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Soggetti	Artificial intelligence Computers Algorithms Database management Information storage and retrieval Bioinformatics Artificial Intelligence Computation by Abstract Devices Algorithm Analysis and Problem Complexity Database Management Information Storage and Retrieval
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Applications of Artificial Immune Systems (Technical Stream) -- Negative Selection Algorithm for Aircraft Fault Detection -- A Hierarchical Immune Network Applied to Gene Expression Data -- Artificial Immune Regulation (AIR) for Model-Based Fault Diagnosis -- Optimal Circuit Design Using Immune Algorithm -- Conceptual, Formal, and Theoretical Frameworks (Conceptual Stream) -- Towards a Conceptual Framework for Artificial Immune Systems -- Immunologic Responses Manipulation of AIS Agents -- Optima, Extrema, and Artificial Immune Systems -- Artificial Immune Systems for Robotics

(Technical Stream) -- An Immuno Control Framework for Decentralized Mechatronic Control -- AIS Based Robot Navigation in a Rescue Scenario -- Reactive Immune Network Based Mobile Robot Navigation -- Emerging Metaphors (Conceptual Stream) -- A Fractal Immune Network -- Nootropia: A User Profiling Model Based on a Self-Organising Term Network -- Towards Danger Theory Based Artificial APC Model: Novel Metaphor for Danger Susceptible Data Codons -- Online Negative Databases -- Special Session on Immunoinformatics -- Definition of MHC Supertypes Through Clustering of MHC Peptide Binding Repertoires -- BcePred: Prediction of Continuous B-Cell Epitopes in Antigenic Sequences Using Physico-chemical Properties -- Integration of Immune Models Using Petri Nets -- MHC Class I Epitope Binding Prediction Trained on Small Data Sets -- Theoretical and Experimental Studies on Artificial Immune Systems (Technical Stream) -- Convergence Analysis of a Multiobjective Artificial Immune System Algorithm -- A Comparison of Immune and Neural Computing for Two Real-Life Tasks of Pattern Recognition -- An Artificial Immune System Based Visual Analysis Model and Its Real-Time Terrain Surveillance Application -- Exploring the Capability of Immune Algorithms: A Characterization of Hypermutation Operators -- Future Applications (Conceptual Stream) -- Exploiting Immunological Properties for Ubiquitous Computing Systems -- A Robust Immune Based Approach to the Iterated Prisoner's Dilemma -- Artificial Innate Immune System: An Instant Defence Layer of Embryonics -- Immune System Approaches to Intrusion Detection -- A Review -- Multimodal Search with Immune Based Genetic Programming -- Networks (Technical Stream) -- An Artificial Immune System for Misbehavior Detection in Mobile Ad-Hoc Networks with Virtual Thymus, Clustering, Danger Signal, and Memory Detectors -- Developing Efficient Search Algorithms for P2P Networks Using Proliferation and Mutation -- Modelling (Conceptual Stream) -- A Game-Theoretic Approach to Artificial Immune Networks -- Modelling Immune Memory for Prediction and Computation -- Immunity Through Swarms: Agent-Based Simulations of the Human Immune System -- Distinguishing Properties of Artificial Immune Systems (Conceptual Stream) -- Studies on the Implications of Shape-Space Models for Idiotypic Networks -- Exploiting Parallelism Inherent in AIRS, an Artificial Immune Classifier -- An Overview of Computational and Theoretical Immunology.

Sommario/riassunto

Artificial Immune Systems have come of age. They are no longer an obscure computerscience technique, worked on by a couple of farsighted research groups. Today, researchers across the globe are working on new computer algorithms inspired by the workings of the immune system. This vigorous field of research investigates how immunobiology can assist our technology, and along the way is beginning to help biologists understand their unique problems. AIS is now old enough to understand its roots, its context in the research community, and its exciting future. It has grown too big to be confined to special sessions in evolutionary computation conferences. AIS researchers are now forming their own community and identity. The International Conference on Artificial Immune Systems is proud to be the premiere conference in the area. As its organizers, we were honored to have such a variety of innovative and original scientific papers presented this year. ICARIS 2004 was the third international conference dedicated entirely to the field of Artificial Immune Systems (AIS). It was held in Catania, on the beautiful island of Sicily, Italy, during September 13–16, 2004. While hosting the conference, the city of Catania gave the participants the opportunity to enjoy the richness of its historical and cultural atmosphere and the beauty of its natural

resources, the sea, and the Etna volcano.
