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Nota di contenuto	Modelling genetic algorithms: From Markov chains to dependence with complete connections -- On the optimization of unimodal functions with the (1+1) evolutionary algorithm -- A timing analysis of convergence to fitness sharing equilibrium -- Where elitists start limping evolution strategies at ridge functions -- A bit-wise epistasis measure for binary search spaces -- Inside GA dynamics: Ground basis for comparison -- The effect of spin-flip symmetry on the performance of the simple GA -- Fitness distance correlation and Ridge functions -- Accelerating the convergence of evolutionary algorithms by fitness landscape approximation -- Modeling building-block interdependency

-- Mutate large, but inherit small! On the analysis of rescaled mutations in ( )-ES with noisy fitness data -- Creating robust solutions by means of evolutionary algorithms -- Analytic curve detection from a noisy binary edge map using genetic algorithm -- A comparison of dominance mechanisms and simple mutation on non-stationary problems -- Adaptation to a changing environment by means of the feedback thermodynamical genetic algorithm -- Optimization with noisy function evaluations -- On risky methods for local selection under noise -- Polygenic inheritance — A haploid scheme that can outperform diploidy -- Averaging efficiently in the presence of noise -- Solving binary constraint satisfaction problems using evolutionary algorithms with an adaptive fitness function -- Varying fitness functions in genetic algorithms: Studying the rate of increase of the dynamic penalty terms -- Landscape changes and the performance of Mapping Based Constraint handling methods -- A decoder-based evolutionary algorithm for constrained parameter optimization problems -- A spatial predator-prey approach to multi-objective optimization: A preliminary study -- Selective breeding in a multiobjective genetic algorithm -- Niching and elitist models for MOGAs -- Parallel evolutionary optimisation with constraint propagation -- Methods to evolve legal phenotypes -- Multiobjective optimization using evolutionary algorithms — A comparative case study -- Utilizing dynastically optimal forma recombination in hybrid genetic algorithms -- Further experimentations on the scalability of the GEMGA -- Indexed memory as a generic protocol for handling vectors of data in genetic programming -- On genetic algorithms and lindenmayer systems -- Genome length as an evolutionary self-adaptation -- Restart scheduling for genetic algorithms -- A comparative study of global and local selection in evolution strategies -- UEGO, an abstract niching technique for global optimization -- Development of problem-specific evolutionary algorithms -- The effects of control parameters and restarts on search stagnation in evolutionary programming -- Accelerating the evolutionary-gradient-search procedure: Individual step sizes -- Extending population-based incremental learning to continuous search spaces -- Multi-parent recombination in genetic algorithms with search space boundary extension by mirroring -- Selective crossover in genetic algorithms: An empirical study -- Line-breeding schemes for combinatorial optimization -- Finding regions of uncertainty in learned models: An application to face detection -- On ZCS in multi-agent environments -- Empirical analysis of the factors that affect the Baldwin effect -- Promoting generalisation of learned behaviours in genetic programming -- Generalization in Wilson's classifier system -- Symbiotic coevolution of artificial neural networks and training data sets -- Information-theoretic analysis of a mobile agent's learning in a discrete state space -- The coevolution of antibodies for concept learning -- Does data-model co-evolution improve generalization performance of evolving learners? -- A corporate classifier system -- Applying diffusion to a cooperative coevolutionary model -- Studying parallel evolutionary algorithms: The cellular programming case -- Learning to avoid moving obstacles optimally for mobile robots using a genetic-fuzzy approach -- Evolutionary neural networks for nonlinear dynamics modeling -- Hybrid distributed real-coded genetic algorithms -- Mechanisms of emergent computation in cellular automata -- Towards designing neural network ensembles by evolution -- Selection of training data for neural networks by a genetic algorithm -- Discovery with genetic algorithm scheduling strategies for cellular automata -- Simple + parallel + local = cellular computing -- Evolution, learning and speech

recognition in changing acoustic environments -- Ant colonies for adaptive routing in packet-switched communications networks -- The stud GA: A mini revolution? -- An island model based ant system with lookahead for the shortest supersequence problem -- Parameter-free Genetic Algorithm inspired by “disparity theory of evolution” -- Immune network dynamics for inductive problem solving -- Parallelization strategies for Ant Colony Optimization -- Self-organising pattern formation: Fruit flies and cell phones -- A new genetic local search algorithm for graph coloring -- Improving the performance of evolutionary algorithms for the satisfiability problem by refining functions -- Memetic algorithms and the fitness landscape of the graph bi-partitioning problem -- Investigating evolutionary approaches to adaptive database management against various quality of service metrics -- Genetic algorithm behavior in the MAXSAT domain -- An adaptive mutation scheme for a penalty-based graph-colouring GA -- Inver-over operator for the TSP -- Repair and brood selection in the traveling salesman problem -- The Traveling Salesrep Problem, Edge Assembly Crossover, and 2-opt -- Load balancing in parallel circuit testing with annealing-based and genetic algorithms -- A heuristic combination method for solving job-shop scheduling problems -- Reduction of air traffic congestion by genetic algorithms -- Timetabling the classes of an entire university with an evolutionary algorithm -- Genetic algorithms for the Multiple Container Packing Problem -- Buffer memory optimization in DSP applications: An evolutionary approach -- The Breeder Genetic Algorithm for frequency assignment -- A permutation based Genetic Algorithm for minimum span frequency assignment -- Comparison of Evolutionary Algorithms for design optimization -- Aspects of digital evolution: Evolvability and architecture -- Integrated facility design using an evolutionary approach with a subordinate network algorithm -- An evolutionary algorithm for synthesizing optical thin-film designs -- Implementing genetic algorithms with sterical constraints for protein structure prediction -- Optimal placements of flexible objects: An adaptive simulated annealing approach -- Encapsulated Evolution strategies for the determination of group contribution model parameters in order to predict thermodynamic properties -- Recombination operators for evolutionary graph drawing -- Optimisation of density estimation models with evolutionary algorithms -- Genetic algorithm in parameter estimation of nonlinear dynamic systems -- Optimizing web page layout using an annealed genetic algorithm as client-side script -- Solving the capacitor placement problem in a radial distribution system using an adaptive genetic algorithm.

Sommario/riassunto

This book constitutes the refereed proceedings of the 5th International Conference on Parallel Problem Solving from Nature, PPSN V, held in Amsterdam, The Netherlands, in September 1998. The 101 papers included in their revised form were carefully reviewed and selected from a total of 185 submissions. The book is divided into topical sections on convergence theory; fitness landscape and problem difficulty; noisy and non-stationary objective functions; multi-criteria and constrained optimization; representative issues; selection, operators, and evolution schemes; coevolution and learning; cellular automata, fuzzy systems, and neural networks; ant colonies, immune systems, and other paradigms; TSP, graphs, and satisfiability; scheduling, partitioning, and packing; design and telecommunications; and model estimations and layout problems.