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Nota di contenuto	Immune System Modelling -- A Petri Net Model of Granulomatous Inflammation -- Defining a Simulation Strategy for Cancer Immunocompetence -- Theoretical Artificial Immune Systems -- Clonal Selection from First Principles -- Density Preservation and Vector Quantization in Immune-Inspired Algorithms -- Immune Inspired Information Filtering in a High Dimensional Space -- On the Benefits of Aging and the Importance of Details -- Classifying in the Presence of

Uncertainty: A DCA Perspective -- Insights into the Antigen Sampling Component of the Dendritic Cell Algorithm -- FDCM: A Fuzzy Dendritic Cell Method -- Modular RADAR: An Immune System Inspired Search and Response Strategy for Distributed Systems -- Applied Artificial Immune Systems -- A Faster Clonal Selection Algorithm for Expensive Optimization Problems -- An Information-Theoretic Approach for Clonal Selection Algorithms -- Antibodies with Adaptive Radius as Prototypes of High-Dimensional Datasets -- GAIS: A Gaussian Artificial Immune System for Continuous Optimization -- An Immune Algorithm for Minimum Interference Channel Assignment in Multi-radio Wireless Mesh Networks -- A Developmental and Immune-Inspired Dynamic Task Allocation Algorithm for Microprocessor Array Systems -- An Immunological Algorithm for Doping Profile Optimization in Semiconductors Design -- QML-AiNet: An Immune-Inspired Network Approach to Qualitative Model Learning -- Biomedical Article Classification Using an Agent-Based Model of T-Cell Cross-Regulation -- An Artificial Immune System Approach for Artificial Chemistries Based on Set Rewriting -- Further Experimentation with Hybrid Immune Inspired Network Intrusion Detection -- Danger Theory and Intrusion Detection: Possibilities and Limitations of the Analogy -- Electronic Fraud Detection for Video-on-Demand System Using Hybrid Immunology-Inspired Algorithms -- PerAda Workshop on Novel Applications of Bio-inspired Computing to Pervasive Adaptive Systems -- Converging Bio-inspired Robotics and Socio-inspired Agents for Intelligent Transportation Systems -- On Homeostasis in Collective Robotic Systems -- Can a Developmental AIS Provide Immunity to a Multi-cellular Robotics System? -- Using Virtual Embryogenesis for Structuring Controllers -- Towards Self-aware PerAda Systems -- Is Receptor Degeneracy Suitable for Automatic Response Decisions in Ad Hoc Networks? -- Biochemically-Inspired Emergent Computation -- Nature-Inspired Adaptivity in Communication and Learning -- Symbiotic Cognitive Networks: A Proposal.

Sommario/riassunto

Arti?cial immune systems (AIS) is a diverse and maturing area of research that bridges the disciplines of immunology and computation. The original research impetus in AIS had a clear focus on applying immunological principles to c- putationalproblemsinpracticaldomainssuchascomputersecurity, datamining and optimization. As the ?eld has matured, it has diversi?ed such that we now see a growing interest in formalizing the theoretical properties of earlier - proaches, elaborating underlying relationships between applied computational models and those from theoretical immunology, as well a return to the roots of the domain in which the methods of computer science are being applied to - munological modelling problems. Following the trends in the ?eld, the ICARIS conference intends to provide a forum for all these perspectives. The 9th InternationalConference on AIS (ICARIS 2010)built on the success of previous years, providing a convenient vantage point for broader re? ection as it returned to Edinburgh, the venue of the Second ICARIS in 2003. This time, the conference was hosted by Edinburgh Napier University at its Craiglockhart Campus, recently reopened after extensive refurbishment which has resulted in a stunning building and state-of-the-art facilities. The extent to which the ?eld has matured over the preceding years is clear; a substantial track of theor- ical research now underpins the discipline. The applied stream has expanded in its outlook, and has examples of AIS algorithms being applied across a wide spectrum of practicalproblems,rangingfrom sensornetworksto semi-conductor design.