

TABLE OF CONTENTS

Preface.....	v
--------------	---

PART 1: Evolutionary Theory

<i>Chapter 1: Co-Evolutionary Learning in Strategic Environments.....</i>	<i>1</i>
(Akira Namatame; Naoto Sato; Kazuyuki Murakami)	

<i>Chapter 2: Using Evolution to Learn User Preferences.....</i>	<i>20</i>
(Supiya Ujjin; Peter J. Bentley)	

<i>Chapter 3: A Parallel Genetic Algorithm for Clustering</i>	<i>41</i>
(Juha Kivijärvi; Joonas Lehtinen; Olli S. Nevalainen)	

<i>Chapter 4: Using SIMD Genetic Programming for Fault-Tolerant Trading Strategies</i>	<i>61</i>
(Nils Svängård; Peter Nordin; Stefan Lloyd)	

<i>Chapter 5: An Efficient Coevolutionary Algorithm Based on Merging and Splitting of Species.....</i>	<i>78</i>
(Myung Won Kim; Soungjin Park; Joung Woo Ryu)	

<i>Chapter 6: Schema Analysis of Genetic Algorithms on Multiplicative Landscape.....</i>	<i>93</i>
(Hiroshi Furutani)	

<i>Chapter 7: Evolutionary Learning Strategies for Artificial Life Characters.....</i>	<i>112</i>
(Marcio Lobo Netto; Henrique Schützer Del Nero; Cláudio Ranieri)	

<i>Chapter 8: Adaptive Strategy for GA Inspired by Biological Evolution</i>	132
(Hidefumi Sawai; Susumu Adachi)	
<i>Chapter 9: The Influence of Stochastic Quality Functions on Evolutionary Search</i>	152
(Bernhard Sendhoff; Hans-Georg Beyer; Markus Olhofer)	
<i>Chapter 10: Theoretical Analysis of the GA Performance with a Multiplicative Royal Road Function</i>	173
(Hideaki Suzuki; Hidefumi Sawai)	
<i>Chapter 11: A Real-Coded Cellular Genetic Algorithm Inspired by Predator-Prey Interactions</i>	191
(Xiaodong Li; Stuart Sutherland)	
<i>Chapter 12: Observed Dynamics of Large Scale Parallel Evolutionary Algorithms with Implications for Protein Engineering</i>	208
(Martin Oates; David Corne; Douglas Kell)	
<i>Chapter 13: Using Edge Histogram Models to Solve Flow Shop Scheduling Problems with Probabilistic Model-Building Genetic Algorithms</i>	230
(Shigeyoshi Tsutsui; Mitsunori Miki)	
<i>Chapter 14: Collective Movements of Mobile Robots with Behavior Models of a Fish</i>	250
(Tatsuro Shinchi; Tetsuro Kitazoe; Masayoshi Tabuse; Hisao Ide; Takahiro Horita)	
<i>Chapter 15: Automatic Modularization with Speciated Neural Network Ensemble</i>	268
(Vineet R. Khare; Xin Yao)	

<i>Chapter 16: Search Engine Development using Evolutionary Computation Methodologies</i>	284
(Reginald L. Walker)	
<i>Chapter 17: Evaluating Evolutionary Multi-Objective Optimization Algorithms using Running Performance Metrics</i>	307
(Kalyanmoy Deb; Sachin Jain)	
<i>Chapter 18: Visualization Technique for Analyzing Non-Dominant Pareto Optimality</i>	327
(Kiam Heong Ang; Gregory Chong; Yun Li)	

PART 2: Evolutionary Applications

<i>Chapter 19: Image Classification using Particle Swarm Optimization</i> (Mahamed G. Omran; Andries P. Engelbrecht; Ayed Salman)	347
<i>Chapter 20: A Coevolutionary Genetic Search for a Layout Problem</i> (Thomas Dunker; Engelbert Westkämper; Günter Radons)	366
<i>Chapter 21: Sensitivity Analysis in Multi-Objective Evolutionary Design</i> (Johan Andersson).....	386
<i>Chapter 22: Integrated Production and Transportation Scheduling in Supply Chain Optimisation</i>	406
(Gang Wu; Chee Kheong Siew)	
<i>Chapter 23: Evolution of Fuzzy Rule Based Controllers for Dynamic Environments</i>	426
(Jeff Riley; Vic Ciesielski)	

<i>Chapter 24: Applications of Evolution Algorithms to the Synthesis of Single/Dual-Rail Mixed PTL/Static Logic for Low-Power Applications</i>	446
(Geun Rae Cho; Tom Chen)	
<i>Chapter 25: Evolutionary Multi-Objective Robotics: Evolving a Physically Simulated Quadruped using the PDE Algorithm</i>	466
(Jason Teo; Hussein A. Abbass)	
<i>Chapter 26: Applying Bayesian Networks in Practical Customer Satisfaction Studies</i>	486
(Waldemar Jaroński; Josée Bloemer; Koen Vanhoof; Geert Wets)	
<i>Chapter 27: An Adaptive Length Chromosome Hyper-Heuristic Genetic Algorithm for a Trainer Scheduling Problem</i>	506
(Limin Han; Graham Kendall; Peter Cowling)	
<i>Chapter 28: Design Optimization of Permanent Magnet Synchronous Machine using Genetic Algorithms</i>	526
(R.K. Gupta; Itsuya Muta; G. Gouthaman; B. Bhattacharjee)	
<i>Chapter 29: A Genetic Algorithm for Joint Optimization of Spare Capacity and Delay in Self-Healing Network</i>	542
(Sam Kwong; H.W. Chong)	
<i>Chapter 30: Optimization of DS-CDMA Code Sequences for Wireless Systems</i>	562
(Sam Kwong; Alex C.H. Ho)	
<i>Chapter 31: An Efficient Evolutionary Algorithm for Multicast Routing with Multiple QoS Constraints</i>	581
(Abolfazl T. Haghighat; Karim Faez; Mehdi Dehghan)	
<i>Chapter 32: Constrained Optimization of Multilayered Anti-Reflection Coatings using Genetic Algorithms</i>	603
(Kai-Yew Lum; Pierre-Marie Jacquart; Mourad Sefrioui)	

<i>Chapter 33: Sequential Construction of Features Based on Genetically Transformed Data</i>	623
(Jacek Jelonek, Roman Słowiński, Robert Susmaga)	
<i>Chapter 34: Refrigerant Leak Prediction in Supermarkets using Evolved Neural Networks</i>	643
(Dan W. Taylor; David W. Corne)	
<i>Chapter 35: Worst-Case Instances and Lower Bounds via Genetic Algorithms</i>	662
(Matthew P. Johnson; Andrew P. Kosoresow)	
<i>Chapter 36: Prediction of Protein Secondary Structure by Multi-Modal Neural Network</i>	682
(Hanxi Zhu; Ikuo Yoshihara; Kunihiro Yamamori; Moritoshi Yasunaga)	
<i>Chapter 37: Joint Attention in the Mimetic Context — What is a “Mimetic Same”?</i>	698
(Takayuki Shiose; Kenichi Kagawa; An Min; Toshiharu Taura; Hiroshi Kawakami; Osamu Katai)	
<i>Chapter 38: Autonomous Symbol Acquisition Through Agent Communication</i>	711
(A. Wada; K. Takadama; K. Shimohara; O. Katai)	
<i>Chapter 39: Search of Steady-State Genetic Algorithms for Vision-Based Mobile Robots</i>	729
(Naoyuki Kubota; Masayuki Kanemaki)	
<i>Chapter 40: Time Series Forecast with Elman Neural Networks and Genetic Algorithms</i>	747
(LiXin Xu; Zhao Yang Dong; Arthur Tay)	

<i>Chapter 41: Co-Adaptation to Facilitate Naturalistic Human Involvement in Shared Control System.....</i>	<i>769</i>
<i>(Yukio Horiguchi; Tetsuo Sawaragi)</i>	
<i>Chapter 42: Distributed Evolutionary Strategies for Searching Oligo Sets of Yeast Genome</i>	<i>789</i>
<i>(Arthur Tay; Kay Chen Tan; Ji Cai; Huck Hui Ng)</i>	
<i>Chapter 43: Duration-Dependent Multi-Schedule Evolutionary Curriculum Timetabling</i>	<i>803</i>
<i>(Chee Keong Chan; Hoay Beng Gooi; Meng Hiot Lim)</i>	