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	Nota di contenuto	High Performance Implementation of an FPGA-Based Sequential DT-CNN -- HANNA: A Tool for Hardware Prototyping and Benchmarking of ANNs -- Improvement of ANNs Performance to Generate Fitting Surfaces for Analog CMOS Circuits -- Wavelet Network for Nonlinearities Reduction in Multicarrier Systems -- Improved Likelihood

Ratio Test Detector Using a Jointly Gaussian Probability Distribution Function -- Performance Monitoring of Closed-Loop Controlled Systems Using dFasArt -- Normalising Brain PET Images -- Automatic Segmentation of Single and Multiple Neoplastic Hepatic Lesions in CT Images -- Biometric and Color Features Fusion for Face Detection and Tracking in Natural Video Sequences -- Identifying Major Components of Pictures by Audio Encoding of Colours -- Towards a Semi-automatic Situation Diagnosis System in Surveillance Tasks -- An Implementation of a General Purpose Attentional Mechanism for Artificial Organisms -- Optimal Cue Combination for Saliency Computation: A Comparison with Human Vision -- The Underlying Formal Model of Algorithmic Lateral Inhibition in Motion Detection -- Novel Strategies for the Optimal Registration of Biomedical Images -- Characterization of Artificial Muscles Using Image Processing -- Segmentation of Sequences of Stereoscopic Images for Modelling Artificial Muscles -- A Support Vector Method for Estimating Joint Density of Medical Images -- Segmentation of Moving Objects with Information Feedback Between Description Levels -- Knowledge-Based Road Traffic Monitoring -- Comparison of Classifiers for Human Activity Recognition -- A Multi-robot Surveillance System Simulated in Gazebo -- Context Data to Improve Association in Visual Tracking Systems -- Automatic Control of Video Surveillance Camera Sabotage -- Complex Permittivity Estimation by Bio-inspired Algorithms for Target Identification Improvement -- Context Information for Human Behavior Analysis and Prediction -- Road Sign Analysis Using Multisensory Data -- Video Tracking Association Problem Using Estimation of Distribution Algorithms in Complex Scenes -- Context Information for Understanding Forest Fire Using Evolutionary Computation -- Feed-Forward Learning: Fast Reinforcement Learning of Controllers -- An Adaptive Michigan Approach PSO for Nearest Prototype Classification -- Behavioural Modeling by Clustering Based on Utility Measures -- Two-Stage Ant Colony Optimization for Solving the Traveling Salesman Problem -- Solving Dial-a-Ride Problems with a Low-Level Hybridization of Ants and Constraint Programming -- Profitability Comparison Between Gas Turbines and Gas Engine in Biomass-Based Power Plants Using Binary Particle Swarm Optimization -- Combining the Best of the Two Worlds: Inheritance Versus Experience -- Towards the Automatic Learning of Reflex Modulation for Mobile Robot Navigation -- Evolving Robot Behaviour at Micro (Molecular) and Macro (Molar) Action Level -- Discretization of ISO-Learning and ICO-Learning to Be Included into Reactive Neural Networks for a Robotics Simulator -- Towards Automatic Camera Calibration Under Changing Lighting Conditions Through Fuzzy Rules -- Social Interaction in Robotic Agents Emulating the Mirror Neuron Function -- Integration of Stereoscopic and Perspective Cues for Slant Estimation in Natural and Artificial Systems -- An Approach to Visual Scenes Matching with Curvilinear Regions -- Supervised dFasArt: A Neuro-fuzzy Dynamic Architecture for Maneuver Detection in Road Vehicle Collision Avoidance Support Systems -- Neuro-fuzzy Based Maneuver Detection for Collision Avoidance in Road Vehicles -- The Coevolution of Robot Behavior and Central Action Selection -- WiSARD and NSP for Robot Global Localization -- Design and Implementation of an Adaptive Neuro-controller for Trajectory Tracking of Nonholonomic Wheeled Mobile Robots -- Sharing Gaze Control in a Robotic System -- An AER-Based Actuator Interface for Controlling an Anthropomorphic Robotic Hand -- Tackling the Error Correcting Code Problem Via the Cooperation of Local-Search-Based Agents -- Strategies for Affect-Controlled Action-Selection in Soar-RL -- An Agent-Based Decision

Support System for Ecological-Medical Situation Analysis -- A Meta-ontological Framework for Multi-agent Systems Design -- Design of an Agent-Based System for Passenger Transportation Using PASSI -- The INGENIAS Methodology for Advanced Surveillance Systems Modelling -- Propos: A Dynamic Web Tool for Managing Possibilistic and Probabilistic Temporal Constraint Networks -- BIRD: Biomedical Information Integration and Discovery with Semantic Web Services -- Neural Networks to Predict Schooling Failure/Success -- Application of Genetic Algorithms for Microwave Oven Design: Power Efficiency Optimization -- Application of Neural Networks to Atmospheric Pollutants Remote Sensing -- Air Pollutant Level Estimation Applying a Self-organizing Neural Network -- Application of Genetic Algorithms in the Determination of Dielectric Properties of Materials at Microwave Frequencies -- Putting Artificial Intelligence Techniques into a Concept Map to Build Educational Tools -- A Preliminary Neural Model for Movement Direction Recognition Based on Biologically Plausible Plasticity Rules -- Classification of Biomedical Signals Using a Haar 4 Wavelet Transform and a Hamming Neural Network.

Sommario/riassunto

The two-volume set LNCS 4527 and LNCS 4528 constitutes the refereed proceedings of the Second International Work-Conference on the Interplay between Natural and Artificial Computation, IWINAC 2007, held in La Manga del Mar Menor, Spain in June 2007. The 126 revised papers presented are thematically divided into two volumes; the first includes all the contributions mainly related with theoretical, conceptual and methodological aspects linking AI and knowledge engineering with neurophysiology, clinics and cognition. This second volume contains all the contributions connected with biologically inspired methods and techniques for solving AI and knowledge engineering problems in different application domains.