2018 5th International Conference on Systems and Informatics (ICSAI 2018)

Nanjing, China
10-12 November 2018

Pages 1-654

IEEE Catalog Number: CFP1873R-POD
ISBN: 978-1-7281-0121-7

Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number: CFP1873R-POD
ISBN (Print-On-Demand): 978-1-7281-0121-7
ISBN (Online): 978-1-7281-0120-0

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

Table of Content

Control and Automation Systems

Control System Theory

Adaptive Control for Exponential Synchronization of Delayed Memristive Neural Networks
Ruimei Zhang, Shouming Zhong, Deqiang Zeng..... 1

Based on "Internet +" road parking intelligent management system
Lanxin Hu, Liangnuo Xu..... 6

Coordinated and Voltage Sharing Control for Input-Parallel and Output-Series Connected PV DC Boost Converter
Ming Li, Shengshan Li, Yanbo Che, Jinhuan Zhou..... 12

Design and Implementation of Automatic Acquisition and Processing System for Balance Based on ARM and FPGA
Xiaoyang Wang, Ting Zeng, Shen Yin, Yan Wang, Ziyang Hu..... 19

Intelligent Tracking Car Path Planning Based on Hough Transform and Improved PID Algorithm
Zixin Mu, Zifan Li..... 24

Parameter Optimization of MEWMA Control Chart Based on SVDD
Ying Zhang, Yulin Hou..... 29

Research and Implementation of UHPLC Pump Dual-axis Cooperative Control
Xingya Wei, Guoxin Wang, Shen Yin, Xiaoyang Wang, Ziyang Hu..... 34

Study and Application of the Equal-area Smoothing Compensation Control Method on the UHPLC Pump
Xu Tan, Jiabo Zhang, Shen Yin, Hongtao Fan, Jingwei Lyu..... 39

Control System Applications

A High Accuracy Attitude Adjustment Method for Spacecraft Mass Property Measurement
Rongrong Yu, Ligang Dong, Xiaoyang Wang, Xu Tan, Yangcheng Zhang..... 45

A kind of RFID Security Protocol Based on the Algorithm of Present
Xin Gao, Shengqi Lv, Xingpeng Li, Weijia Ji, Yang He..... 50

Design of radar electromagnetic environment simulation system based on Altera Stratix® III series FPGA
Pan Li, Rui Zhang, Jing Zhang, Jie Li, Guanxing Zhao..... 56

Formation control of multiple UAV's via decentralized control approach
Zainanwar Ali, Muhammad Shafiq, Lubna Farhi..... 61

Piecewise Linear Interpolation Algorithm in the High Precision Electronic System
Hui Nie, Haifeng Chen, Jianwen Shi, Ruonan Chang..... 65

Research And Implementation Of Two-Layer Fall Detection Algorithm
Tongyue Gao, Jia Yang, Kaida Huang, Fengshou Zhao, Qingxuan Hu.....70

Research on application of ZigBee technology in PID controller parameter tuning
Xianfeng Liu, Mingqian Wang..... 75

Plasma Probe Measurement Control System Design
Jianhua Wen..... 80

Computer Vision

Design and Realization of Counterbore Inspection System Based on Machine Vision
Jiming Sa, Feng Ye, Yue Shao, Yilun An, Shaogang Wan..... 87

Joint Deep Hashing and Object Detection for Image Retrieval
Wenlong Cheng, Shaosheng Li, Pingyu Wang, Sheng Gao..... 93

Multi-scale FAST feature extraction heterogeneous design based on FPGA
Rongtao Ding, Hanxu Sun, Ping Ye..... 100

Video Stream Relocalization With Deep Learning
Tingting Hu, Hanxu Sun..... 109

Robotics

A robot state estimator based on multi-sensor information fusion
Yang Zhou, Ping Ye, Yunhang Liu..... 115

Mobile robot multi-resolution full coverage path planning algorithm
Yunfei Ma, Hanxu Sun, Ping Ye, Chang Li..... 120

Other Topics in Computer Control and Robotics

Exemplar Different-Level Quadratic Minimization, Division-by-Zero Issue, and Comparative Solutions
Yihong Ling, Min Yang, Jian Li, Mingzhi Mao, Yunong Zhang..... 126

Git-based Version Control for Beamline Control System at the Shanghai Synchrotron Radiation Facility
Ying Zhao, Yongnian Zhou, Chun Hu, Xiangzhi Zhang, Zhaohong Zhang.....134

Power and Energy Systems

Modeling, Control and Diagnostics of Power Systems

A Comparative Study of Ensemble Support Vector Regression Methods for Short-term Load Forecasting
Jianhua Ye, Li Yang..... 139

Analysis of waste heat recovery of power plant thermal system based on organic Rankine cycle
Lei Wang, Ruiqing Zhang, Yang Jiang..... 144

Extraction of wave characteristic parameters based on MEMS sensor
Lin Chai, Huikang Liu..... 149

Operation parameters analysis of gas steam combined cycle
Qianyu Yang, Lei Wang, Yang Jiang..... 155

Research on Distributed Real Time Data Space SCADA Cluster for Large Power Grid
Hao Wang, Fenlan Jin, Zeiping Gong, Hui Xia, Wei Chen..... 161

Research on SVPWM control strategy of three phase VIENNA rectifier
Hongli Cheng, Jing Huang..... 166

Power Electronics

A Control Method for Parallel Inverter with Adaptive Virtual Impedance
Ben Nie, Xiangming Li, Yan Zhuang..... 171

Algorithm for recognizing nonlinear-load-current states based on dynamic iterative step size
Zicheng Li, Gongjian Zhao, Guohai Liu, Zhaoling Chen, Dezhi Xu..... 176

Simulation the content of Indium of GaN-based LEDs on Patterned Substrate
Dongsheng Peng, Maoxian Zhang..... 182

Wind, Solar and Nuclear Energy

An Improved Maximum Power Point Tracking Algorithm With Golden Section Search for Photovoltaic System
Beigao Chen, Chun Xiao, Tingyang Chen..... 187

Multi-Step wind power forecasting model Using LSTM network, Similar Time Series and LightGBM
Yukun Cao, Liai Gui..... 192

Smart Grids and Power Management

A Short-Term Power Data Forecasting Algorithm Based on IA-RBF Neural Networks
Jing Li, Longwei Tian, Yanqing Wang..... 198

Economic dispatch of active distribution power system with multi-microgrid based on non-cooperation games theory
Guanhua Huang, Junjie Yang, Naifan Xue, Jicheng Fang..... 203

Functional Test for Phasor Data Concentrator in Distribution Network
Weiqing Tao, Xin Zhu, Tuan Zhang, Jinsong Liu, Ping Ling..... 209

IMS Number Transformation Design for SGCC IoT Network
Wenfeng Tian, Yao Wang, Pengfei Zeng, Xiaoyan Sun..... 215

Research on Coordinated Optimal Control Strategy of Residents and Power Grid
Zheng Li, Zongming Guo, Wei He..... 221

Other Topics in Power and Energy Systems

Design of Multi-PMU Real-time Communication Test Software Based on MFC
Weiqing Tao, Tuan Zhang, Lin Li, Dachao Xu..... 226

Design of Operation Reserve Classification System for China Under New Circumstances
Jingwei Ma, Weidong Li, Jiantao Liu, Juanjuan Wang, Lizhong Xu..... 232

Enhancing the utilization of gas engine module exhaust heat by two-stage chillers for combined electricity, heat and refrigeration
Mykola Radchenko, Roman Radchenko, Oleksiy Ostapenko..... 240

Evaluation of Electricity Market Operation Efficiency Based on Analytic Hierarchy Process - Grey Relational Analysis
Quan Chen, Qi Zhou, Ze Sun, Qian Zhou, Si Li..... 245

Low-carbon Comprehensive Benefit Analysis of Integrated Energy Service Provider Under Bundled Cooperation Mode
Yang Song, Lei Wang, Xinhe Zhang, Lei Ma, Xing Li..... 250

Statistical approach to improve the efficiency of air conditioning system performance in changeable climatic conditions
Eugeniy Trushliakov, Mykola Radchenko, Andrii Radchenko, Serhiy Kantor..... 256

The Location of Partial Discharge Source in the Power Transformer with UHF Sensors
Naifan Xue, Junjie Yang..... 261

Intelligent Systems

Pattern Recognition

An effective face recognition framework with subspace learning based on local texture patterns
Fujin Zhong, Shuo Yan, Li Liu, Ke Liu..... 266

Big Data based State Evaluation method for Secondary Devices in Substation
Kang Ye, Jianping Yang, Xiaolu Xu..... 272

Detection and Recognition of Security Detection Object Based on Yolo9000
Zhongqiu Liu, Jianchao Li, Yuan Shu, Dongping Zhang..... 278

Improving Convolutional Neural Network Using Pseudo Derivative ReLU
Zheng Hu, Yongping Li, Zhiyong Yang..... 283

Agent and Autonomous Systems

An Architecture of System of Systems (SoS) for Commercial Flight Security in 5G OGCE
Zhi Lü, Zhongfeng Wang, Yi Lü, Mingzhe Yuan..... 288

Design of Dairy Cow’s Step and Gesture Detection System Based on Multi-sensor and Lora Network
Hui Li, Baoguo Wang..... 294

The Role of Agent Technologies in Personalized Medicine
Ivanovic Mirjana, Semnic Marija..... 299

Knowledge Engineering

A Method For Constructing Knowledge Graph Of Disaster News Based On Address Tree
Yang Wang, Xia Hou..... 305

Classification of Thai Tweets: Mining Treasures from Tweet Heap
Apichai Chan-udom, Karman Chan, Yoshimi Suzuki..... 311

Entity grammar systems and knowledge engineering in the background of big data
Rao Zheng, Yun Wang..... 316

Computational Intelligence

Design of combustible gas concentration detection system
Yang Bo..... 322

Regression Estimation by RBF Networks with Self-Constructing Clustering
Ching-sheng Tu, Shie-jue Lee, Chih-hung Wu..... 327

Research on Improvement of Text Processing and Clustering Algorithms in Public Opinion Early Warning System
Kongyu Yang, Ruijie Miao..... 333

The Crowding Mechanism Genetic Algorithm for Solving Job Scheduling Problem
Zhurong Wang, Mingfang Du, Qindong Sun, Haining Meng..... 338

Artificial Intelligence

A Visual System of Citrus Picking Robot Using Convolutional Neural Networks
Yan-ping Liu, Chang-hui Yang, Huang Ling, Shing Mabu, Takashi Kuremoto..... 344

Automatically Answering Questions with Nature Languages
Hai-tao Zheng, Jin-yuan Chen, Zuo-you Fu, Zi-han Xu, Cong-zhi Zhao..... 350

DESIGN OF REAL-TIME RHYTHM TRACKING SYSTEM BASED ON NEURAL NETWORK
Yuanyuan Sun, Cong Jin, Wei Zhao, Nansu Wang..... 356

How Does the Data set Affect CNN-based Image Classification Performance?
Chao Luo, Xiaojie Li, Lutao Wang, Jia He, Jiliu Zhou..... 361

Human Detection Under UAV: An Improved Faster R-CNN Approach
Hanshan Zhu, Yayun Qi, Haochen Shi, Ning Li, Huiyu Zhou..... 367

Learning Radicals From Tangut Characters
Guangwei Zhang, Yinliang Zhao..... 373

Pedestrian Detection and Tracking Under Dense Crowd
Ge Yang, Siping Chen, Jing Huang, Hui He..... 379

RBF Kernel Parameter Optimization Algorithm in SVM Based on Segmented Dichotomy
Haochen Shi, Haipeng Xiao, Jianjiang Zhou, Ning Li, Huiyu Zhou..... 383

The Design of a Radar Emitter Identification Algorithm Based on Deep Learning
Shi Ziyan, Zhao Guolin, Hu Qiaolin..... 389

The Support Vector Machines Based on XARPSO and it's Application
Qunxian Chen, Zekun Zhou..... 395

Using Different Types of Addition-Subtraction Frequency (ASF) Approach with Different Numbers of Input Variables to Predict Years of Financial Events after Fed Tightening
Chengxu Ye, Ruifeng Wang, Mengling Xiao, Zhongxian Xue, Yunong Zhang.....401

Vehicle Detection under UAV Based on Optimal Dense YOLO Method
Zhi Xu, Haochen Shi, Ning Li, Chao Xiang, Huiyu Zhou..... 407

Intelligent System Applications

CNN-Based Electronic Camouflage Audio Restoration Mechanism
Zhengyu Shi, Lixian Zheng, Xiao Zhang, Yongquan Wang, Libo Wu..... 412

Drift Calibration for Machine Olfaction with an Online Active Learning Approach
Tao Liu, Dongqi Li, Jianjun Chen, Mengya Wu, Yanbing Chen..... 417

Estimation Population Density Built on Multilayer Convolutional Neural Network
Zhihui Yuan, Chongyuan Tao..... 424

Nodes Availability Analysis of Heterogeneous Wireless Sensor Networks Based on NB-IoT Under Malware Infection
Xiaojun Wu, Qiying Cao, Juan Jin, Hong Zhang..... 429

Pavement Distress Detection Based on Transfer Learning
Mingxin Nie, Kun Wang..... 435

Target Tracking Algorithm Based on Deep Learning and Multi-Video Monitoring
Yuncai Liu, Pan Wang, Hongtao Wang..... 440

Uncover Product Review Patterns via Weighted Motifs
Jiandun Li, Pin Lv, Chunlei Ji..... 445

Zero Defect Manufacturing of Microsemiconductors – An Application of Machine Learning and Artificial Intelligence
Zhengwen Huang, Veerendra C Angadi, Morad Danishvar, Ali Mousavi, Maozhen Li.....449

Other Topics in Intelligent Systems

A method of high-precision signal recognition based on higher-order cumulants and SVM
Faquan Yang, Yang Ling, Benjian Hao, Qipei Han..... 455

A Nonintersecting Multipath Routing Protocol for Wireless Sensor Networks
Fu Wang, Qinggang Su..... 460

A Prediction Algorithm for the Fan Tooth Belt Fracture Fault Based on Big Data
Zhihe Yang, Zhe Xiang..... 468

Weighted Gene Co-expression Network Analysis of Gene Modules for Lung Adenocarcinoma
Yuanyuan Zhai, Yue Jiang, Yingli Chen, Qianzhong Li..... 473

Computer Systems and Applications

Distributed Systems, Grid Computing, Cloud Computing, and Services Computing

Otterman: A Novel Approach of Spark Auto-Tuning by The Hybrid Strategy
Haizhou Du, Ping Han, Wei Chen, Yi Wang, Chenlu Zhang..... 478

Study of the Effectiveness of TIVAPDS Treatment on Cancer through BDA
Gangmin Li, Jianze Gu, Xuming Bai..... 484

Parallel Computing

Octopus: Based on Congestion-aware Scheduling in GEO-Distributed Big Data Analytics Cluster
Haizhou Du, Keke Zhang, Zhenchen Yang..... 490

Real-Time and Embedded Systems

Information Collection of Motion Based on Wirless Sensor Network
Xiuping Chen, Caihong Liu, Jinshui Ji, Cairen Pucuo, Wei Zhang..... 496

VLSI

A Time-based Leakage-aware Algorithm for Task Placement and Scheduling Problem on Dynamic Reconfigurable FPGA
Tingyu Zhou, Tieyuan Pan, Zhiguo Bao, Takahiro Watanabe..... 501

Computers in Industry and Manufacturing

Analysis of the Health Status of Railway Vehicle Bearings Based on Improved HDP-HMM
Zaidong Sun, Ning Zhang..... 507

Energy Cost-Oriented Scheduling With Job Prioritization
Jan Busse, Cornelius Rüther, Julia Rieck..... 514

The application of LZMA algorithm in ISCS based on pretreatment
Xudong Xu, Yiran Li.....521

ZigBee-based Temperature Controlling System for Agricultural Greenhouses
Min Xiao.....526

Computers in Education and Learning Technologies

3D Digital Campus System Based on WebGL and API
Ling Lei, Menghua Zuo, Yue Zeng, Hongtao Yang..... 532

Application Research on Virtualized Desktop Technology in Private Colleges and Universities of Art and Design
Shardrom Johnson, Jun Zheng, Yuanchen Liu, Guorui Li, Xinlin Wu..... 538

Cultivating Computational Thinking Among Students Of Liberal Art In Basic Computer Courses
Li Chen, Jiaoxiong Xia, Jie Tao..... 544

Design and Implementation of Early Warning System Based on Educational Big Data
Zhuping Wang, Chenjing Zhu, Zelin Ying, Ying Zhang, Ben Wang..... 549

Research and Development of Chinese Question Bank Information System Based on Web
Beihai Tan, Linjiang Luo, Shuting Cai..... 554

Computers in Biomedical Engineering and Biotechnology

A Superpixel-Classification-Based Method for Breast Ultrasound Images
Yonghao Huang, Qinghua Huang..... 560

An ADMM-net Solution to Inverse Problem of Electrocardiology

Liansheng Wang, Weiqi Wu, Yiping Chen, Changhua Liu..... 565

Dynamic Assessment of Contact Pressure Changes in the Hip Joint Cartialge during Daily Activities

Xianqiang Liu, Xiaoyan Zhang, Shenghua Zhong, Jianming Jiang..... 570

Computers in Transportation

Berth Allocation Considering Fuel Consumption and Turnover Rate in the Mooring Period

Haifeng Xu, Bin Sun, Aoyun Shen, Liangyu Zhong, Weizhi Ying..... 576

Simulation on abnormal behaviors in Metro Station emergency evacuation

Yanlan Mei, Kefan Xie, Kai Cao..... 582

Speeding optimization considering the fuel consumption in the mooring period

Weizhi Ying, Bin Sun, Aoyun Shen, Haifeng Xu, Liangyu Zhong..... 587

Computational Sciences and Engineering

A Cost-Efficient Numerical Algorithm for Evaluating the Determinant of a Quasi-Tridiagonal Matrix

Sumei Li, Jiteng Jia..... 593

Application on Information Island with Information Visualization and Software Engineering

Jiahui Lv, Shardrom Johnson, Guorui Li..... 598

Estimating Path in camera network with non-overlapping FOVs

Zhanli Li, Junchao Wang, Jiaying Chen..... .604

Performance Analysis of Quadratic Permutation Polynomials Network Coding in Wireless Networks

Lang Pei, Fenglin Li, Baolin Sun, Baolin Baolin..... 610

Scientific and Engineering Modeling and Simulations

A novel cuckoo search and its performance analysis

Zhigang Lian, Lihua Lu, Yangquan Chen..... 615

Application of Improved Kalman Filter in High Precision Electronic Scales

Yanming Wang, Haifeng Chen, Jianwen Shi, Hao Huang..... 623

Credibility Assessment of Sonar Signal Simulation System Based on Detection Result Consistency
Yingchun Chen, Yinghua Guo 629

Performance of Narrowband Power Line Communication Based on OFDM
Jie Li 634

The Dynamics of an HTLV-1 System with Cell-Mediated Immune Response
Sumei Li, Jiteng Jia 638

Computer Applications in Other Areas

Chinese Ink Stylized Drawing for Digital Images
Jiawen Li, Yinghua Shen, Ling Lei 644

Data Mining and Analytics for Security and Criminal Investigations
Jianfa Hu 649

Identification of prognostic markers for LUAD based on rank expression of long non coding RNA
Zhiqiang Chang, Hongmei Sun, Wenyuan Zhao, Yongjing Liu, Ning Zhao 655

Image Style Transfer in Deep Learning Networks
Yuanhao Li, Tianying Zhang, Xu Han, Yali Qi 660

Interest-based Modeling Based on Group Wisdom and Its Application in Recommendation Algorithms
Qiang Gao, Xinhua Wang, Lei Guo 665

Malware Detection and Classification based on Parallel Sequence Comparison
Hao Ding, Wenjie Sun, Yihang Chen, Binglin Zhao, Hanren Gui 670

Research on Content-based MOOC Recommender Model
Ran Huang, Ran Lu 676

Other Topics in Systems

Other Topics in Systems

A Fusion Method for Node Importance Measurement in Complex Networks
Fengzeng Liu, Bing Xiao, Hongbin Jin, Qizeng Zhang 682

A New 2D Doppler Steering Method For Beam Synchronization In Format Flying Satellites InSAR Systems

Chipan Lai, Aifang Liu, Dong Mu, Yixuan Zhao..... .687

A system for measuring the printing and coating thickness of iron sheet based on eddy current sensor
Yang Bo..... 692

Adaptive low-gray image enhancement based on BP neural network and improved unsharp mask method
Yuanbing Wang, Langfei Dang..... 697

An Evaluation Method on Radar Emitter Signal Recognition Effect Based on SVM
Jun Han, Xiao-jie Tang, Zhi-kai Tang, Juan Du..... 700

Any ZeaD Formula of Six Instants Having No Quartic or Higher Precision with Proof
Yunong Zhang, Jinjin Guo, Liu He, Yang Shi, Chaowei Hu..... 705

Application of Heuristic Search Algorithm in Sub-pixel Image Segmentation Technology
Xishun Zhang, Dongquan Zhang, Taotao Li, Shubo Yu..... 710

Calibration Device for Test Sieves Based on Image Measuring Instrument
Dong-mei Tang, Yan-hua Zeng, Yun-xia Fu, Bo Zhang..... 717

Extraction micro-Doppler Feature of Precession Targets in OFDM-LFM MIMO Radar
Lixun Han, Bo Tian, Cunqian Feng, Xugusng Xu..... 722

GMDS-ZNN Variants Having Errors Proportional to Sampling Gap as Compared with Models 1 and 2 Having Higher Precision
Jian Li, Guofu Wu, Chumin Li, Mengling Xiao, Yunong Zhang..... 728

Investigation of the High Pressure Controlled-Clearance Deadweight Piston Gauge
Bian Hong, Zhengyu Pan, Shijie Gu, Zhongli Zhang..... 734

Omni-channel Retail Symbiosis Model and Its Empirical Analysis
Baoqin Yu, Xiao Chen, Manchao Cao..... 739

Pedestrian Re-identification Based on Image Enhancement and Over-fitting Solution Strategies
Yong Ding..... 745

Research on Multi-point Calibration Linear Approximation Indoor Positioning Algorithm Based on LED Array
Li Zhao, Zhigang Liu, Dong Wang..... 751

Zhang Matrix Found as an Exception with its Time-Dependent Pseudoinverse Unsolvable by Getz-Masden Dynamic System
Yunong Zhang, Guangyuan Shi, Jian Li, Guofu Wu, Zhiyuan Qi..... 757

Communications and Networking

Ad Hoc and Sensor Networking

Adaptive Cycle Based Sensor Management Method
Shanchao Yang, Kangsheng Tian, Changfei Wu, Renzheng Liu, Weiping Huang.....763

Wireless Communications

A Construction Method of QC-LDPC Codes based on Masking technology
Dongliang Guo..... 769

Joint Social, Energy and Buffer to Select Relay in Relay-Aided D2D Communications
Qiang Xu, Xiaoxiang Wang, Dongyu Wang..... 774

Modeling of Multilayer Graphene at Terahertz with Vector Fitting Method
Quanquan Wang, You Shi, Huazhong Liu..... 780

Regional Cooperative Communication Strategy Based on Device-to-Device Technology
Yinghe Wang..... 785

Triple-Threshold Cooperative Spectrum Sensing Algorithm Based on Energy Detection
Chutian Chen, Yuebin Chen, Jiwu Qian, Juan Xu..... 791

Weighted Hard-Reliability Based Majority-Logic Decoding for NB-LDPC Codes
Tao Gao, Xiurong Ma, Mingxin Liu..... 796

Communications and System Security

A Dynamic and Static Combined Android Malicious Code Detection Method based on SVM
Jinran Du, Huajun Chen, Weijie Zhong, Zhen Liu, Aidong Xu..... 801

Improved Mult-bit Adaptive Quantization algorithm for Physical Layer Security based on Channel Charscteristics
You Wu, Haifei Xia, Cheng Chen..... 807

Quantum Key Supply and Dynamic Adjustment Strategy for Power Dispatch
Wei Deng, Zhuozhi Yu, Yefeng Zhang, Lichen Yi, Yonghong Ma..... 812

Research and implementation of XSS defense method based on Moving Target Defense technology
Chen Ping..... 818

The Noise-like Disguised Scheme for Phusical Layer Security using Phase Rotation and Wavelet Transform
You Wu, Cheng Chen, Haifei Xia..... 823

Communications QoS, Reliability, and Modeling

Improved Cuckoo Algorithm for Spectrum Allocation in Cognitive Vehicular Network
Ruifang Li, Lisha Jin..... 828

Other Topics in Communications and Networking

An Optical Network Flow Control Algorithm Based on Benefit Optimization and Dynamic Path Coefficient
Liang Yun, Wang Yao, Tian Wenfeng, Sun Xiaoyan, Zeng Pengfei..... 834

Optimization method for delay and energy consumption in edge computing micro-cloud system
Weijian Li, Yingyan Jiang, Yiwen Luo, Yan Chen, Peng Lin..... 839

Image, Video, and Signal Processing

Signal Processing

A Hybrid Coding Strategy to Improve Auditory Perception of Cochlear Implant
Baoyin Sun, Xiaojun Zhang, Yan Wang, Zhongzhe Xiao, Di Wu..... 845

Air Quality Index Forecasting Based on SVM and Moments
Wei Wang, Wei-guo Shen, Bin Chen, Rong Zhu, Ya-xin Sun..... 851

Design of Ruminant Sound Detection for Dairy Cows Based on DWT-MFCC
Ning Ding, Xiaodong Cheng, Zhengyi Cui..... 856

Detecting Audio Splicing Forgery Algorithm Based on Local Noise Level Estimation
Xuebo Meng, Chen Li, Lihua Tian..... 861

EEG Recognition of Motor Imagery Based on SVM Ensemble
Yangcheng Zhang, Jingyu Liu, Jianze Liu, Jun Sheng, Jingwei Lv..... 866

Field result of marine controlled source electromagnetic survey for gas hydrates in northern South China Sea

Lipeng Wang, Yuan Li..... 871

Maneuver Target Tracking Based on Grey System Theory
Jianfeng Tao..... 878

Motion Feature Extraction of Ballistic Target in Midcourse
Xuguang Xu, Cunqian Feng, Shuai Chen, Xiaoyu Feng, Mengbo Liu..... .N/A

Non-stationary Events Detection Based on Extrema Value Theory
Radek Marik, Leos Bohac..... 889

Planar-coil-based Micro-detection in Nuclear Magnetic Resonance Spectroscopy
Xiaonan Li, Guoqiang Liu, Shiqiang Li, Hui Xia, Yong Wang..... 895

Sound Source Separation by Instantaneous-Estimation-Based Spectral Subtraction
Kenji Ozawa, Masanori Morise, Shuichi Sakamoto..... 900

Image Processing

3D Mesh Smoothing Method Based on Vertex Classification and Distance Equalization
Wenhao Li..... 906

3D SOM Learning And Neighborhood Algorithm
Xueyan Zhang, Hongsong Li..... 911

A Guided Filtering Method Based On Shen-Castan Operator
Yinan Xing, Jianbin Liu..... 916

A rapid face detection method based on skin color model and local binary gradient feature
Zhiyong Peng, Jun Wu, Guoliang Fan..... 922

An Enhanced Lowrank Algorithm for Image Denoising
Quan Li, Wei Wu, Yang Su..... 928

An Improved Image Segmentation Method Based on Maximum Fuzzy Entropy and Quantum Genetic Algorithm
Chen Chen..... 934

An Improved Least Trimmed Square Hausdorff Distance Finger Vein Recognition
Guanghua Chen, Qinghua Dai, Xiao Tang, Zihao Xu..... .939

An Improved Segmentation for Raw G-BandChromosome Images
Ibrahim Can Yilmaz, Jie Yang, Emrecan Altinsoy, Lei Zhou..... 944

Comparative Study on Plant Feature Detection Algorithms Based Content
Fei Rong, Cheng Naike, Wang Zhanmin, Li Aimin, Li Shasha..... 951

Convolutional Neural Network Based Traffic Sign Recognition System
Shuang Xu, Deqing Niu, Bo Tao, Gongfa Li..... 957

Corrugated Pipe Defect Detection Based on Digital Image Processing
Jiming Sa, Yilun An, Feng Ye, Liu Shi, Jiahui Xu..... 962

Image Artistic Style Migration Based on Convolutional Neural Network
Wei Wang, Wei-guo Shen, Shu-min Guo, Rong Zhu, Bin Chen..... 967

Intelligent Identification Method of Bicycle Logo Based on Haar Classifier
Yufeng Ding, Bo Zhang..... 973

Low Complexity Implementation of Entropy Constrained Scalar Quantization for Image Compression
Jianyu Lin..... 978

Low luminance measurement based on binocular ranging
Chen Zhao, Zhangrong Zhao, Wenzhuo Chen..... .983

Luminance Enhancement Method for Two-photon Microscopy Images of Low-light Ovarian Tissue Cells
Chao Wei, Weiping Liu, Mengzhen Jiang, Lijuan Tang, Guannan Chen.....988

Novel MRI images Enhancement Method based on Dynamic Range Compression and Details Enhancement
Shuang Qiao, Zeqi Wang, Huanyu Li, Chenyi Zhao, Jianing Sun..... 993

Pet Hair Color Transfer Based On CycleGAN
Shimian Zhang, Dexin Yang..... 998

Research on Defect Labeling Method for Detecting Defect of Low Density Polyethylene Plastic Sheeting
Yihong Wang..... 1005

Ship Recognition Method based on Visual Knowledge
Ting-ting Sui, Xiao-feng Wang..... 1010

Species recognition technology based on migration learning and data augmentation
Yisheng Song, Zhijie Lin..... 1016

Video Processing

A Fast Weighted SVT Algorithm
Xin Li, Aritra Dutta..... 1022

Optimization of Feature Point Detection and Matching Algorithm Based on Quadcopter Platform
Yuhao Hu, Bo Liu..... 1027

Other Topics in Signal, Image and Multimedia Processing

A Non-central Point Sound Field Reconstruction Method by Three Loudspeakers
Song Wang, Cong Zhang, Heng Wang..... 1033

Capturing Genre Characteristics of Music Through Feature-Value Analysis
Adam Lefaivre, John Z. Zhang..... 1039

Voice Characteristics of Instant Messaging
Xiao Zhang, Siyuan Fan, Jinglin Tian, Zhengyu Shi..... 1045

Data Engineering and Data Mining

Data Mining Foundations

Dimensionality reduction via adjusting data distribution density
Wei Wang, Wei-guo Shen, Yaxin Sun, Rong Zhu, Bin Chen..... 1052

Entity Alignment Across Knowledge Graphs Based on Representative Relations Selection
Youmin Zhang, Li Liu, Shun Fu, Fujin Zhong..... 1056

The parameter configuration method of DBSCAN clustering algorithm
Song Jinyu, Guo Yiping, Wang Bin..... 1062

Bioinformatics and Medical Informatics

A Convolutional Encoder-Decoder Architecture for Retinal Vessel Segmentation in Fundus Images
Yiqin Lu, Yeping Zhou, Jiancheng Qin..... 1071

Detecting Chronic Diseases from Sleep-Wake Behaviour and Clinical Features
Sarah Fallmann, Liming Chen..... 1076

Mutate relation extraction based on genes network analysis in colon cancer

Yinan Lu, Hangyu Pan..... 1085

Utility Balanced Classification for Automatic Electronic Medical Record Analysis
Liansheng Wang, Qiuhao Xu, Shuo Li..... 1093

Data Mining Applications

A novel composite-kernel based PCM clustering algorithm
Yong Zhang, Rongrong Chen, Jing Cai, Dan Huang..... 1099

A Short Text Semantic Classification Method for Power Grid Service Based on At_GRU Neural Network
Yukun Cao, Junyi Chao..... 1105

An Automatic Interaction Detection Hybrid Model for Bankcard Response Classification
Yan Wang, Sherry Ni, Brian Stone..... 1111

Discovering Transportation Mode of Tourists Using Low-Sampling-Rate Trajectory of Cellular Data
Hewei Hu, Xinning Zhu, Zheng Hu, Jie Wu, Xiaohan Zhang..... 1120

Mining And Application Of Teaching Data—A new conception of multimedia teaching assessment based on residual calculation method
Daomeng Xu, Fang-ai Liu, Lu Jiang, Weiwei Zhang..... 1126

Power Load Curve Clustering Algorithm Based on the Combination of Fast Dynamic Time Warping and Affinity Propagation
Yu Jin, Zhongqin Bi..... 1132

Predicting Sales Performance Based on Polarity Sentiments of Online Reviews and Manifold Dynamics Method
Zixin Dou, Yongjun Hu, Peng Cheng, Lijuan Huang, Jiuzhen Liang..... 1138

Recommendation on Keyword Combination of News Headlines
Sung-shun Weng, Jing-yi Wu..... 1146

Research on Sequential Prediction Model for Gas Pipeline Pressure Value Based on Spatial Correlation
Haoran Sun, Zhanquan Wang, Jiechao Yu..... 1152

The Extendable Mobile Telecommunication Customer Loyalty Modeling
Jun Mou, Huazhu Song, Hasitha Indika Arumawadu..... 1158

The Prediction of Cellphones' Fault Rates with Grey Models

Yun Liu, Buyang Cao, Yahui Liu..... 1165

Data Engineering Technologies

Hierarchical Gated Convolutional Networks with Multi-Head Attention for Text Classification
Haizhou Du, Jingu Qian..... 1170

MLB+-tree: A Multi-level B+-tree Index for Multidimensional Range Query on Seismic Data
Yida Wang, Changhai Zhao, Zengbo Wang, Jiguo Du, Chao Liu..... 1176

Text Classification Method Based on TextCNN for Power Grid User Fault Reporting Information
Yunkun Cao, Tian Zhao..... 1182

Other Topics in Data Mining and Data Engineering

Detecting Multiple Information Sources Based on the Quantum Walk
Xin Wang, Yi Zhang, Kai Lu, Xiaoping Wang, Kai Liu..... 1188

Software Engineering

Software Engineering Methodologies

Improved Detection of User Malicious Behavior through Log Mining based on IHMM
Chenhcen Liu, Yi Zhong, Yuanli Wang..... 1193

Resource-aware Service-oriented Approach for Elderly Healthcare
Vangalur Alagar, Kaiyu Wan..... 1199

Software Systems and Applications

Adaptive Cross-Cloud Service Composition with the Bidirectional QoS Updates
Xiaogang Wang..... 1206

An Empirical Study on the Performance of ESB Applications
Lu Wang, Xiaosong Li..... 1212

Other Topics in Software Engineering

Design and Development of Robot BBS Forum Based on User Experience Theory
Keqin Wang, Yao Gong, Fengjun Wu..... 1218

Vulnerability Detection for Source Code Using Contextual LSTM
Aidong Xu, Tao Dai, Huajun Chen, Zhe Ming, Weining Li..... 1225

Other Topics in Informatics

Other Topics in Informatics

A novel method for modeling the large-scale hospital
Chengye Zou, Wang Junwei..... 1231

An altitude location system for vehicle based on federated Kalman filter
Tongyue Gao, Kaida Huang, Jia Yang, Qingxuan Hu, Fengshou Zhao..... 1235

An Efficient Framework for String Similarity Continuous Query on Data Stream
Jia Cui..... .1240

Asymmetrical closeness in early warning radar intelligence quality evaluating
Renzheng Liu, Kangsheng Tian, Hongquan Li, Shanchao Yang, Li Cai..... 1248

Calibration of Extended-range Precipitation Forecasting Over China
Haipeng Zhang, Xiefei Zhi..... 1254

Comparison of wireless location algorithms in mobile communication networks
Qian Peng, Yinggao Yue, Zhengwei Chang, Yi Zeng, Tao Liu..... 1259

Cost-Based and Effective Hybrid Data Deduplication Model in Entity Resolution
Charles Roland Haruna, Mengshu Hou, Moses Jojo Eghan, Michael Kpiebaareh, Lawrence Tandoh. 1265

Damage Index Weighted Delay-and-sum Imaging Method Based on Time Reversed Ultrasonic Lamb Wave for Damage Localization
Yu Lu, Shiwei Ma, Hanfei Zhang, Shuhao Cao, Yanyan Liu..... 1271

Driver Identification Using Ear Biometrics
Jana Kalikova, Jan Krcal..... 1277

Event Condition Action approach to process' control layer modeling in Unified Process Metamodel
Krystian Wojtkiewicz..... 1282

Prediction of Passive Sonar Detection Range in Different Detection Probability
Yinghua Guo, Ruifeng Ai, Yali Qi..... 1289

Statistical method to define rational heat loads on railway air conditioning system for changeable climatic conditions
Andrii Radchenko, Mykola Radchenko, Veniamin Tkachenko..... 1294

The Application of Deep Learning in the Prediction of HIV-1 Protease Cleavage Site
Xinyu Lu, Lifang Wang, Zejun Jiang..... 1299