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Nota di contenuto	Preface xv -- 1 Application Fields and Fundamental Merits 1 -- Akira Hirose -- 1.1 Introduction 1 -- 1.2 Applications of Complex-Valued Neural Networks 2 -- 1.3 What is a complex number? 5 -- 1.4 Complex numbers in feedforward neural networks 8 -- 1.5 Metric in complex domain 12 -- 1.6 Experiments to elucidate the generalization characteristics 16 -- 1.7 Conclusions 26 -- 2 Neural System Learning on Complex-Valued Manifolds 33 -- Simone Fiori -- 2.1 Introduction 34 -- 2.2 Learning Averages over the Lie Group of Unitary Matrices 35 -- 2.3 Riemannian-Gradient-Based Learning on the Complex Matrix-Hypersphere 41 -- 2.4 Complex ICA Applied to Telecommunications 49 -- 2.5 Conclusion 53 -- 3 N-Dimensional Vector Neuron and Its Application to the N-Bit Parity Problem 59 -- Tohru Nitta -- 3.1 Introduction 59 -- 3.2 Neuron Models with High-Dimensional Parameters 60 -- 3.3 N-Dimensional Vector Neuron 65 -- 3.4 Discussion 69 -- 3.5 Conclusion 70 -- 4 Learning Algorithms in Complex-Valued Neural Networks using Wirtinger Calculus 75 -- Md. Faijul Amin and Kazuyuki Murase -- 4.1 Introduction 76 -- 4.2 Derivatives in Wirtinger Calculus 78 -- 4.3 Complex Gradient 80 -- 4.4 Learning Algorithms for Feedforward CVNNs 82 -- 4.5 Learning

Algorithms for Recurrent CVNNs 91 -- 4.6 Conclusion 99 -- 5  
Quaternionic Neural Networks for Associative Memories 103 -- Teijiro  
Isokawa, Haruhiko Nishimura, and Nobuyuki Matsui -- 5.1 Introduction  
104 -- 5.2 Quaternionic Algebra 105 -- 5.3 Stability of Quaternionic  
Neural Networks 108 -- 5.4 Learning Schemes for Embedding Patterns  
124 -- 5.5 Conclusion 128 -- 6 Models of Recurrent Clifford Neural  
Networks and Their Dynamics 133 -- Yasuaki Kuroe -- 6.1  
Introduction 134 -- 6.2 Clifford Algebra 134 -- 6.3 Hopfield-Type  
Neural Networks and Their Energy Functions 137 -- 6.4 Models of  
Hopfield-Type Clifford Neural Networks 139 -- 6.5 Definition of Energy  
Functions 140 -- 6.6 Existence Conditions of Energy Functions 142 --  
6.7 Conclusion 149 -- 7 Meta-cognitive Complex-valued Relaxation  
Network and its Sequential Learning Algorithm 153 -- Ramasamy  
Savitha, Sundaram Suresh, and Narasimhan Sundararajan.  
7.1 Meta-cognition in Machine Learning 154 -- 7.2 Meta-cognition in  
Complex-valued Neural Networks 156 -- 7.3 Meta-cognitive Fully  
Complex-valued Relaxation Network 164 -- 7.4 Performance  
Evaluation of McFCRN: Synthetic Complexvalued Function  
Approximation Problem 171 -- 7.5 Performance Evaluation of McFCRN:  
Real-valued Classification Problems 172 -- 7.6 Conclusion 178 -- 8  
Multilayer Feedforward Neural Network with Multi-Valued Neurons for  
Brain-Computer Interfacing 185 -- Nikolay V. Manyakov, Igor  
Aizenberg, Nikolay Chumerin, and Marc M. Van Hulle -- 8.1 Brain-  
Computer Interface (BCI) 185 -- 8.2 BCI Based on Steady-State Visual  
Evoked Potentials 188 -- 8.3 EEG Signal Preprocessing 192 -- 8.4  
Decoding Based on MLMVN for Phase-Coded SSVEP BCI 196 -- 8.5  
System Validation 201 -- 8.6 Discussion 203 -- 9 Complex-Valued B-  
Spline Neural Networks for Modeling and Inverse of Wiener Systems  
209 -- Xia Hong, Sheng Chen and Chris J. Harris -- 9.1 Introduction  
210 -- 9.2 Identification and Inverse of Complex-Valued Wiener  
Systems 211 -- 9.3 Application to Digital Predistorter Design 222 --  
9.4 Conclusions 229 -- 10 Quaternionic Fuzzy Neural Network for  
View-invariant Color Face Image Recognition 235 -- Wai Kit Wong, Gin  
Chong Lee, Chu Kiong Loo, Way Soong Lim, and Raymond Lock -- 10.1  
Introduction 236 -- 10.2 Face Recognition System 238 -- 10.3  
Quaternion-Based View-invariant Color Face Image Recognition 244 --  
10.4 Enrollment Stage and Recognition Stage for Quaternion- Based  
Color Face Image Correlator 255 -- 10.5 Max-Product Fuzzy Neural  
Network Classifier 260 -- 10.6 Experimental Results 266 -- 10.7  
Conclusion and Future Research Directions 274 -- References 274 --  
Index 279.

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## Sommario/riassunto

Presents the latest advances in complex-valued neural networks by demonstrating the theory in a wide range of applications Complex-valued neural networks is a rapidly developing neural network framework that utilizes complex arithmetic, exhibiting specific characteristics in its learning, self-organizing, and processing dynamics. They are highly suitable for processing complex amplitude, composed of amplitude and phase, which is one of the core concepts in physical systems to deal with electromagnetic, light, sonic/ultrasonic waves as well as quantum waves, namely, electron.

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