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	Altri autori (Persone)	IjspeertAuke Jan MasuzawaToshimitsu KusumotoShinji
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	Nota di contenuto	Invited Talks -- Design of Synthetic Gene-Metabolic Circuits -- Morphological Computation: Connecting Brain, Body, and Environment -- Single Molecule Nano-Bioscience -- Robotics -- Evolving the Walking Behaviour of a 12 DOF Quadruped Using a Distributed Neural Architecture -- Robot Control: From Silicon Circuitry to Cells -- Networking I -- Proposal and Evaluation of a Cooperative Mechanism for Pure P2P File Sharing Networks -- Resilient Multi-path Routing

Based on a Biological Attractor Selection Scheme -- Packet Classification with Evolvable Hardware Hash Functions – An Intrinsic Approach -- Biological Systems -- Emergence of Two Power-Laws in Evolution of Biochemical Network; Embedding Abundance Distribution into Topology -- Microbial Interaction in a Symbiotic Bioprocess of Lactic Acid Bacterium and Diary Yeast -- Responses of Fluctuating Biological Systems -- Analysis of Fluctuation in Gene Expression Based on Continuous Culture System -- Self-organization -- Bio-inspired Computing Machines with Self-repair Mechanisms -- Perspectives of Self-adapted Self-organizing Clustering in Organic Computing -- MOVE Processors That Self-replicate and Differentiate -- Evolutionary Computation -- The Evolutionary Emergence of Intrinsic Regeneration in Artificial Developing Organisms -- Evaluation of Fundamental Characteristics of Information Systems Based on Photonic DNA Computing -- Hybrid Concentration-Controlled Direct-Proportional Length-Based DNA Computing for Numerical Optimization of the Shortest Path Problem -- Modeling and Imaging -- Modeling of Trees with Interactive L-System and 3D Gestures -- New Vision Tools from the Comparative Study of an "Old" Psychophysical and a "Modern" Computational Model -- Photonic Information Techniques Based on Compound-Eye Imaging -- Attractor Memory withSelf-organizing Input -- Networking II -- Bio-inspired Replica Density Control in Dynamic Networks -- Improving the Robustness of Epidemic Communication in Scale-Free Networks -- On Updated Data Dissemination Exploiting an Epidemic Model in Ad Hoc Networks -- Posters -- Modeling of Epidemic Diffusion in Peer-to-Peer File-Sharing Networks -- A High-Throughput Method to Quantify the Structural Properties of Individual Cell-Sized Liposomes by Flow Cytometry -- A User Authentication System Using Schema of Visual Memory -- A Consideration of Application of Attractor Selection to a Real-Time Production Scheduling -- Bio-inspired Organization for Multi-agents on Distributed Systems -- m-ActiveCube; Multimedia Extension of Spatial Tangible User Interface -- Biologically Inspired Adaptive Routing by Mimicking Enzymic Feedback Control Mechanism in the Cell -- An Interest-Based Peer Clustering Algorithm Using Ant Paradigm.

| Sommario/riassunto | This book contains 30 articles and three abstracts of invited talks presented at The Second International Workshop on Biologically Inspired Approaches for Advanced Information Technology (Bio-ADIT 2006) held at Senri Life Science Center, Osaka, Japan, on January 26–27, 2006. Bio-ADIT 2006 follows the s- cess of the ?rst workshop Bio-ADIT 2004, held at the Swiss Federal Institute of Technology, Lausanne (EPFL), Switzerland, in January 2004. The workshop is intended to provide an e?ective forum for original research results in the ?eld of bio-inspired approaches to advanced information technologies. It also serves to foster the connection between biological paradigms and solutions to building the next-generation information systems. In particular, the aim of the workshop is to explore and discuss how biologically inspired approaches can help in - signing the next generation of information systems which, like their biological counterparts, will be capable of adaptation, self-organization, replication, and self-repair. Wewerehonoredtohavetheparticipationasinvitedspeakersofthreeleading researchers in this ?eld: James C. Liao, Rolf Pfeifer, and Toshio Yanagida. The invitedtalksdealtwiththeveryinterestingsubjectsofbio-inspiredapproachesto information systems, and provided stimulating ideas to the workshop attendees to pursue further research in this exciting ?eld. The articles cover a large range of topics including networking, robotics, evolutionary computation, neural computation, |

biochemical networks, recon- urable hardware, and machine vision. The contributions range from basic - search in biology and in information technology, to more application-oriented developments in software and in hardware.