2017 13th International Conference on Computational Intelligence and Security (CIS 2017)

Hong Kong
15 – 18 December 2017
Preface .................................................................................................................................................................... xx
Organizing Committee ........................................................................................................................................ xxi
Program Committee ........................................................................................................................................... xxii
Reviewers ............................................................................................................................................................ xxiv

Regular Papers

Intelligent Algorithms and Models 1

An Efficient Algorithm for Parallel Computation of Rough Entropy Using CUDA ............................................ 1
Siyuan Jing (Leshan Normal University), Caiming Liu (Leshan Normal University), Gongliang Li (China Academy of Engineering Physics), Gaorong Yan (Leshan Normal University), and Yan Zhang (Leshan Normal University)

An alpha-Dominance Expansion Based Algorithm for Many-Objective Optimization ....................................... 6
Junhua Liu (Xi’an University), Yuping Wang (Xi’an University), Xingyi Wang (Xi’an University), Xin Sui (Xi’an University), Si Guo (Xi’an University), and Liwen Liu (Xi’an University)

Using Memetic Algorithm For Matching Process Models .................................................................................. 11
Xingsi Xue (Fujian University of Technology) and Aihong Ren (Baoji University of Arts and Sciences)

An Effective Solution to Nonlinear Bilevel Programming Problems Using Improved Particle Swarm Optimization Algorithm ........................................................................................................ 16
Zhonghua Li (Leshan Normal University), Liping Jia (Leshan Normal University), and Caiming Liu (Leshan Normal University)

Improving Hybrid Gravitational Search Algorithm for Adaptive Adjustment of Parameters .......................... 20
Yongchao Han (Xi’an University of Science and Technology), Ming Li (Xi’an University of Science and Technology), and Jie Liu (Xi’an University of Science and Technology)

A Novel Multi-objective Evolutionary Algorithm Based on a Further Decomposition Strategy ..................... 25
Songbai Liu (Shenzhen University), Qiuwen Lin (Shenzhen University), and Jianyong Chen (Shenzhen University)
A New Optimization Model and Algorithm for a Network Scheduling Problem in Inter-Datacenters Elastic Optical Networks 30

Hejun Xuan (Xidian University), Yuping Wang (Xidian University), Shiwei Guan (Xidian University), and Zhanqi Xu (Xidian University)

Research on Video Server Placement and Flux Plan Based on GA 35

Long Zhao (Xidian University), Jingxuan Wei (Xidian University), and Minghan Li (Xidian University)

A Multi-objective Framework for Location Recommendation Based on User Preference 39

Shanfeng Wang (Xidian University), Maoguo Gong (Xidian University), Can Qin (Xidian University), and Junwei Yang (Xidian University)

A Memetic Particle Swarm Optimization Algorithm to Solve Multi-objective Optimization Problems 44

Xin Li (Xidian University), Jingxuan Wei (Xidian University), and Yang Liu (Xidian University)

An Improvement Based Evolutionary Algorithm with Adaptive Weight Adjustment for Many-Objective Optimization 49

Cai Dai (Shaanxi Normal University) and Xiujuan Lei (Shaanxi Normal University)

BPSOBDE: A Binary Version of Hybrid Heuristic Algorithm for Multidimensional Knapsack Problems 54

Li Zhang (Xidian University) and Hong Li (Xidian University)

Intelligent Systems with Applications 1

A 3-D Structural Components Automatic Modeling Method Based on BIM 59

Qin Zhao (Xi'an University of Technology), Zhaoxi Ma (Xi'an University of Technology), Xinhong Hei (Xi'an University of Technology), Yiyan Zhu (Xi'an University of Technology), and Juntao Niu (China Northwest Building Design Research Institute)

Extrapolation of Discrete Multi-projection Methods for Fredholm Integral Equations of the Second Kind 64

Guangqing Long (Guangxi Teachers Education University Nanning), Lifeng Xuan (Guangxi Teachers Education University Nanning), and Jianjun Chen (Guangxi Teachers Education University Nanning)

Kernelised Rényi Distance for Localization and Mapping of Autonomous Vehicle 69

Guangjing Li (Beijing Union University), Hong Bao (Beijing Union University), Bo Wang (Beijing Union University), and Tao Wu (Beijing Union University)

Forward Vehicle Detection Based on Incremental Learning and Fast R-CNN 73

Kaijing Shi (Beijing Union University), Hong Bao (Beijing Union University), and Nan Ma (Beijing Union University)

New Protocols on Group Consensus of Continuous-Time Multi-agent Systems 77

Xinlei Feng (Leshan Normal University) and Xiaoli Yang (Leshan Normal University)

The Effect of Feasible Region on Imbalanced Problem in Constrained Multi-objective Optimization 82

Jiabin Lin (Guangdong University of Technology), Hai-Lin Liu (Guangdong University of Technology), and Chaoda Peng (Guangdong University of Technology)
Block DGMRES Algorithm for the Drazin-Inverse Solution of Singular Nonsymmetric Linear System with Multiple Right-Hand Sides 87

Jing Meng (Taishan University) and Yaokun Wu (Taishan University)

Pattern Recognition and Knowledge Discovery 1

Sensors Validation Based on Bayesian Classifiers 91

Peng Sun (Northwestern Polytechnical University), Ziyuan Wu (Northwestern Polytechnical University), Haifeng Yang (Northwestern Polytechnical University), Xiaoxiao Liu (Northwestern Polytechnical University), and Kang Chen (Shaanxi Branch of China Post Group Corporation)

Local Probabilistic Matrix Factorization for Personal Recommendation 97

Wenping Ma (Xidian University), Yue Wu (Xidian University), Maoguo Gong (Xidian University), Can Qin (Xidian University), and Shanfeng Wang (Xidian University)

Cell Image Classification Based on the Support Vector Machine and D-S Evidence Theory 102

Miao Ye (Guilin University of Electronic Technology), Hongbing Qiu (Guilin University of Electronic Technology), Yong Wang (Guilin University of Electronic Technology), and Fan Zhang (Guilin University of Electronic Technology)

Research on Flower Image Classification Using Sum-Product Networks 107

Xiaojie Shi (Xidian University)

Binary Histogram of Oriented Gradients Based Dynamometer Card Recognition 111

Xiaoma Xu (PetroChina Research Institute of Petroleum Exploration and Development), Renbin Gong (PetroChina Research Institute of Petroleum Exploration and Development), Yinghao Li (PetroChina Research Institute of Petroleum Exploration and Development), Jinhuo Li (PetroChina Research Institute of Petroleum Exploration and Development), Qun Li (PetroChina Research Institute of Petroleum Exploration and Development), and Zhenzhen Xu (PetroChina Research Institute of Petroleum Exploration and Development)

Research on Identifying Emotion Sentence Based on Fuzzy Information Granulation 115

Qiong Shen (Jiangsu College of Nursing), Bin Gui (Huaiyin Normal University), and Jianlin Zhu (Renmin University of China)

Salient Object Detection Via Nonconvex Structured Matrix Decomposition 120

Xiaoting Zhang (Shenzhen University), Xiaoli Sun (Shenzhen University), and Xiajun Zhang (Shenzhen Polytechnic)

Image Matching Method Based on Multi-scale Corner Detection 125

Jing Gao (Xi’an Research Institute of High-tech) and Xing-fu Cai (Xi’an Research Institute of High-tech)

Multi-focus Image Performance Evaluation Method Based on the Extraction and Combination of Multiple Metrics 130

Weitong Li (Guangdong University of Technology), Yu Cheng (Guangdong University of Technology), Yuehui Sun (Guangdong University of Technology), and Shaoqiu Xu (Guangdong University of Technology)
Extracting Company-Specific Keyphrases from News Media .......................................................... 135
Qiang Pan (Beijing Institute of Technology), Ping Guo (Beijing Normal University), Xin Xin (Beijing Institute of Technology), and Junshuai Liu (Beijing Institute of Technology)

Spark-Based Feature Selection Algorithm of Network Traffic Classification ........................................ 140
Wenlong Ke (Guilin University of Electronic Technology), Yong Wang (Guilin University of Electronic Technology), Xiaochun Lei (Guilin University of Electronic Technology), and Bizhong Wei (Guilin University of Electronic Technology)

Decycling Number of Crossed Cubes CQn ................................................................. 145
Xirong Xu (Dalian University of Technology), Soomro Pir Dino (Dalian University of Technology), Huifeng Zhang (Dalian University of Technology), Huijun Jiang (Dalian University of Technology), and Cong Liu (Dalian University of Technology)

Data Mining and Clustering

Research on Emotional Word Clustering Based on Affinity Propagation ............................................ 151
Bin Gui (Huaiyin Normal University) and Qiong Shen (Jiangsu College of Nursing)

A Method for Heterogeneity Analysis of Complex Diseases Based on Clustering Algorithm .................. 155
Xiong Li (East China Jiaotong University), Che Wang (East China Jiaotong University), Liyue Liu (East China Jiaotong University), and Xuewen Xia (East China Jiaotong University)

On Gradient Weighting Based Fuzzy Clustering for Graph Data ...................................................... 159
Shihou Liu (Yunnan Minzu University Kunming), Liping Jia (Leshan Normal University), and Fusheng Yu (Beijing Normal University)

Analysis of Big-Data Based Data Mining Engine ................................................................. 164
Xinxin Huang (Guangdong University of Science and Technology) and Shu Gong (Guangdong University of Science and Technology)

A New Weight Based Density Peaks Clustering Algorithm for Numerical and Categorical Data .......... 169
Wuning Tong (Xidian University), Yuping Wang (Xidian University), Junkun Zhong (Xidian University), and Wei Yan (Xidian University)

Credit Risk Assessment Algorithm Using Deep Neural Networks with Clustering and Merging ............ 173
Ying Li (Northwest Normal University), Xianghong Lin (Northwest Normal University), Xiangwen Wang (Northwest Normal University), Fanqi Shen (Northwest Normal University), and Zuzheng Gong (People’s Liberation Army Troops)

A Method of Improved CNN Traffic Classification ................................................................. 177
Huiyi Zhou (Guilin University of Electronic Technology), Yong Wang (Guilin University of Electronic Technology), Xiaochn Lei (Guilin University of Electronic Technology), and Yuming Liu (Guilin University of Electronic Technology)

Jiai He (Lanzhou University of Technology), Panpan Du (Lanzhou University of Technology), and Xing Chen (Lanzhou University of Technology)
Global Optimization Methods 1

Evolutionary Multi-tasking Single-Objective Optimization Based on Cooperative Co-evolutionary Memetic Algorithm 197

Qunjian Chen (Shenzhen University), Xiaoliang Ma (Shenzhen University), Zexuan Zhu (Shenzhen University), and Yiwen Sun (Shenzhen University)

Resource Allocation for D2D Underlay Communication Systems Using PSO 202

Qiang Wang (Yulin Normal University), Tiejun Chen (Yulin Normal University), and Hai-Lin Liu (Guangdong University of Technology)

An Improved Binary Chicken Swarm Optimization Algorithm for Solving 0-1 Knapsack Problem 207

Meng Han (Xidian University) and Sanyang Liu (Xidian University)

An Adaptive Artificial Bee Colony Algorithms Based on Global Best Guide 211

Jiangshan Liu (Shaanxi Normal University), Yumei Zhang (Shaanxi Normal University), and Shulin Bai (Northwestern Polytechnical University)

An Algorithm for Global Optimization Based on CFO-BFGS 216

Rui Sun (Xi’an University of Science and Technology)

A New Filled Function Method for the Non-convex Global Optimization 219

Baoming Qiao (Xi’an University of Science and Technology), Le Gao (Xi’an University of Science and Technology), and Fei Wei (Xi’an University of Science and Technology)

A Gravitation-Based Chaos Water Cycle Algorithm for Numerical Optimization 224

Jiehao Guo (Shaanxi Normal University), Xingbao Gao (Shaanxi Normal University), and Mengnan Tian (Shaanxi Normal University)

A New Local Searching Strategy for Global Optimization with a Large Number of Local Optimum 229

Fei Wei (Xi’an University of Science and Technology), Shugang Li (Xi’an University of Science and Technology), and Jinfeng Xue (31662 Army)

A Teaching-Learning-Based Optimization with Uniform Design for Solving Constrained Optimization Problems 233

Liping Jia (Leshan Normal University) and Zhonghua Li (Leshan Normal University)
Cryptography and Cryptanalysis 1

Boolean Matrix Masking for SM4 Block Cipher Algorithm 238
Sihang Pu (Shanghai Jiao Tong University), Zheng Guo (Shanghai Jiao Tong University), Junrong Liu (Shanghai Jiao Tong University), Dawu Gu (Shanghai Jiao Tong University), Yingxuan Yang (State Grid Liaoning Electric Power Research Institute), Xiaoke Tang (Beijing Smart-Chip Microelectronics Technology Co.), and Jie Gan (Beijing Smart-Chip Microelectronics Technology Co.)

Analysis and Improvement of True Random Number Generator Based on Autonomous Boolean Network 243
Lihua Dong (Xidian University), Hui Yang (Xidian University), and Yong Zeng (Xidian University)

Practical Partial-Nonce-Exposure Attack on ECC Algorithm 248
Kaiyu Zhang (Shanghai Jiao Tong University), Sen Xu (Shanghai Jiao Tong University), Dawu Gu (Shanghai Jiao Tong University), Haihua Gu (Shanghai FFan Technology), Junrong Liu (Shanghai Jiao Tong University), Zheng Guo (Shanghai Jiao Tong University), Ruitong Liu (State Grid Liaoning Electric Power Research Institute), Liang Liu (Beijing Smartchip Microelectronics Technology), and Xiaobo Hu (Beijing Smartchip Microelectronics Technology)

LSSS Matrix-Based Attribute-Based Encryption on Lattices 253
Jian Zhao (Zhengzhou Information Science Technology Institute) and Haiying Gao (Zhengzhou Information Science Technology Institute)

Information Security and Integrity 1

Social Networks Privacy Preserving Data Publishing 258
Safia Bourahla (Université Blida 2) and Yacine Challal (Ecole nationale supérieure d’informatique (ESI))

A Kind of Knowledge Metadata Management Model Research Based on Semantic Grid 263
Chunyan Zhang (College of Foreign Trade and Business Chongqing Normal University), Yan Ma (Graduate School Chongqing Normal University), Huili Hu (College of Computer and Information Science Chongqing Normal University), and Miaomiao Ren (College of Computer and Information Science Chongqing Normal University)

XGBoost-Based Android Malware Detection 268
Jiong Wang (Chinese Academy of Sciences), Boquan Li (Chinese Academy of Sciences), and Yuwei Zeng (Chinese Academy of Sciences)

Conformance Checking and QoS Selection Based on CPN for Web Service Composition 273
Liping Chen (Weinan Normal University) and Weitao Ha (Weinan Normal University)

Network Security 1

Optimization Design and Realization of Ceph Storage System Based on Software Defined Network 277
Duo Wu (Guilin University of Electronic Technology), Yong Wang (Guilin University of Electronic Technology), Hao Feng (Guilin University of Electronic Technology), and Yiming Huan (Guilin University of Electronic Technology)
Risk-Aware Leakage Resiliency for Wireless Sensor Network Nodes. 282

Chaoqun Yang (Beijing Information Science and Technology University),
Xiangyu Li (Tsinghua University), Yongchang Liu (Tsinghua University),
and Shujuan Yin (Beijing Information Science and Technology University)

Traffic Identification of Mobile Apps Based on Variational Autoencoder Network. 287

Ding Li (Information Engineering University), Yuefei Zhu (Information Engineering University), and Wei Lin (Information Engineering University)

Multi-hop Based Centrality of a Path in Complex Network. 292

Lingjie Zhou (Xidian University), Yong Zeng (Xidian University), Yi He (Xidian University), Zhongyuan Jiang (Xidian University), and JianFeng Ma (Xidian University)

A Survey of Network Reconstruction on Social Network. 297

Longfei Wang (Xidian University), Yong Zeng (Xidian University), Zhongyuan Jiang (Xidian University), Zhihong Liu (Xidian University), and Jianfeng Ma (Xidian University)

Security Methodologies and Management 1

DPETs: A Differentially Private ExtraTrees. 302

Chunmei Zhang (Guangdong Power Grid Zhongshan Power Supply Bureau),
Yang Li (Guangdong University of Technology), and Zibin Chen (Guangdong University of Technology)

Using Searchable Encryption for Privacy-Aware Orchestrated Web Service Composition. 307

Imen Khabou (Sfax University), Mohsen Rouached (Sultan Qaboos University), Alexandre Viejo (Universitat Rovira i Virgili), and David Sánchez (Universitat Rovira i Virgili)

A Vision-Based GPS-Spoofing Detection Method for Small UAVs. 312

Yinrong Qiao (East China Normal University), Yuxing Zhang (East China Normal University), and Xiao Du (East China Normal University)

Enhancing Anonymity of Bitcoin Based on Ring Signature Algorithm. 317

Yi Liu (National University of Defense Technology), RuiLin Li (National University of Defense Technology), Xingtong Liu (National University of Defense Technology), Jian Wang (National University of Defense Technology), Chaoying Tang (National University of Defense Technology), and Hongyan Kang (National University of Defense Technology)

System Analysis and Modeling

Curiosity-Driven Intrinsic Motivation Cognitive Model in Perception-Action Loop. 322

Jing Chen (Tianjin University of Technology and Education) and Yanan Yu (Tianjin University of Technology and Education)
Intelligent Algorithms and Models 2

A Widely Linear Affine LMS Adaptive Algorithm with Momentum Acceleration for DS-CDMA MAI
Yuanjian Zhou (Guangdong Police College) and Xiaohui Yang (Guangdong Police College)
Dynamics of a Saturation Incidence SIRS Epidemic Model with Pulses at Different Moments 367
Wentao Huang (Guilin University of Aerospace Technology), Guoqiang Deng (Guilin University of Electronic Technology), Aimin Tang (Guilin University of Electronic Technology), Lijie Hao (Guilin University of Electronic Technology), Guirong Jiang (Guilin University of Electronic Technology), and Wentao Huang (Guilin University of Aerospace Technology)

Adaptive Fireworks Algorithm Based on Simulated Annealing 371
Wenwen Ye (Guangdong University of Technology) and Jiechang Wen (Guangdong University of Technology)

Toward Automatic Review of Bridge Template Turnover Based on Building Information Modeling 376
Qin Zhao (Xi’an University of Technology), Qing Tian (Xi’an University of Technology), Xinhong Hei (Xi’an University of Technology), Yuchao Li (Xi’an University of Technology), and Zhaoxi Ma (Xi’an University of Technology)

A New Algorithm for Computing All Solutions of an Absolute Value Equation 381
Jing Li (Xi’an University of Science and Technology), Jie Liu (Xi’an University of Science and Technology), Meili Wang (Xi’an University of Science and Technology), and Fei Wei (Xi’an University of Science and Technology)

The Asymptotic Growth Behavior of Entire Solutions to Higher Dimensional Polynomial Cauchy-Riemann Equations 385
Zhongwei Si (Leshan Normal University)

A Predictive Control Algorithm Based on Driving Behavior Data Model 390
Xiangmin Han (Beijing Union University), Hong Bao (Beijing Union University), Zuxing Xuan (Beijing Union University), and Feng Pan (Beijing Union University)

Possible Transitions Between Types of Pseudoknots of RNA Structure 395
Qingxia Kong (Shandong Jianzhu University), Yaoyao Fu (Shandong Jianzhu University), and Zhendong Liu (Shandong Jianzhu University)

The Method of Integrated Pipeline Intelligent Conversion of BIM Design Model into Fine BIM Construction Model 400
Shaoxiong Ma (Xi’an University of Science and Technology), Qin Zhao (Xi’an University of Science and Technology), Xinhong Hei (Xi’an University of Science and Technology), and Canli Chen (Xi’an University of Science and Technology)

An Algorithm of Curved Path Tracking with Prediction Model for Autonomous Vehicle 405
Jun Yang (Beijing Union University), Hong Bao (Beijing Union University), Nan Ma (Beijing Union University), and Zuxing Xuan (Beijing Union University)

Intelligent Systems with Applications 2

Motion Segmentation Using Collaborative Low-Rank and Sparse Subspace Clustering 409
Yao Zhang (Shenzhen University) and Min Li (Shenzhen University)
Regression Model of Autonomous Lateral Rectification with Driver Perception .............................. 415
Liang Qiao (Beijing Union University), Hong Bao (Beijing Union University), Zuxing Xuan (Beijing Union University), and Qing Yang (Beijing Union University)

Segmental Offset-Mapping Parallel Coordinates for Multidimensional Integer Dataset .......................... 419
Hui Li (Beijing Union University), Qin He (Beijing Union University), Hong Bao (Beijing Union University), Nan Ma (Beijing Union University), and Guilin Pang (Beijing Union University)

Research on the Pricing Strategy of Manufacturer's Dual Channel under the Closed-Loop Supply Chain ........... 423
Xiaohao Liang (China JiLiang University) and Zuqing Huang (China JiLiang University)

Pedestrian Detection Method Based on Faster R-CNN ........................................................................ 427
Hui Zhang (Smart City College, Beijing Union University), Yu Du (College of Robotics, Beijing Union University), Shurong Ning (Smart City College, Beijing Union University), Yonghua Zhang (Smart City College, Beijing Union University), Shuo Yang (Smart City College, Beijing Union University), and Chen Du (Beijing Key Laboratory of Information Service Engineering, Beijing Union University)

Agent-Based Simulation of Evacuation Considering Extreme Weather in Tourist Areas .............................. 431
Lei Li (Tianjin University), Lindi Xiao (Tianjin University), Meng Zhang (Tianjin University), Jingyi Kong (Tianjin University), and Hui Sun (Tianjin University)

Dynamics of a Stochastic SIS Epidemic Model with Birth Pulses and Pulse Treatments .......................... 435
Guoqiang Deng (Guilin University of Electronic Technology), Aimin Tang (Guilin University of Electronic Technology), Miaomiao Xing (Guilin University of Electronic Technology), Lin Ling (Guilin University of Electronic Technology), Guirong Jiang (Guilin University of Electronic Technology), and Wentao Huang (Guilin University of Aerospace Technology)

A New Difference Scheme for Hyperbolic Partial Differential Equations .............................................. 439
Gaochang Zhao (Xi’an University of Science and Technology), Kewei Jie (Xi’an University of Science and Technology), and Jie Liu (Xi’an University of Science and Technology)

Pattern Recognition and Knowledge Discovery 2

Research on Information Propagation Method Based on Individual User Characteristics ......................... 442
Lejun Zhang (Yangzhou University), Weijie Zhao (Harbin Engineering University), and Chunhui Zhao (Yangzhou University)

A KNN Match Based Tracking-Learning-Detection Method with Adjustment of Surveyed Areas .............. 447
Yumin Tian (Xidian University), Lin Deng (Xidian University), and Qiang Li (Xidian University)

A Review of Sentiment Semantic Analysis Technology and Progress ...................................................... 452
Yiming Wang (Xi’an Jiaotong University), Yuan Rao (Xi’an Jiaotong University), and Lianwei Wu (Xi’an Jiaotong University)
View-Normalized Gait Recognition Based on Gait Frame Difference Entropy Image  456
Zhanli Li (Xi’an University of Science and Technology), Pengrui Yuan
(Xi’an University of Science and Technology), Fang Yang (Xi’an
University of Science and Technology), and Hong-an Li (Xi’an
University of Science and Technology)

A Weighted Error Compensation Algorithm for Image Denoising Based on Noise Variance Estimation  460
Bin Zhou (Southwest Petroleum University), Xuemei Duan (Southwest
Petroleum University), and Jun Feng (Chengdu University of Technology)

Unsupervised Off-Topic Essay Detection Based on Target and Reference Prompts  465
Xia Li (Key Laboratory of Language Engineering and Computing Guangdong
University of Foreign Studies), Qifan Wen (School of Information
Science and Technology Guangdong University of Foreign Studies), and
Kongxin Pan (School of Information Science and Technology Guangdong
University of Foreign Studies)

The Algorithm and Scheme of Prediction in RNA Folding Structure with Pseudoknots  469
Zhendong Liu (Shandong Jianzhu University), Qingxia Kong (Shandong
Jianzhu University), Yaoyao Fu (Shandong Jianzhu University), Hongchao
Ye (Tobacco Company of Henan Province), Shimin Zhao (Luoyang Branch),
Xinhong Su (Tobacco Company of Henan Province), Kai Jiang (Tobacco
Company of Henan Province), Hui Wang (Tobacco Company of Henan
Province), Kunle Dong (Tobacco Company of Henan Province), Zhenxiong
Song (Tobacco Company of Henan Province), and Yujie Wang (Tobacco
Company of Henan Province)

Data Mining and Clustering 2

Waveform Compensation of ECG Data Using Segment Fitting Functions for Individual Identification  475
Chenguang He (North China University of Water Resources and Electric
Power), Wei Li (Shenzhen Qianhai Weizhong Bank Co.), and David Chik
(Anglia Ruskin University)

Performance Analysis of Classification Algorithms for Activity Recognition Using Micro-Doppler
Feature  480
Yier Lin (University of Electronic Science and Technology of China)
and Julien Le Kernec (University of Glasgow)

A Comprehensive Study of Blind and Non-blind Deconvolution Methods Applied to Spectrum Extraction  484
Hang Yu (Beijing Normal University Image Processing and Pattern
Recognition Laboratory), Zhen Wang (Beijing Normal University Image
Processing and Pattern Recognition Laboratory), Qian Yin (Beijing
Normal University Image Processing and Pattern Recognition
Laboratory), and Ping Guo (Beijing Normal University Image Processing
and Pattern Recognition Laboratory)

Modified Binary Cuckoo Search for Feature Selection: A Hybrid Filter-Wrapper Approach  488
Yun Jiang (Northwest Normal University), Xi Liu (Northwest Normal
University), Guolei Yan (Northwest Normal University), and Jize Xiao
(Northwest Normal University)

A Research on the Improvement of Dual Optimization on BP Neural Network  492
Ruliang Wang (Guangxi Teachers Education University) and Yang Xuan
(Guangxi Teachers Education University)
Global Optimization Methods 2

Modified Particle Swarm Optimization Algorithm for Engineering Structural Optimization Problem .504
Yanzhi Ren (Xidian University) and Sanyang Liu (Xidian University)

Solution Strategy for Bilevel Linear Programming in Fuzzy Random Circumstances .508
Aihong Ren (Baoji University of Arts and Sciences) and Xingsi Xue
(Fujian University of Technology)

A New Filled Function Method with Unconstrained Global Optimization .512
Xiaolin Yang (Chengdu University of Technology), Bin Zhou (Southwest Petroleum University), and Jun Feng (Chengdu University of Technology)

Gravitational Search Algorithm with a New Technique .516
Juan Li (Shaanxi Normal University) and Ning Dong (Shaanxi Normal University)

A Mixed Conjugate Gradient Method for Unconstrained Optimization Problem .520
Baoming Qiao (Xi’an University of Science and Technology), Liping Yang (Xi’an University of Science and Technology), Jie Liu (Xi’an University of Science and Technology), and Yanru Yao (Xi’an University of Science and Technology)

Cryptography and Cryptanalysis 2

Efficient and Constant Time Modular Inversions Over Prime Fields .524
Sen Xu (Shanghai Jiao Tong University), Haihua Gu (Shanghai FFan Technology), Lingyun Wang (Shanghai Viewsource Information Science & Technology co.), Zheng Guo (Shanghai Jiao Tong University), Junrong Liu (Shanghai Jiao Tong University), Xiangjun Lu (Shanghai Jiao Tong University), and Dawu Gu (Shanghai Jiao Tong University)

Side Channel Attack on SM4 Algorithm with Ensemble Method .529
Mengmeng Xu (Tsinghua University), Liji Wu (Tsinghua University), and Xiangmin Zhang (Tsinghua University)

Ciphertext Number Full Operations Based on Paillier Algorithm .533
Gaoqiong Yang (Wuhan University of Technology) and Yihong Long (Wuhan University of Technology)
Information Security and Integrity 2

Document Sensitivity Classification for Data Leakage Prevention with Twitter-Based Document Embedding and Query Expansion  
Lap Q. Trieu (University of Science, VNU-HCM), Trang-Nguyen Tran (University of Science, VNU-HCM), Mai-Khiem Tran (University of Science, VNU-HCM), and Minh-Triet Tran (University of Science, VNU-HCM)

Improving the Cooperation of Fuzzing and Symbolic Execution by Test-cases Prioritizing  
Jiaxi Ye (College of Electronic Science National University of Defense Technology), Bin Zhang (College of Electronic Science National University of Defense Technology), Ziqing Ye (China Marine Development and Research Center), Chao Feng (College of Electronic Science National University of Defense Technology), and Chaojing Tang (College of Electronic Science National University of Defense Technology)

S2F: Discover Hard-to-Reach Vulnerabilities by Semi-Symbolic Fuzz Testing  
Bin Zhang (National University of Defense Technology), Jiaxi Ye (National University of Defense Technology), Chao Feng (National University of Defense Technology), and Chaojing Tang (National University of Defense Technology)

G-FQZip: Lossless Reference-Based Compression of FASTQ Files Using GPUs  
Cong Peng (Shenzhen University), Qingjin Deng (Shenzhen University), Zhian Huang (Shenzhen University), Yiwen Sun (Shenzhen University), and Zexuan Zhu (Shenzhen University)

CombinedPWD: A New Password Authentication Mechanism Using Separators Between Keystrokes  
Wantong Zheng (Nankai University) and Chunfu Jia (Nankai University)

Secure System Logon Based on IBC and Mobile Terminal  
Ying Liu (Wuhan University of Technology), Yihong Long (Wuhan University of Technology), Xu Zhou (Wuhan University of Technology), and Fengli Li (Wuhan University of Technology)

Network Security 2

An Implementation of Trojan Side-Channel with a Masking Scheme  
Wenlin Meng (Shanghai Jiao Tong University), Wenfeng Zhu (Shanghai Jiao Tong University), Chi Zhang (Shanghai Jiao Tong University), Junrong Liu (Shanghai Jiao Tong University), Zheng Guo (Shanghai Jiao Tong University), Dawu Gu (Shanghai Jiao Tong University), Wei Fan (State Grid Liaoning Electric Power Research Institute), Haifeng Zhang (Beijing Smartchip Microelectronics Technology), and Yidong Yuan (Beijing Smartchip Microelectronics Technology)

Reliability Prediction for Web Service Composition  
Weitao Ha (Weinan Normal University)

Centrality Based Privacy Preserving for Weighted Social Networks  
Mengli Liu (Xidian University), Yong Zeng (Xidian University), Zhongyuan Jiang (Xidian University), Zhihong Liu (Xidian University), and Jianfeng Ma (Xidian University)

A Secure Web Email System Based on IBC  
Bo Hao (Wuhan University of Technology), Yihong Long (Wuhan University of Technology), and Jinglin Wu (Wuhan University of Technology)
Security Methodologies and Management

An Approach to Verifying Data Integrity for Cloud Storage 582
Yindong Chen (Shantou University), Liping Li (Shantou University), and Ziran Chen (Shantou University)

Challenges for the Comprehensive and Integrated Information Security Management 586
Juhani Anttila (International Academy for Quality (IAQ)) and Kari Jussila (University of Helsinki)

A Frequency-Based Leakage Assessment Methodology for Side-Channel Evaluations 590
Wan Lei (Shanghai Fudan Microelectronics Group Company Limited), Lihui Wang (Shanghai Fudan Microelectronics Group Company Limited), Weijun Shan (Shanghai Fudan Microelectronics Group Company Limited), Kun Jiang (Shanghai Fudan Microelectronics Group Company Limited), and Qing Li (Shanghai Fudan Microelectronics Group Company Limited)

System Analysis and Modeling

DeepSense-Inception: Gait Identification from Inertial Sensors with Inception-like Architecture and Recurrent Network 594
Ha V. Hoang (University of Information Technology, VNU-HCM) and Minh-Triet Tran (University of Science, VNU-HCM)

Prediction of Stock Market by Principal Component Analysis 599
Muhammad Waqar (University of Engineering and Technology Taxila), Hassan Dawood (University of Engineering and Technology Taxila), Ping Guo (Beijing Normal University Beijing), Muhammad Bilal Shahnawaz Ghazanfar (University of Engineering and Technology Taxila), and Mustansar Ali Ghazanfar (University of Engineering and Technology Taxila)

Evaluation of Fiber Tracking Results from UKF Tractography Methods 603
Na Wang (Beijing Institute of Technology), Wenyao Zhang (Beijing Institute of Technology), and Wen Zhao (Beijing Institute of Technology)

Predicting the Change on Stock Market Index Using Emotions of Market Participants with Regularization Methods 607
Yu Li (Zhuhai College of Jilin University), Rui Ma (Zhuhai College of Jilin University), Honghao Zhao (Macau University of Science and Technology), Shi Qiu (Macau University of Science and Technology), and Ziyang Hu (Macau University of Science and Technology)

Construction of 'One-Two-Six-Two' Practical Teaching System of Human Resource Management Specialty 611
Dongyi He (City College of Dongguan University of Technology) and Xing Wang (City College of Dongguan University of Technology)

Optimal Allocation of Water Resources Based on Central Force Optimization 615
Jie Liu (Xi’an University of Science and Technology) and Fei Liang (Xi’an University of Science and Technology)

Research on Field Patterns in Circular-Shaped Microshield Lines 619
Hai Sun (Leshan Normal University)