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| Nota di contenuto | Contents ; Foreword ; Preface ; Chapter I Introduction ; S1.1 Classification of fuzzy neural networks ; S1.2 Fuzzy neural networks ; S1.3 Puzzified neural networks ; 1.3.1 Learning algorithm for regular FNN's ; 1.3.2 Universal approximation of regular FNN's S1.4 Fuzzy systems and fuzzy inference networks 1.4.1 Fuzzy systems ; 1.4.2 Fuzzy inference networks ; S1.5 Fuzzy techniques in image restoration ; 1.5.1 Crisp nonlinear filters ; 1.5.2 Fuzzy filters ; S1.6 Notations and preliminaries ; S1.7 Outline of the topics of the chapters References Chapter II Fuzzy Neural Networks for Storing and Classifying ; S2.1 Two layer max-min fuzzy associative memory ; 2.1.1 FAM with threshold ; 2.1.2 Simulation example ; S2.2 Fuzzy 6-learning algorithm ; ; 2.2.1 FAM's based on 'V - \wedge ' ; 2.2.2 FAM's |

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| based on 'V - *' | |
| S2.3 BP learning algorithm of FAM's | 2.3.1 |
| Two analytic functions | ; 2.3.2 BP learning |
| algorithm | ; S2.4 Fuzzy ART and fuzzy ARTMAP |
| ; 2.4.1 ART1 architecture | ; 2.4.2 Fuzzy ART |
| ; 2.4.3 Fuzzy ARTMAP | ; 2.4.4 Real examples |
| ; References | |
| Chapter III Fuzzy Associative Memory-Feedback Networks | |
| S3.1 Fuzzy Hopfield networks | ; 3.1.1 Attractor |
| and attractive basin | ; 3.1.2 Learning |
| algorithm based on fault-tolerance | |
| ; 3.1.3 Simulation example | ; S3.2 Fuzzy Hopfield |
| network with threshold | ; 3.2.1 Attractor |
| and stability | |
| 3.2.2 Analysis of fault-tolerance | |

Sommario/riassunto

This book systematically synthesizes research achievements in the field of fuzzy neural networks in recent years. It also provides a comprehensive presentation of the developments in fuzzy neural networks, with regard to theory as well as their application to system modeling and image restoration. Special emphasis is placed on the fundamental concepts and architecture analysis of fuzzy neural networks. The book is unique in treating all kinds of fuzzy neural networks and their learning algorithms and universal approximations, and employing simulation examples which are carefully designed to h