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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) -- Use of an Artificial Immune System for Job Shop Scheduling -- An Artificial Immune System for Multimodality Image Alignment -- Bioinformatics Data Analysis Using an Artificial Immune Network -- An Investigation of the Negative Selection Algorithm for Fault Detection in Refrigeration Systems -- Future Applications of Artificial Immune Systems (Conceptual Stream) -- A Role for Immunology in “Next Generation” Robot Controllers -- Immunologic Control Framework for Automated Material Handling -- An Immune Learning Classifier Network for Autonomous Navigation -- Software Vaccination: An Artificial Immune System Approach to Mutation Testing -- Special Session on

Immunocomputing -- Memory and Selectivity in Evolving Scale-Free Immune Networks -- Biomolecular Immunocomputing -- Signal Processing by an Immune Type Tree Transform -- Index Design by Immunocomputing -- Emerging Metaphors (Conceptual Stream) -- Immune-Based Framework for Exploratory Bio-information Retrieval from the Semantic Web -- An Artificial Immune System Approach to Semantic Document Classification -- Danger Theory: The Link between AIS and IDS? -- A Danger Theory Inspired Approach to Web Mining -- Augmentations of Artificial Immune System Algorithms (Technical Stream) -- Meta-stable Memory in an Artificial Immune Network -- Improved Pattern Recognition with Artificial Clonal Selection? -- Improving SOSDM: Inspirations from the Danger Theory -- Theory of Artificial Immune Systems (Conceptual Stream) -- Artificial Immune Systems and the Grand Challenge for Non-classical Computation -- A Paratope Is Not an Epitope: Implications for Immune Network Models and Clonal Selection -- Revisiting the Foundations of Artificial Immune Systems: A Problem-Oriented Perspective -- Complementary Dual Detectors for Effective Classification -- Representations and Operators (Technical Stream) -- The Crossover Closure and Partial Match Detection -- A Randomized Real-Valued Negative Selection Algorithm -- Dynamic Function Optimisation: Comparing the Performance of Clonal Selection and Evolution Strategies -- The Effect of Antibody Morphology on Non-self Detection -- Plenary Session -- The Immune System as a Cognitive System: New Perspectives for Information Technology Society.

Sommario/riassunto

In many ways, our immune systems are as complex as our brains. They learn, predict, remember and adapt, protecting us from the maelstrom of pathogens that infect us daily. Computer Science frequently takes inspiration from the seemingly endless capabilities of natural systems. It should therefore be no s- prise that, like the ?eld of Arti?cial Neural Networks inspired from brains, we now have a vigorous ?eld of research known as Arti?cial Immune Systems (AIS), inspired by our own immune systems. Although still relatively new, the previous 10 years has seen the paradigm of AIS rapidly establish itself as an important biological metaphor. Researchers all over the world fruitfully exploit “immunological ideas” in many di?erent ways to provide mechanisms for tackling a wide variety of applications. In this volume we present the proceedings of ICARIS 2003, the 2nd Int- national Conference on Arti? cial Immune Systems. This was the second int- national conference entirely dedicated to the ?eld, and followed the extremely successful ? rst conference held in Canterbury, UK in 2002. The number and - versityofpapersinthisyear’sconferenceisatributetotheever- growingnumber ofresearchersinthearea, andrepresentativeofthesolidfoundationofworkthat now exists in this area. The range of topics considered is wide. For example, at one end of the spectrum we see a selection of papers providing a necessary t- oretical grounding for the ?eld. At the other end, we have an exciting range of applications to real-world problems, covering, for example, job-shop scheduling and fault detection in refrigeration systems.