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Nota di contenuto	EvoBIO Contributions -- A Memetic Algorithm for Protein Structure Prediction in a 3D-Lattice HP Model -- An Improved Genetic Algorithm for the Sequencing by Hybridization Problem -- Evolutionary Search of

Thresholds for Robust Feature Set Selection: Application to the Analysis of Microarray Data -- Evolving Regular Expression-Based Sequence Classifiers for Protein Nuclear Localisation -- Analysis of Proteomic Pattern Data for Cancer Detection -- Self-Adaptive Scouting—Autonomous Experimentation for Systems Biology -- An Improved Grammatical Evolution Strategy for Hierarchical Petri Net Modeling of Complex Genetic Systems -- Two-Step Genetic Programming for Optimization of RNA Common-Structure -- Evolutionary Algorithms for Optimal Control in Fed-Batch Fermentation Processes -- Discrete Branch Length Representations for Genetic Algorithms in Phylogenetic Search -- Iteratively Inferring Gene Regulatory Networks with Virtual Knockout Experiments -- Multiple Sequence Alignment Using SAGA: Investigating the Effects of Operator Scheduling, Population Seeding, and Crossover Operators -- Constructing Microbial Consortia with Minimal Growth Using a Genetic Algorithm -- EvoCOMNET Contributions -- 2-Objective Optimization of Cells Overlap and Geometry with Evolutionary Algorithms -- A Genetic Algorithm for Telecommunication Network Design -- A GA/Heuristic Hybrid Technique for Routing and Wavelength Assignment in WDM Networks -- Ant Colony Optimization for the Maximum Edge-Disjoint Paths Problem -- Using Genetic Programming to Design Broadcasting Algorithms for Manhattan Street Networks -- A Scenario-Based Approach to Protocol Design Using Evolutionary Techniques -- EvoHOT Contributions -- A Slicing Structure Representation for the Multi-layer Floorplan Layout Problem -- Disjoint Sum of Product Minimization by Evolutionary Algorithms -- Genetic Algorithms to Improve Mask and Illumination Geometries in Lithographic Imaging Systems -- Multi-objective Genetic Manipulator Trajectory Planner -- Exploiting HW Acceleration for Classifying Complex Test Program Generation Problems -- Evolutionary Design Space Exploration for Median Circuits -- EvoIASP Contributions -- Genetic Optimization of Morphological Filters with Applications in Breast Cancer Detection -- Image Segmentation by a Genetic Fuzzy c-Means Algorithm Using Color and Spatial Information -- Bond-Issuer Credit Rating with Grammatical Evolution -- Using GAs to Create a Waveguide Model of the Oral Vocal Tract -- Vision-Based Hand Motion Capture Using Genetic Algorithm -- Top-Down Evolutionary Image Segmentation Using a Hierarchical Social Metaheuristic -- Multi-objective Sensor Planning for Efficient and Accurate Object Reconstruction -- An Algorithm for Segmenting Gaseous Objects on Images -- Evolution Strategies Approach for the Solution of an Inverse Problem in Near-Field Optics -- A Watermark Sharing Scheme to High Quality Halftone Images with Genetic Algorithms -- Using Genetic Programming for Character Discrimination in Damaged Documents -- Evolutionary Algorithm-Based Local Structure Modeling for Improved Active Shape Model -- Multiclass Object Classification Using Genetic Programming -- Program Size and Pixel Statistics in Genetic Programming for Object Detection -- Intrinsic Evolvable Hardware in Digital Filter Design -- EvoMUSART Contributions -- Swarm Granulator -- Aesthetic Video Filter Evolution in an Interactive Real-Time Framework -- Generative Art: Fuzzy Polygon Clipping in Program Generated Line Oriented Drawings -- Tilings of Sequences of Co-evolved Images -- Adaptive Critics for Evolutionary Artists -- Automated Aesthetic Selection of Evolutionary Art by Distance Based Classification of Genomes and Phenomes Using the Universal Similarity Metric -- Improvisational Media Space: Architecture and Strategies for Evolution -- The Virtual Ecosystem as Generative Electronic Art -- Aesthetic Evolution of L-Systems Revisited -- EvoSTOC Contributions -- Multi-swarm Optimization in Dynamic

Environments -- Evolutionary Algorithms for Stochastic Arc Routing Problems -- A Hierarchical Particle Swarm Optimizer for Dynamic Optimization Problems -- Constructing Dynamic Optimization Test Problems Using the Multi-objective Optimization Concept -- Competitive Goal Coordination in Automatic Parking -- Evolutionary Bayesian Network Dynamic Planner for Game RISK.

Sommario/riassunto

Evolutionary Computation (EC) deals with problem solving, optimization, and machine learning techniques inspired by principles of natural evolution and - netics. Just from this basic de?nition, it is clear that one of the main features of theresearchcommunityinvolvedinthestudyofitstheoryandinitsapplications is multidisciplinarity. For this reason, EC has been able to draw the attention of an ever-increasing number of researchers and practitioners in several ?elds. In its 6-year-long activity, EvoNet, the European Network of Excellence in Evolutionary Computing, has been the natural reference and incubator for that multifaceted community. EvoNet has provided logistic and material support for thosewhowerealreadyinvolvedinECbut,inthe?rstplace,ithashadacritical role in favoring the signi?cant growth of the EC community and its interactions with longer-established ones. The main instrument that has made this possible has been the series of events, ?rst organized in 1998, that have spanned over both theoretical and practical aspects of EC. Ever since 1999, the present format, in which the EvoWorkshops, a collection of workshops on the most application-oriented aspects of EC, act as satellites of a core event, has proven to be very successful and very representative of the multi-disciplinarity of EC. Up to 2003, the core was represented by EuroGP, the main European event dedicated to Genetic Programming. EuroGP has been joined as the main event in 2004 by EvoCOP, formerly part of EvoWorkshops, which has become the European Conference on Evolutionary Computation in Combinatorial Optimization.