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| Nota di bibliografia    | Includes bibliographical references at the end of each chapters and index.  |
| Nota di contenuto       | <p>""Preface""; ""Acknowledgments""; ""Contents""; ""Part I Introductory Chapter""; ""Recent Advances of Neural Networks Models and Applications: An Introduction""; ""1 Introduction""; ""2 The Data Issue""; ""3 Feature Selection""; ""4 Classification Schema""; ""5 Contents of This Book""; ""References""; ""Part II Models""; ""Simulink Implementation of Belief Propagation in Normal Factor Graphs""; ""1 Introduction""; ""2 Simulink Factor Graph Library""; ""2.1 Variable""; ""2.2 Diverter Block""; ""2.3 Factor Block""; ""3 Flow Control""; ""4 Characters Recognition Example""; ""4.1 A Simulation""</p> <p>""5 Conclusion""""Time Series Analysis by Genetic Embedding and Neural Network Regression""; ""1 Introduction""; ""2 Time Series Forecasting: Embedding for State Space Reconstruction""; ""3 Time Series Forecasting: Function Approximation Method""; ""4 Genetic Embedding for Prediction""; ""5 Illustrative Tests""; ""6 Conclusions""; ""Significance-Based Pruning for Reservoir's Neurons in Echo State Networks""; ""1 Introduction""; ""2 Echo State Networks""; ""3 Significance-Based Pruning for the Reservoir's Connections""; ""4 Extending Pruning to the Reservoir's Neurons""</p> <p>""5 Experimental Validation""""5.1 Experimental Setup""; ""5.2</p> |

Generalization Performance"; "5.3 Analysis of the Reservoirs Topology"; "6 Conclusions"; "Online Selection of Functional Links for Nonlinear System Identification"; "1 Introduction"; "2 A Brief Review on the Nonlinear FLAF"; "3 The -law Proportionate FLAF"; "4 Experimental Results"; "5 Conclusion"; "A Continuous-Time Spiking Neural Network Paradigm"; "1 Introduction"; "2 Neuron Model"; "3 Network Topology and Plasticity Rules"; "3.1 CNN-like Topology"; "3.2 Synaptic Plasticity Rules"; "4 Event-Driven Simulations"; "4.1 Event-Driven Approach for the Network Simulation"; "4.2 Simulation Results"; "5 Conclusions"; "Online Spectral Clustering and the Neural Mechanisms of Concept Formation"; "1 Introduction"; "2 Spectral Clustering"; "3 Online and Incremental Versions of Spectral Clustering"; "4 An Approximated, Online Spectral Clustering Method"; "5 Experimental Results"; "6 A Neural Implementation"; "7 Concept Formation"; "8 Conclusions and Future Work"; "Part III Pattern Recognition"; "Machine Learning-Based Web Documents Categorization by Semantic Graphs"; "1 Introduction"; "2 Document Categorization"; "3 Scoring"; "4 Semantic Graph"; "5 Experimental Results"; "6 Conclusions"; "Web Spam Detection Using Transductive Inductive Graph Neural Networks"; "1 Introduction"; "2 The Graph Neural Network Model"; "3 The WEBSPAMa??UK2006 Dataset"; "4 Experimental Results"; "5 Conclusions"; "References"; "Hubs and Communities Identification in Dynamical Financial Networks"; "1 Introduction"; "2 Financial Communities Identification"; "3 Measuring Evolving Communities Stability Using Fuzzy Rand Index"

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Sommario/riassunto

This book collects research works that exploit neural networks and machine learning techniques from a multidisciplinary perspective. Subjects covered include theoretical, methodological and computational topics which are grouped together into chapters devoted to the discussion of novelties and innovations related to the field of Artificial Neural Networks as well as the use of neural networks for applications, pattern recognition, signal processing, and special topics such as the detection and recognition of multimodal emotional expressions and daily cognitive functions, and bio-inspired memristor-based networks. Providing insights into the latest research interest from a pool of international experts coming from different research fields, the volume becomes valuable to all those with any interest in a holistic approach to implement believable, autonomous, adaptive, and context-aware Information Communication Technologies.

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