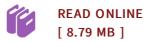# Neural Networks and Animal Behavior Monographs in Behavior and Ecology

By Magnus Enquist

Princeton University Press. Paperback. Book Condition: New. Paperback. 224 pages. Dimensions: 9.1in. x 6.0in. x 0.8in.How can we make better sense of animal behavior by using what we know about the brain This is the first book that attempts to answer this important question by applying neural network theory. Scientists create Artificial Neural Networks (ANNs) to make models of the brain. These networks mimic the architecture of a nervous system by connecting elementary neuron-like units into networks in which they stimulate or inhibit each others activity in much the same way neurons do. This book shows how scientists can employ ANNs to analyze animal behavior, explore the general principles of the nervous systems, and test potential generalizations among species. The authors focus on simple neural networks to show how ANNs can be investigated by math and by computers. They demonstrate intuitive concepts that make the operation of neural networks more accessible to nonspecialists. The first chapter introduces various approaches to animal behavior and provides an informal introduction to neural networks, their history, and their potential advantages. The second chapter reviews artificial neural networks, including biological foundations, techniques, and applications. The following three chapters apply neural networks to such topics as...

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