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| Nota di contenuto | EvoCOMPLEX Contributions -- Coevolutionary Dynamics of Interacting Species -- Evolving Individual Behavior in a Multi-agent Traffic Simulator -- On Modeling and Evolutionary Optimization of Nonlinearly Coupled Pedestrian Interactions -- Revising the Trade-off between the |

Number of Agents and Agent Intelligence -- Sexual Recombination in Self-Organizing Interaction Networks -- Symbiogenesis as a Mechanism for Building Complex Adaptive Systems: A Review -- EvoGAMES Contributions -- Co-evolution of Optimal Agents for the Alternating Offers Bargaining Game -- Fuzzy Nash-Pareto Equilibrium: Concepts and Evolutionary Detection -- An Evolutionary Approach for Solving the Rubik's Cube Incorporating Exact Methods -- Evolution of Artificial Terrains for Video Games Based on Accessibility -- Evolving Behaviour Trees for the Commercial Game DEFCON -- Evolving 3D Buildings for the Prototype Video Game Subversion -- Finding Better Solutions to the Mastermind Puzzle Using Evolutionary Algorithms -- Towards a Generic Framework for Automated Video Game Level Creation -- Search-Based Procedural Content Generation -- Evolution of Grim Trigger in Prisoner Dilemma Game with Partial Imitation -- Evolving a Ms. PacMan Controller Using Grammatical Evolution -- Evolving Bot AI in UnrealTM -- Evolutionary Algorithm for Generation of Entertaining Shinro Logic Puzzles -- Social Learning Algorithms Reaching Nash Equilibrium in Symmetric Cournot Games -- Multiple Overlapping Tiles for Contextual Monte Carlo Tree Search -- EvoIASP Contributions -- A CNN Based Algorithm for the Automated Segmentation of Multiple Sclerosis Lesions -- A Hybrid Evolutionary Algorithm for Bayesian Networks Learning: An Application to Classifier Combination -- Towards Automated Learning of Object Detectors -- Markerless Multi-view Articulated Pose Estimation Using Adaptive Hierarchical Particle Swarm Optimisation -- Hand Posture Recognition Using Real-Time Artificial Evolution -- Comparing Cellular and Panmictic Genetic Algorithms for Real-Time Object Detection -- Bloat Free Genetic Programming versus Classification Trees for Identification of Burned Areas in Satellite Imagery -- Genetic Algorithms for Training Data and Polynomial Optimization in Colorimetric Characterization of Scanners -- New Genetic Operators in the Fly Algorithm: Application to Medical PET Image Reconstruction -- Chaotic Hybrid Algorithm and Its Application in Circle Detection -- Content-Based Image Retrieval of Skin Lesions by Evolutionary Feature Synthesis -- An Evolutionary Method for Model-Based Automatic Segmentation of Lower Abdomen CT Images for Radiotherapy Planning -- Evolution of Communicating Individuals -- Dynamic Data Clustering Using Stochastic Approximation Driven Multi-Dimensional Particle Swarm Optimization -- Automatic Synthesis of Associative Memories through Genetic Programming: A First Co-evolutionary Approach -- EvoINTELLIGENCE Contributions -- A Comparative Study between Genetic Algorithm and Genetic Programming Based Gait Generation Methods for Quadruped Robots -- Markerless Localization for Blind Users Using Computer Vision and Particle Swarm Optimization -- Particle Swarm Optimization for Feature Selection in Speaker Verification -- Scale- and Rotation-Robust Genetic Programming-Based Corner Detectors -- Self-organized and Evolvable Cognitive Architecture for Intelligent Agents and Multi-Agent Systems -- EvoNUM Contributions -- Investigating the Local-Meta-Model CMA-ES for Large Population Sizes -- Exploiting Evolution for an Adaptive Drift-Robust Classifier in Chemical Sensing -- Automatically Modeling Hybrid Evolutionary Algorithms from Past Executions -- Gaussian Adaptation Revisited – An Entropic View on Covariance Matrix Adaptation -- Parallel Genetic Algorithm on the CUDA Architecture -- A New Selection Ratio for Large Population Sizes -- Multi-Objective Probability Collectives -- Parallel Random Injection Differential Evolution -- Effect of Spatial Locality on an Evolutionary Algorithm for Multimodal Optimization -- A Directed Mutation Operator for Real Coded Genetic Algorithms -- Speedups between ×70 and ×120 for a

Generic Local Search (Memetic) Algorithm on a Single GPGPU Chip -- Advancing Model–Building for Many–Objective Optimization Estimation of Distribution Algorithms -- Estimation Distribution Differential Evolution -- Design of Continuous Controllers Using a Multiobjective Differential Evolution Algorithm with Spherical Pruning -- Parameter Tuning of Evolutionary Algorithms: Generalist vs. Specialist -- EvoSTOC Contributions -- Memory Design for Constrained Dynamic Optimization Problems -- Multi-population Genetic Algorithms with Immigrants Scheme for Dynamic Shortest Path Routing Problems in Mobile Ad Hoc Networks -- Measuring Fitness Degradation in Dynamic Optimization Problems -- Handling Undefined Vectors in Expensive Optimization Problems -- Adaptive Noisy Optimization -- Noise Analysis Compact Genetic Algorithm.

Sommario/riassunto

Evolutionary Computation (EC) techniques are e?cient, nature-inspired me- ods based on the principles of natural evolution and genetics. Due to their - ciency and simple underlying principles, these methods can be used for a diverse rangeofactivitiesincludingproblemsolving, optimization,machinelearningand pattern recognition. A large and continuously increasing number of researchers and professionals make use of EC techniques in various application domains. This volume presents a careful selection of relevant EC examples combined with a thorough examination of the techniques used in EC. The papers in the volume illustrate the current state of the art in the application of EC and should help and inspire researchers and professionals to develop e?cient EC methods for design and problem solving. All papers in this book were presented during EvoApplications 2010, which included a range of events on application-oriented aspects of EC. Since 1998, EvoApplications — formerly known as EvoWorkshops— has provided a unique opportunity for EC researchers to meet and discuss application aspects of EC and has been an important link between EC research and its application in a variety of domains. During these 12 years, new events have arisen, some have disappeared, whileothershavematuredtobecomeconferencesoftheirown,such as EuroGP in 2000, EvoCOP in 2004, and EvoBIO in 2007. And from this year, EvoApplications has become a conference as well.