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Nota di contenuto	The cumulative consensus of cognitive agents in scenarios: A framework for evolutionary processes in semantic memory -- Preferential partner selection in evolutionary labor markets: A study in agent-based computational economics -- Subspace pursuit for exploratory modeling -- Complete classes of strategies for the Classical Iterated Prisoner's Dilemma -- Evolutionary computing in multi-agent environments: Operators -- Evaluation of a simple host-parasite genetic algorithm -- Testing three paradigms for evolving groups of cooperative, simple agents -- Acquisition of general adaptive features by evolution -- Hybrid interior-lagrangian penalty based evolutionary optimization -- GA-Optimal fitness functions -- Scaling

up evolutionary programming algorithms -- Short notes on the schema theorem and the building block hypothesis in genetic algorithms -- A superior evolutionary algorithm for 3-SAT -- Evolvable hardware control for dynamic reconfigurable and adaptive computing -- Evolutionary programming strategies with self-adaptation applied to the design of rotorcraft using parallel processing -- Optimization of thinned phased arrays using evolutionary programming -- Evolutionary domain covering of an inference system for function approximation -- Learning to re-engineer semantic networks using cultural algorithms -- Integration of slicing methods into a Cultural Algorithm in order to assist in large-scale engineering systems design -- Genetic search for object identification -- Fuzzy cultural algorithms with evolutionary programming -- Culturing evolution strategies to support the exploration of novel environments by an intelligent robotic agent -- Skeuomorphs and cultural algorithms -- Sphere operators and their applicability for constrained parameter optimization problems -- Numeric mutation as an improvement to symbolic regression in genetic programming -- Variable-dimensional optimization with evolutionary algorithms using fixed-length representations -- On making problems evolutionarily friendly part 1: Evolving the most convenient representations -- On making problems evolutionarily friendly part 2: Evolving the most convenient coordinate systems within which to pose (and solve) the given problem -- An experimental investigation of self-adaptation in evolutionary programming -- On the application of evolutionary pattern search algorithms -- The schema theorem and the misallocation of trials in the presence of stochastic effects -- On the “Explorative power” of ES/EP-like algorithms -- Resampling and its avoidance in genetic algorithms -- Evolutionary search for minimal elements in partially ordered finite sets -- Tailoring mutation to landscape properties -- A genetic programming methodology for missile countermeasures optimization under uncertainty -- Evolutionary algorithms for vertex cover -- An evolutionary self-learning methodology: Some preliminary results from a case study -- Evolving IIR filters in multipath environments -- Fuzzy partition and input selection by genetic algorithms for designing fuzzy rule-based classification systems -- Evolving nonlinear controllers for backing up a truck-and-trailer using evolutionary programming -- Reconstruction of DNA sequence information from a simulated DNA chip using evolutionary programming -- Using programmatic motifs and genetic programming to classify protein sequences as to cellular location -- Fully automated and rapid flexible docking of inhibitors covalently bound to serine proteases -- Microtubule networks as a medium for adaptive information processing -- Evolve IV: A metabolically-based artificial ecosystem model -- Sex, mate selection, and evolution -- Finding low energy conformations of atomic clusters using evolution strategies -- Estimating the distribution of neural connections in the saccadic system using a biologically plausible learning rule — Preliminary results -- Evolutionary algorithms combined with deterministic search -- Steady state memetic algorithm for partial shape matching -- A fully characterized test suite for genetic programming -- Genetic algorithms for belief network inference: The role of scaling and niching -- Building software frameworks for evolutionary computation -- Recorded step directional mutation for faster convergence -- The behavior of particles -- Parameter selection in particle swarm optimization -- Evolutionary optimization versus particle swarm optimization: Philosophy and performance differences -- Comparison between genetic algorithms and particle swarm optimization -- A hybrid evolutionary learning system for synthesizing

neural network pattern recognition systems -- An evolutionary algorithm for designing feedforward neural networks -- Dual network representation applied to the evolution of neural controllers -- What does the landscape of a Hopfield associative memory look like? -- Visualization of evolutionary adaptation in R n -- On the application of cohort-driven operators to continuous optimization problems using evolutionary computation -- Random search versus genetic programming as engines for collective adaptation -- Optimal mutation and crossover rates for a genetic algorithm operating in a dynamic environment -- Local selection -- Asymmetric mutations for stochastic search -- Automated rule extraction for engine health monitoring -- Genetic programming for automatic target classification and recognition in synthetic aperture radar imagery -- Evolving heuristics for planning -- Solving cutting stock problems by evolutionary programming -- An empirical investigation of an evolutionary algorithm's ability to maintain a known good solution -- Evolving integrated low-level behaviors into intelligently interactive simulated forces -- Using offset invariant crossover as a tool for discovering cycle lengths of a periodic function -- Evolving a generalised behaviour: Artificial ant problem revisited -- Co-evolving functions in genetic programming: Dynamic ADF creation using GliB -- Evolving spatially-localized projection filters for SAR automatic target recognition -- Genetic programming in the overlapping generations model: An illustration with the dynamics of the inflation rate.

Sommario/riassunto

This book constitutes the thoroughly refereed post-conference proceedings of the 7th International Conference on Evolutionary Programming, EP98, held in San Diego, CA, USA, in March 1998. The volume presents 81 revised full papers selected from an overwhelming number of submissions. The papers are organized in topical sections on economics, emergence and complex systems; issues and innovations in evolutionary computation; applications; evolution-based approaches to engineering design; examining representations and operators; evolutionary computation theory; evolutionary computation and biological modeling; particle swarm; and combinations of evolutionary and neural computation.