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Ke Chen

Yew Soon Ong (Eds.)

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Preface

This book and its sister volumes, i.e., LNCS vols. 3610, 3611, and 3612, are the proceedings of the 1st International Conference on Natural Computation (ICNC 2005), jointly held with the 2nd International Conference on Fuzzy Systems and Knowledge Discovery (FSKD 2005, LNAI vols. 3613 and 3614) from 27 to 29 August 2005 in Changsha, Hunan, China. In its budding run, ICNC 2005 successfully attracted 1887 submissions from 32 countries/regions (the joint ICNC-FSKD 2005 received 3136 submissions). After rigorous reviews, 502 high-quality papers, i.e., 313 long papers and 189 short papers, were included in the ICNC 2005 proceedings, representing an acceptance rate of 26.6%.

The ICNC-FSKD 2005 featured the most up-to-date research results in computational algorithms inspired from nature, including biological, ecological, and physical systems. It is an exciting and emerging interdisciplinary area in which a wide range of techniques and methods are being studied for dealing with large, complex, and dynamic problems. The joint conferences also promoted cross-fertilization over these exciting and yet closely-related areas, which had a significant impact on the advancement of these important technologies. Specific areas included neural computation, quantum computation, evolutionary computation, DNA computation, chemical computation, information processing in cells and tissues, molecular computation, computation with words, fuzzy computation, granular computation, artificial life, swarm intelligence, ants colonies, artificial immune systems, etc., with innovative applications to knowledge discovery, finance, operations research, and more. In addition to the large number of submitted papers, we were blessed with the presence of four renowned keynote speakers and several distinguished panelists.

On behalf of the Organizing Committee, we thank Xiangtan University for sponsorship, and the IEEE Circuits and Systems Society, the IEEE Computational Intelligence Society, and the IEEE Control Systems Society for technical co-sponsorship. We are grateful for the technical cooperation from the International Neural Network Society, the European Neural Network Society, the Chinese Association for Artificial Intelligence, the Japanese Neural Network Society, the International Fuzzy Systems Association, the Asia-Pacific Neural Network Assembly, the Fuzzy Mathematics and Systems Association of China, and the Hunan Computer Federation. We thank the members of the Organizing Committee, the Advisory Board, and the Program Committee for their hard work in the past 18 months. We wish to express our heartfelt appreciation to the keynote and panel speakers, special session organizers, session chairs, reviewers, and student helpers. Our special thanks go to the publisher, Springer, for publishing the ICNC 2005 proceedings as three volumes of the Lecture Notes in Computer Science series (and the FSKD 2005 proceedings as two volumes of the Lecture Notes in Artificial Intelligence series). Finally, we thank all the authors and par-

ticipants for their great contributions that made this conference possible and all the hard work worthwhile.

August 2005

Lipo Wang
Ke Chen
Yew Soon Ong

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ICNC 2005 was organized by Xiangtan University and technically co-sponsored by the IEEE Circuits and Systems Society, the IEEE Computational Intelligence Society, and the IEEE Control Systems Society, in cooperation with the International Neural Network Society, the European Neural Network Society, the Chinese Association for Artificial Intelligence, the Japanese Neural Network Society, the International Fuzzy Systems Association, the Asia-Pacific Neural Network Assembly, the Fuzzy Mathematics and Systems Association of China, and the Hunan Computer Federation.

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 Yeboon Yun
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Table of Contents – Part III

Evolutionary Methodology

Multi-focus Image Fusion Based on SOFM Neural Networks and Evolution Strategies <i>Yan Wu, Chongyang Liu, Guisheng Liao</i>	1
Creative Design by Chance Based Interactive Evolutionary Computation <i>Chao-Fu Hong, Hsiao-Fang Yang, Mu-Hua Lin</i>	11
Design of the Agent-Based Genetic Algorithm <i>Honggang Wang, Jianchao Zeng, Yubin Xu</i>	22
Drawing Undirected Graphs with Genetic Algorithms <i>Qing-Guo Zhang, Hua-Yong Liu, Wei Zhang, Ya-Jun Guo</i>	28
A Novel Type of Niching Methods Based on Steady-State Genetic Algorithm <i>Minqiang Li, Jisong Kou</i>	37
Simulated Annealing Genetic Algorithm for Surface Intersection <i>Min Tang, Jin-xiang Dong</i>	48
A Web Personalized Service Based on Dual GAs <i>Zhengyu Zhu, Qihong Xie, Xinghuan Chen, Qingsheng Zhu</i>	57
A Diversity Metric for Multi-objective Evolutionary Algorithms <i>Xu-yong Li, Jin-hua Zheng, Juan Xue</i>	68
An Immune Partheno-Genetic Algorithm for Winner Determination in Combinatorial Auctions <i>JianCong Bai, HuiYou Chang, Yang Yi</i>	74
A Novel Genetic Algorithm Based on Cure Mechanism of Traditional Chinese Medicine <i>Chao-Xue Wang, Du-Wu Cui, Lei Wang, Zhu-Rong Wang</i>	86
An Adaptive GA Based on Information Entropy <i>Yu Sun, Chun-lian Li, Ai-guo Wang, Jia Zhu, Xi-cheng Wang</i>	93

A Genetic Algorithm of High-Throughput and Low-Jitter Scheduling for Input-Queued Switches <i>Yaohui Jin, Jingjing Zhang, Weisheng Hu</i>	102
Mutation Matrix in Evolutionary Computation: An Application to Resource Allocation Problem <i>Jian Zhang, Kwok Yip Szeto</i>	112
Dependent-Chance Programming Model for Stochastic Network Bottleneck Capacity Expansion Based on Neural Network and Genetic Algorithm <i>Yun Wu, Jian Zhou, Jun Yang</i>	120
Gray-Encoded Hybrid Accelerating Genetic Algorithm for Global Optimization of Water Environmental Model <i>Xiaohua Yang, Zhifeng Yang, Zhenyao Shen, Guihua Lu</i>	129
Hybrid Chromosome Genetic Algorithm for Generalized Traveling Salesman Problems <i>Han Huang, Xiaowei Yang, Zhifeng Hao, Chunguo Wu, Yanchun Liang, Xi Zhao</i>	137
A New Approach Belonging to EDAs: Quantum-Inspired Genetic Algorithm with Only One Chromosome <i>Shude Zhou, Zengqi Sun</i>	141
A Fast Fingerprint Matching Approach in Medicare Identity Verification Based on GAs <i>Qingquan Wang, Lili Rong</i>	151
Using Viruses to Improve GAs <i>Francesco Pappalardo</i>	161
A Genetic Algorithm for Solving Fuzzy Resource-Constrained Project Scheduling <i>Hong Wang, Dan Lin, Minqiang Li</i>	171
A Hybrid Genetic Algorithm and Application to the Crosstalk Aware Track Assignment Problem <i>Yici Cai, Bin Liu, Xiong Yan, Qiang Zhou, Xianlong Hong</i>	181
A Genetic Algorithm for Solving Resource-Constrained Project Scheduling Problem <i>Hong Wang, Dan Lin, Minqiang Li</i>	185

Evolutionary Algorithm Based on Overlapped Gene Expression <i>Jing Peng, Chang-jie Tang, Jing Zhang, Chang-an Yuan</i>	194
Evolving Case-Based Reasoning with Genetic Algorithm in Wholesaler's Returning Book Forecasting <i>Pei-Chann Chang, Yen-Wen Wang, Ching-Jung Ting, Chien-Yuan Lai, Chen-Hao Liu</i>	205
A Novel Immune Quantum-Inspired Genetic Algorithm <i>Ying Li, Yanning Zhang, Yinglei Cheng, Xiaoyue Jiang, Rongchun Zhao</i>	215
A Hierarchical Approach for Incremental Floorplan Based on Genetic Algorithms <i>Yongpan Liu, Huazhong Yang, Rong Luo, Hui Wang</i>	219
A Task Duplication Based Scheduling Algorithm on GA in Grid Computing Systems <i>Jianning Lin, Huizhong Wu</i>	225
Analysis of a Genetic Model with Finite Populations <i>Alberto Bertoni, Paola Campadelli, Roberto Posenato</i>	235
Missing Values Imputation for a Clustering Genetic Algorithm <i>Eduardo R. Hruschka, Estevam R. Hruschka Jr., Nelson F.F. Ebecken</i>	245
A New Organizational Nonlinear Genetic Algorithm for Numerical Optimization <i>Zhihua Cui, Jianchao Zeng</i>	255
Hybrid Genetic Algorithm for the Flexible Job-Shop Problem Under Maintenance Constraints <i>Nozha Zribi, Pierre Borne</i>	259
A Genetic Algorithm with Elite Crossover and Dynastic Change Strategies <i>Yuanpai Zhou, Ray P.S. Han</i>	269
A Game-Theoretic Approach for Designing Mixed Mutation Strategies <i>Jun He, Xin Yao</i>	279
FIR Frequency Sampling Filters Design Based on Adaptive Particle Swarm Optimization Algorithm <i>Wanping Huang, Lifang Zhou, Jixin Qian, Longhua Ma</i>	289

A Hybrid Macroevolutionary Algorithm <i>Jihui Zhang, Junqin Xu</i>	299
Evolutionary Granular Computing Model and Applications <i>Jiang Zhang, Xuewei Li</i>	309
Application of Genetic Programming for Fine Tuning PID Controller Parameters Designed Through Ziegler-Nichols Technique <i>Gustavo Maia de Almeida, Valceres Vieira Rocha e Silva, Erivelton Geraldo Nepomuceno, Ryuichi Yokoyama</i>	313
Applying Genetic Programming to Evolve Learned Rules for Network Anomaly Detection <i>Chuanhuan Yin, Shengfeng Tian, Houkuan Huang, Jun He</i>	323
A Pattern Combination Based Approach to Two-Dimensional Cutting Stock Problem <i>Jinming Wan, Yadong Wu, Hongwei Dai</i>	332
Fractal and Dynamical Language Methods to Construct Phylogenetic Tree Based on Protein Sequences from Complete Genomes <i>Zu-Guo Yu, Vo Anh, Li-Quan Zhou</i>	337
Evolutionary Hardware Architecture for Division in Elliptic Curve Cryptosystems over $GF(2^n)$ <i>Jun-Cheol Jeon, Kee-Won Kim, Kee-Young Yoo</i>	348
An Evolvable Hardware System Under Varying Illumination Environment <i>In Ja Jeon, Phill Kyu Rhee</i>	356
An Evolvable Hardware Chip for Image Enhancement in Surface Roughness Estimation <i>M. Rajaram Narayanan, S. Gowri, S. Ravi</i>	361
Evolutionary Agents for n-Queen Problems <i>Weicai Zhong, Jing Liu, Licheng Jiao</i>	366
Fictitious Play and Price-Deviation-Adjust Learning in Electricity Market <i>Xiaoyang Zhou, Li Feng, Xiuming Dong, Jincheng Shang</i>	374
Automatic Discovery of Subgoals for Sequential Decision Problems Using Potential Fields <i>Huanwen Chen, Changming Yin, Lijuan Xie</i>	384