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Autore	Zaknich Anthony
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; Acknowledgments; Foreword; Preface; 1. Introduction; 1.1 Motivation for ANNs; 1.2 ANN Definitions and Main Types; 1.3 Specific ANN Models; 1.4 ANN Black Box Model; 1.5 ANN Implementation; 1.6 When To Use an ANN; 1.7 How To Use an ANN 1.8 General Applications 1.9 Pattern Recognition Examples; 1.9.1 Sheep Eating Phase Identification from Jaw Sounds; 1.9.2 Particle Isolation in SEM Images; 1.9.3 Oxalate Needle Detection in Microscope Images ; 1.10 Function Mapping and Filtering Examples 1.10.1 Water Level from Resonant Sound Analysis 1.10.2 Nonlinear Signal Filtering; 1.11 Motor Control Example; 1.12 ANN Summary; References; 2. A Brief Historical Overview; 2.1 ANN History to 1970; 2.1.1 Key Events prior to 1970; 2.2 ANN History after 1970 2.2.1 Key Events after 1970 to the Mid 1980's 2.2.2 Developments after the Mid 1980's; 2.2.3 Nonparametric Learning From Finite Data; 2.3 Reasons for the Resurgence of Interest in ANNs; 2.4 Historical Summary ; References; 3. Basic Concepts; 3.1 The Basic Model of the Neuron 3.2 Activation Functions 3.3 Topologies; 3.4 Learning; 3.4.1 A Basic Supervised Learning Algorithm; 3.4.2 A Basic Unsupervised Learning

	Algorithm; 3.5 The Basic McCulloch Pitts and Perceptron Models; 3.6 Vectors Spaces and Matrix Models; 3.6.1 ANN Classifiers 3.6.2 Vectors and Feature Spaces
Sommario/riassunto	This book provides a thorough theoretical and practical introduction to the application of neural networks to pattern recognition and intelligent signal processing. It has been tested on students, unfamiliar with neural networks, who were able to pick up enough details to successfully complete their masters or final year undergraduate projects. The text also presents a comprehensive treatment of a class of neural networks called common bandwidth spherical basis function NNs, including the probabilistic NN, the modified probabilistic NN and the general regression. Contents