

Contents – Part II

Evolutionary Computing

Kernel Evolutionary Algorithm for Clustering.	3
<i>Xiangming Jiang, Jingjing Ma, and Chao Lei</i>	
A Multi-parent Crossover Based Genetic Algorithm for Bi-Objective Unconstrained Binary Quadratic Programming Problem	10
<i>Chao Huo, Rongqiang Zeng, Yang Wang, and Mingsheng Shang</i>	
Unsupervised Image Segmentation Based on Watershed and Kernel Evolutionary Clustering Algorithm	20
<i>Chao Lei, Jingjing Ma, and Xiangming Jiang</i>	
Classification Based on Fireworks Algorithm	35
<i>Yu Xue, Binping Zhao, and Tinghuai Ma</i>	
Overlapping Community Detection in Network: A Fuzzy Evaluation Approach	41
<i>Wei Zhao, Yangzhi Guo, Chao Lei, and Jianan Yan</i>	
Multifactorial Brain Storm Optimization Algorithm	47
<i>Xiaolong Zheng, Yu Lei, Maoguo Gong, and Zedong Tang</i>	
An Improved Heuristic Algorithm for UCAV Path Planning.	54
<i>Kun Zhang, Peipei Liu, Weiren Kong, Yu Lei, Jie Zou, and Min Liu</i>	
An Efficient Benchmark Generator for Dynamic Optimization Problems	60
<i>Changhe Li</i>	
Ensemble of Different Parameter Adaptation Techniques in Differential Evolution.	73
<i>Liang Wang and Wenyin Gong</i>	
Research on Multimodal Optimization Algorithm for the Contamination Source Identification of City Water Distribution Networks	80
<i>Xuesong Yan, Jing Zhao, and Chengyu Hu</i>	
Visual Tracking by Sequential Cellular Quantum-Behaved Particle Swarm Optimization Algorithm	86
<i>Junyi Hu, Wei Fang, and Wangtong Ding</i>	
An Improved Search Algorithm About Spam Firewall	95
<i>Kangshun Li, Lu Xiong, and Zhichao Wen</i>	

Artificial Bee Colony Algorithm Based on Clustering Method and Its Application for Optimal Power Flow Problem	101
<i>Liling Sun and Hanning Chen</i>	
Study on Hybrid Intelligent Algorithm with Solving Pre-stack AVO Elastic Parameter Inversion Problem	107
<i>Qinghua Wu, Ying Hao, and Xuesong Yan</i>	
A Hybrid Multi-objective Discrete Particle Swarm Optimization Algorithm for Cooperative Air Combat DWT A	114
<i>Guang Peng, Yangwang Fang, Shaohua Chen, Weishi Peng, and Dandan Yang</i>	
A Novel Image Fusion Method Based on Shearlet and Particle Swarm Optimization.	120
<i>Qiguang Miao, Ruyi Liu, Yiding Wang, and Jianfeng Song</i>	
Generalized Project Gradient Algorithm for Solving Constrained Minimax Problems	127
<i>Cong Zhang, Limin Sun, and Zhibin Zhu</i>	
A Real Adjacency Matrix-Coded Differential Evolution Algorithm for Traveling Salesman Problems	135
<i>Hang Wei, Zhifeng Hao, Han Huang, Gang Li, and Qinqun Chen</i>	
A Hybrid IWO Algorithm Based on Lévy Flight.	141
<i>Xuncai Zhang, Xiaoxiao Wang, Guangzhao Cui, and Ying Niu</i>	
Evolutionary Process: Parallelism Analysis of Differential Evolution Algorithm Based on Graph Theory	151
<i>Xiaoqi Peng, Zhifeng Hao, Han Huang, Hongyue Wu, and Fangqing Liu</i>	
A Mean Shift Assisted Differential Evolution Algorithm	163
<i>Hui Fang, Aimin Zhou, and Guixu Zhang</i>	
Quantum-Behaved Particle Swarm Optimization Using MapReduce.	173
<i>Yangyang Li, Zhenghan Chen, Yang Wang, and Licheng Jiao</i>	
Dynamic Fitness Landscape Analysis on Differential Evolution Algorithm . . .	179
<i>Shuling Yang, Kangshun Li, Wei Li, Weiguang Chen, and Yan Chen</i>	
Improving Artificial Bee Colony Algorithm with Historical Archive	185
<i>Yalan Zhou, Jiahai Wang, Shangce Gao, Xing Yang, and Jian Yin</i>	
Recent Advances in Evolutionary Programming	191
<i>Jing Yu and Lining Xing</i>	
Application of Discrete Ant Colony Optimization in VRPTW.	204
<i>Qinhong Fu, Kang Zhou, Huaqing Qi, and Tingfang Wu</i>	

Differential Evolution Algorithm with the Second Order Difference Vector. . .	219
<i>Xinchao Zhao, Dongyue Liu, Xingquan Zuo, Huiping Liu, and Rui Li</i>	

Multi-objective Optimization

Biomimicry of Plant Root Foraging for Distributed Optimization: Models and Emergent Behaviors.	231
<i>Hanning Chen, Xiaodan Liang, Maowei He, and Weixing Su</i>	
Adaptive Bacterial Foraging Algorithm and Its Application in Mobile Robot Path Planning	241
<i>Xiaodan Liang, Maowei He, and Hanning Chen</i>	
A Novel Hierarchical Artificial Bee Colony Optimizer and Its Application for Model-Based Prediction of Droplet Characteristic in 3D Electronic Printing	247
<i>Maowei He and Hanning Chen</i>	
Research on Network-on-Chip Automatically Generate Method Based on Hybrid Optimization Mapping	254
<i>Chao Li and Yuqiang Chen</i>	
Evolutionary Algorithms for Many-Objective Ground Station Scheduling Problem.	265
<i>Zhongshan Zhang, Lining Xing, Yuning Chen, and Pei Wang</i>	
Indicator-Based Multi-objective Bacterial Foraging Algorithm with Adaptive Searching Mechanism	271
<i>Lianbo Ma, Xu Li, Tianhan Gao, Qiang He, Guangming Yang, and Ying Liu</i>	
Applying K-means Clustering and Genetic Algorithm for Solving MTSP. . .	278
<i>Zhanqing Lu, Kai Zhang, Juanjuan He, and Yunyun Niu</i>	
A Multi-objective Optimization Algorithm Based on Tissue P System for VRPTW	285
<i>Wenbo Dong, Kang Zhou, Huaqing Qi, Cheng He, Jun Zhang, and Bosheng Song</i>	
The Subideal Version of the SOI-Algorithm and Its Application	302
<i>Haifeng Sang and Qingchun Li</i>	
A Diversity Keeping Strategy for the Multi-objective Examination Timetabling Problem	310
<i>Yu Lei, Jiao Shi, and Kun Zhang</i>	

A Grid-Based Decomposition for Evolutionary Multiobjective Optimization.	316
<i>Zhiwei Mei, Xinye Cai, and Zhun Fan</i>	
Multi-objective Evolutionary Algorithm for Enhancing the Robustness of Networks	322
<i>Zheng Li, Shanfeng Wang, and Wenping Ma</i>	
Multi-objective Optimization with Nonnegative Matrix Factorization for Identifying Overlapping Communities in Networks.	328
<i>Hongmin Liu, Hao Li, and Wei Zhao</i>	
Magnetic Bacterial Optimization Algorithm for Mobile Robot Path Planning	334
<i>Hongwei Mo, Lifang Xu, and Chaomin Luo</i>	
Pattern Recognition	
A Simple Deep Feature Representation for Person Re-identification.	343
<i>Shengke Wang, Lianghua Duan, Yong Zhao, and Junyu Dong</i>	
A Common Strategy to Improve Community Detection Performance Based on the Nodes' Property	355
<i>Wei Du and Xiaochen He</i>	
HVS-Inspired Dimensionality Reduction Model Based on Factor Analysis . . .	362
<i>Zhigang Shang, Mengmeng Li, and Yonghui Dong</i>	
Human Face Reconstruction from a Single Input Image Based on a Coupled Statistical Model	373
<i>Yujuan Sun, Muwei Jian, and Junyu Dong</i>	
Research on Micro-blog New Word Recognition Based on MapReduce.	379
<i>Chaoting Xiao, Jianhou Gan, Bin Wen, Wei Zhang, and Xiaochun Cao</i>	
A Memetic Kernel Clustering Algorithm for Change Detection in SAR Images	388
<i>Yangyang Li, Gao Lu, and Licheng Jiao</i>	
Collaborative Rating Prediction Based on Dynamic Evolutionary Heterogeneous Clustering.	394
<i>Jianrui Chen, Uliji, Hua Wang, and Chunxia Zhao</i>	
Improving Sample Optimization with Convergence Speed Controller for Sampling-Based Image Matting	400
<i>Liang Lv, Han Huang, Zhaoquan Cai, and Yihui Liang</i>	

An Improved Extraction Algorithm About Disease Spots	407
<i>Lu Xiong, Dongbo Zhang, and Kangshun Li</i>	
Fine-Grained Image Categorization with Fisher Vector	413
<i>Xiaolin Tian, Xin Ding, and Licheng Jiao</i>	
Analysis of SNP Network Structure Based on Mutual Information of Breast Cancer Susceptibility Genes	420
<i>Shudong Wang, Shanqiang Zhang, Shanshan Li, Xinzeng Wang, Sicheng He, Yan Zhao, Xiaodan Fan, Fayou Yuan, Xinjie Zhu, and Yun Jiang</i>	
Novel Image Deconvolution Algorithm Based on the ROF Model.	431
<i>Su Xiao</i>	
Nucleic Acid Secondary Structures Prediction with Planar <i>Pseudoknots</i> Using Genetic Algorithm	441
<i>Zhang Kai, Li Shangyi, He Juanjuan, and Niu Yunyun</i>	
The Short-Term Traffic Flow Prediction Based on MapReduce.	448
<i>Suping Liu and Dongbo Zhang</i>	
Saliency Detection Model for Low Contrast Images Based on Amplitude Spectrum Analysis and Superpixel Segmentation.	454
<i>Hua Yang, Xin Xu, and Nan Mu</i>	
Memetic Image Segmentation Method Based on Digraph Coding	461
<i>Tao Wu, Jiao Shi, and Yu Lei</i>	
Change Detection in Remote Sensing Images Based on Clonal Selection Algorithm	467
<i>Tao Wu, Yu Lei, and Maoguo Gong</i>	
Others	
An Improved Algorithm for Constructing Binary Trees Using the Traversal Sequences	475
<i>Fangxiu Wang, Kang Zhou, Huaqing Qi, and Bosheng Song</i>	
Improved Multi-step Iterative Algorithms for the Fixed Points of Strongly Pseudo-Contractive Mappings	489
<i>Jiangrong Liu, Kang Zhou, Shan Zeng, Huaqing Qi, Bosheng Song, and Tingfang Wu</i>	
Grammar Automatic Checking System for English Abstract of Master's Thesis	497
<i>Yueting Xu, Ziheng Wu, Han Huang, Tianxiong Yang, Pan Yu, and Erang Lu</i>	

Verified Error Bounds for Symmetric Solutions of Operator Matrix
Equations. 507
Qingchun Li, Ziyu Li, Haifeng Sang, and Panpan Liu

Immune Multipath Reliable Transmission with Fault Tolerance in Wireless
Sensor Networks. 513
*Hongbing Li, Dong Zeng, Liwan Chen, Qiang Chen, Mingwei Wang,
and Chunjiong Zhang*

The Research of Solving Inverse Problems of Complex Differential
Equations. 518
Kangshun Li, Yan Chen, and Jun He

Fast Algorithms for Verifying Centrosymmetric Solutions of Sylvester
Matrix Equations. 524
Ziyu Li, Haifeng Sang, and Ying Zhao

Research on Distributed Anomaly Traffic Detection Technology Based
on Hadoop Platform 530
Qiang Chen

Author Index 537

Contents – Part I

DNA Computing

DNA Self-assembly Model to Solve Compound Logic Operators Problem . . .	3
<i>Shihua Zhou, Bin Wang, Xuedong Zheng, and Changjun Zhou</i>	
Model Checking Computational Tree Logic Using Sticker Automata	12
<i>Weijun Zhu, Yanfeng Wang, Qinglei Zhou, and Kai Nie</i>	
Two-Digit Full Subtractor Logical Operation Based on DNA Strand Displacement	21
<i>Junwei Sun, Xing Li, Chun Huang, Guangzhao Cui, and Yanfeng Wang</i>	
One-Bit Full Adder-Full Subtractor Logical Operation Based on DNA Strand Displacement	30
<i>Yanfeng Wang, Xing Li, Chun Huang, Guangzhao Cui, and Junwei Sun</i>	
Logic Gate Based on Circular DNA Structure with Strand Displacement	39
<i>Guangzhao Cui, Xi Wang, Xuncaizhang, Ying Niu, and Hua Liu</i>	
The Working Operation Problem Based on Probe Machine Model	47
<i>Jing Yang and Zhixiang Yin</i>	
Matrix Flat Splicing Systems	54
<i>Rodica Ceterchi, Linqiang Pan, Bosheng Song, and K.G. Subramanian</i>	
A Universal Platform for Building DNA Logic Circuits	64
<i>Zicheng Wang, Jian Ai, Yanfeng Wang, Guangzhao Cui, and Lina Yao</i>	

Membrane Computing

A Hybrid “Fast-Slow” Convergent Framework for Genetic Algorithm Inspired by Membrane Computing	75
<i>Zhongwei Li, Shengyu Xia, Yun Jiang, Beibei Sun, Yuezhen Xin, and Xun Wang</i>	
An Image Threshold Segmentation Algorithm with Hybrid Evolutionary Mechanisms Based on Membrane Computing	85
<i>Shuo Liu, Kang Zhou, Shan Zeng, Huaqing Qi, and Tingfang Wu</i>	
K-Medoids-Based Consensus Clustering Based on Cell-Like P Systems with Promoters and Inhibitors	95
<i>Xiyu Liu, Yuzhen Zhao, and Wenxing Sun</i>	

Fault Classification of Power Transmission Lines Using Fuzzy Reasoning Spiking Neural P Systems	109
<i>Kang Huang, Gexiang Zhang, Xiaoguang Wei, Haina Rong, Yangyang He, and Tao Wang</i>	
Membrane Algorithm with Genetic Operation and VRPTW-Based Public Optimization System	118
<i>Yingying Duan, Kang Zhou, Huaqing Qi, and Zhiqiang Zhang</i>	
An Immune Algorithm Based on P System for Classification	133
<i>Lian Ye and Ping Guo</i>	
Simulation of Fuzzy ACSH on Membranes with Michaelis-Menten Kinetics . . .	142
<i>J. Philomenal Karoline, P. Helen Chandra, S.M. Saroja Theerdus Kalavathy, and A. Mary Imelda Jayaseeli</i>	
A Family P System of Realizing RSA Algorithm	155
<i>Ping Guo and Wei Xu</i>	
A General Object-Oriented Description for Membrane Computing.	168
<i>Xiyu Liu, Yuzhen Zhao, and Wenping Wang</i>	
Matrix Representation of Parallel Computation for Spiking Neural P Systems	187
<i>Juan Hu, Guangchun Chen, Hong Peng, Jun Wang, Xiangnian Huang, and Xiaohui Luo</i>	
The Computational Power of Array P System with Mate Operation.	200
<i>P. Helen Chandra, S.M. Saroja T. Kalavathy, and M. Nithya Kalyani</i>	
The Computational Power of Watson-Crick Grammars: Revisited	215
<i>Nurul Liyana Mohamad Zulkufli, Sherzod Turaev, Mohd Izzuddin Mohd Tamrin, and Azeddine Messikh</i>	
An Improvement of Small Universal Spiking Neural P Systems with Anti-Spikes	226
<i>Shuo Liu, Kang Zhou, Shan Zeng, Huaqing Qi, and Xing Chen</i>	
The Implementation of Membrane Clustering Algorithm Based on FPGA . . .	237
<i>Yunying Yang, Jun Ming, Jun Wang, Hong Peng, Zhang Sun, and Wenping Yu</i>	
Tools and Simulators for Membrane Computing-A Literature Review	249
<i>S. Raghavan and K. Chandrasekaran</i>	
Parallel Contextual Hexagonal Array P Systems	278
<i>James Immanuel Suseelan, D.G. Thomas, Robinson Thamburaj, Atulya K. Nagar, and S. Jayasankar</i>	

Superadiabatic STIRAP: Population Transfer and Quantum Rotation Gates	299
<i>Yousseuf Hamidou Issoufa and Azeddine Messikh</i>	
Image Segmentation Using Membrane Computing: A Literature Survey.	314
<i>Rafaa I. Yahya, Siti Mariyam Shamsuddin, Salah I. Yahya, Shafatnnur Hasan, Bisan Al-Salibi, and Ghada Al-Khafaji</i>	
Integrated Membrane Computing Framework for Modeling Intrusion Detection Systems.	336
<i>Rufai Kazeem Idowu, Ravie Chandren Muniyandi, and Zulaiha Ali Othman</i>	
Neural Computing	
A Deep Learning Model of Automatic Detection of Pulmonary Nodules Based on Convolution Neural Networks (CNNs).	349
<i>Xiaojiao Xiao, Yan Qiang, Juanjuan Zhao, and Pengfei Zhao</i>	
A Study on the Recognition and Classification Method of High Resolution Remote Sensing Image Based on Deep Belief Network	362
<i>Guanyu Chen, Xiang Li, and Ling Liu</i>	
Classification Based on Brain Storm Optimization Algorithm	371
<i>Yu Xue, Tao Tang, and Tinghuai Ma</i>	
Stacked Auto-Encoders for Feature Extraction with Neural Networks	377
<i>Shuanglong Liu, Chao Zhang, and Jinwen Ma</i>	
Fault Diagnosis of Power Systems Based on Triangular Fuzzy Spiking Neural P Systems	385
<i>Chengyu Tao, Wenping Yu, Jun Wang, Hong Peng, Ke Chen, and Jun Ming</i>	
A Recognition Method of Hand Gesture with CNN-SVM Model	399
<i>Miao Ma, Zuxue Chen, and Jie Wu</i>	
Cross-Media Information Retrieval with Deep Convolutional Neural Network	405
<i>Liang Bai, Tianyuan Yu, Jinlin Guo, Zheng Yang, and Yuxiang Xie</i>	
Exploration of the Critical Diameter in Networks	411
<i>Haifeng Du, Jingjing Wang, Xiaochen He, and Wei Du</i>	
Image Compression Based on Genetic Algorithm and Deep Neural Network	417
<i>Haisheng Deng, Hongying Liu, Feixiang Wang, Zhi Wang, and Yikai Wang</i>	

DNN-Based Joint Classification for Multi-source Image Change Detection. . .	425
<i>Wenping Ma, Zhizhou Li, Puzhao Zhang, and Tianyu Hu</i>	
Differencing Neural Network for Change Detection in Synthetic Aperture Radar Images	431
<i>Feng Chen, Jiao Shi, and Maoguo Gong</i>	
Change Detection in Synthetic Aperture Radar Images Based on Fuzzy Restricted Boltzmann Machine	438
<i>Na Li, Jiao Shi, and Maoguo Gong</i>	
Machine Learning	
Decision Variable Analysis Based on Distributed Computing	447
<i>Zhao Wang, Maoguo Gong, and Tian Xie</i>	
A Multi-task Learning Approach by Combining Derivative-Free and Gradient Methods	456
<i>Yiqi Hu and Yang Yu</i>	
A Collaborative Learning Model in Teaching-Learning-Based Optimization: Some Numerical Results	466
<i>Bei Dong, Xiaojun Wu, and Yifei Sun</i>	
Incremental Learning with Concept Drift: A Knowledge Transfer Perspective	473
<i>Yu Sun and Ke Tang</i>	
Visual Tracking Based on Ensemble Learning with Logistic Regression. . . .	480
<i>Xiaolin Tian, Sujie Zhao, and Licheng Jiao</i>	
A New Optimal Neuro-Fuzzy Inference System for MR Image Classification and Multiple Scleroses Detection.	487
<i>Hakima Zouaoui, Abdelouahab Moussaoui, Abdelmalik Taleb-Ahmed, and Mourad Oussalah</i>	
The Influence of Diversification Strategy on Capital Structure	494
<i>Xuefeng Li</i>	
An Improved Hybrid Bat Algorithm for Traveling Salesman Problem	504
<i>Wedad Al-sorori, Abdulqader Mohsen, and Walid Aljoby βer</i>	
Design of Selecting Security Solution Using Multi-objective Genetic Algorithm.	512
<i>Yunghee Lee, Jaehun Jung, and Chang Wook Ahn</i>	

A Multi-agent System for Creating Art Based on Boids with Evolutionary
and Neural Networks. 518
 Tae Jong Choi, Jaehun Jeong, and Chang Wook Ahn

Author Index 525

Bio-inspired Computing – Theories and Applications
11th International Conference, BIC-TA 2016, Xi'an,
China, October 28-30, 2016, Revised Selected Papers,
Part II

Gong, M.; Pan, L.; Song, T.; Zhang, G. (Eds.)

2016, XIX, 540 p. 152 illus., Softcover

ISBN: 978-981-10-3613-2