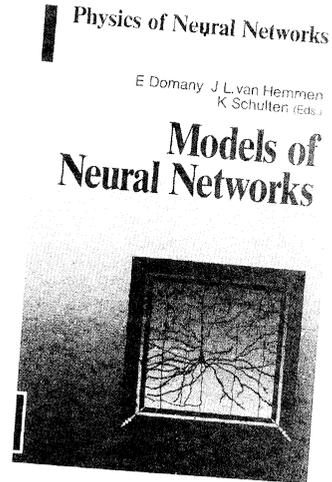
E. Domany, J. L. van Hemmen, K. Schulten (Eds.)

Models of Neural Networks

1991. XVI, 345 pp. 78 figs. (Physics of Neural Networks) Hardcover DM 78,- ISBN 3-540-51109-1

Models of Neural Networks responds to the urgent need for timely and comprehensive reviews in a multidisciplinary, rapidly moving field of research. The book starts out with an extensive introduction to the notions used in the subsequent chapters, which are all centered around the theme of **collective** phenomena in neural networks: dynamics and storage capacity of networks of formal neurons with symmetric or asymmetric couplings, learning algorithms, temporal association, structured data (software), and structural nets (hardware). Both style and level make this book most useful for advanced students and researchers looking for an accessible survey of today's theory of neural networks.
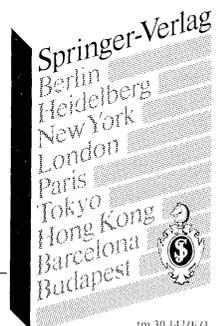
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