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	Nota di contenuto	Heuristics I -- Alternative Solution Representations for the Job Shop Scheduling Problem in Ant Colony Optimisation -- Analyzing the Role of "Smart" Start Points in Coarse Search-Greedy Search -- Concealed Contributors to Result Quality — The Search Process of Ant Colony System -- Ants Guide Future Pilots -- Complex Systems I -- Information Transfer by Particles in Cellular Automata -- An Artificial

Development Model for Cell Pattern Generation -- Rounds Effect in Evolutionary Games -- Modelling Architectural Visual Experience Using Non-linear Dimensionality Reduction -- An Evolutionary Benefit from Misperception in Foraging Behaviour -- Simulated Evolution of Discourse with Coupled Recurrent Networks -- How Different Hierarchical Relationships Impact Evolution -- A Dual Phase Evolution Model of Adaptive Radiation in Landscapes -- Biological Systems I -- Directed Evolution of an Artificial Cell Lineage -- An Integrated QAP-Based Approach to Visualize Patterns of Gene Expression Similarity -- Complement-Based Self-Replicated, Self-Assembled Systems (CBSRSAS) -- Self-maintained Movements of Droplets with Convection Flow -- Structural Circuits and Attractors in Kauffman Networks -- The Effects of Learning on the Roles of Chance, History and Adaptation in Evolving Neural Networks -- Unsupervised Acoustic Classification of Bird Species Using Hierarchical Self-organizing Maps -- The Prisoner's Dilemma with Image Scoring on Networks: How Does a Player's Strategy Depend on Its Place in the Social Network? -- Heuristics II -- Population-Based Ant Colony Optimisation for Multi-objective Function Optimisation -- Mechanisms for Evolutionary Reincarnation -- An Evolutionary Algorithm with Spatially Distributed Surrogates for Multiobjective Optimization -- Examining Dissimilarity Scaling in AntColony Approaches to Data Clustering -- Complex Systems II -- A Framework for the Co-evolution of Genes, Proteins and a Genetic Code Within an Artificial Chemistry Reaction Set -- In-Formation Flocking: An Approach to Data Visualization Using Multi-agent Formation Behavior -- A Principled Approach to Swarm-Based Wall-Building -- Pattern Extraction Improves Automata-Based Syntax Analysis in Songbirds -- Heuristics III -- A Modified Strategy for the Constriction Factor in Particle Swarm Optimization -- A Differential Evolution Variant of NSGA II for Real World Multiobjective Optimization -- Investigating a Hybrid Metaheuristic for Job Shop Rescheduling -- Enhancements to Extremal Optimisation for Generalised Assignment -- Biological Systems II -- Identification of Marker Genes Discriminating the Pathological Stages in Ovarian Carcinoma by Using Support Vector Machine and Systems Biology -- Ancestral DNA Sequence Reconstruction Using Recursive Genetic Algorithms.

| Sommario/riassunto | This book constitutes the refereed proceedings of the Third Australian Conference on Artificial Life, ACAL 2007, held in Gold Coast, Australia, in December 2007. The 34 revised full papers presented were carefully reviewed and selected from 70 submissions. Research in Alife covers the main areas of biological behaviour as a metaphor for computational models, computational models that reproduce/duplicate a biological behaviour, and computational models to solve biological problems. Thus, Alife features analyses and understanding of life and nature and helps modeling biological systems or solving biological problems. The papers are organized in topical sections on heuristics, complex systems, evolution, biological systems, and networks. |