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Nota di contenuto	Design and Modeling of Anti Wind Up PID Controllers -- A Hybrid Global Optimization Algorithm: Particle Swarm Optimization in Association with a Genetic Algorithm -- Towards Robust Performance Guarantees for Models Learned from High-Dimensional Data -- Expert-Based Method of Integrated Waste Management Systems for Developing Fuzzy Cognitive Map -- Leukocyte Detection through an Evolutionary Method -- PWARX model identification based on clustering approach -- Supplier quality evaluation using a fuzzy multi criteria

decision making approach -- Concept Trees: Building Dynamic Concepts from Semi-Structured Data using Nature-Inspired Methods -- Swarm Intelligence Techniques and Their Adaptive Nature with Applications -- Signal Based Fault Detection and Diagnosis for rotating electrical machines: Issues and Solutions -- Modelling Of Intrusion Detection System Using Artificial Intelligence -Evaluation Of Performance Measures -- Enhanced Power System Security Assessment through Intelligent DecisionTrees -- Classification of Normal and Epileptic Seizure EEG Signals based on Empirical Mode Decomposition -- A Rough Set Based Total Quality Management Approach in Higher Education -- Iterative Dual Rational Krylov and Iterative SVD-Dual Rational Krylov Model Reduction for Switched Linear Systems -- Household Electrical Consumption Modeling through Fuzzy Logic Approach -- Modeling,Identification and Control of irrigation station with sprinkling: Takagi- Sugeno approach -- Review and Improvement of Several Optimal Intelligent Pitch Controllers and Estimator of WECS via Artificial Intelligent Approaches -- Secondary and Tertiary Structure Prediction of Proteins: A Bioinformatic Approach -- Approximation of Optimized Fuzzy Logic Controller for Shunt Active Power Filter.-Soft Computing Techniques For Optimal Capacitor Placement -- Advanced Metaheuristics-based Approach for Fuzzy Control Systems Tuning -- Robust Estimation Design for Unknown Inputs Fuzzy Bilinear Models: Application to Faults Diagnosis -- Unit Commitment Optimization Using Gradient-Genetic algorithm and Fuzzy logic approaches -- Impact of Hardware/Software Partitioning and MicroBlaze FPGA Configurations on the Embedded Systems Performances -- A Neural Approach to Cursive Handwritten Character Recognition using Features Extracted from Binarization Technique -- System Identification Technique and Neural Networks for Material Lifetime Assessment Application -- Measuring Software Reliability: A Trend using Machine Learning Techniques -- Hybrid Metaheuristic Approach for Scheduling of Aperiodic OS Tasks.

Sommario/riassunto

The book offers a snapshot of the theories and applications of soft computing in the area of complex systems modeling and control. It presents the most important findings discussed during the 5th International Conference on Modelling, Identification and Control, held in Cairo, from August 31-September 2, 2013. The book consists of twenty-nine selected contributions, which have been thoroughly reviewed and extended before their inclusion in the volume. The different chapters, written by active researchers in the field, report on both current theories and important applications of soft-computing. Besides providing the readers with soft-computing fundamentals, and soft-computing based inductive methodologies/algorithms, the book also discusses key industrial soft-computing applications, as well as multidisciplinary solutions developed for a variety of purposes, like windup control, waste management, security issues, biomedical applications and many others. It is a perfect reference guide for graduate students, researchers and practitioners in the area of soft computing, systems modeling and control.