



ISSN1000-3428
CN31-1289/TP
CODEN JISGEV

计算机工程

Computer Engineering

www.ecice06.com

第39卷 - 第7期 - 2013年7月15日

Vol.39 - No.7 - 15 July 2013

2013 07

■ 中科院CSCD核心期刊

■ 中国科技核心期刊

■ RCCSE中国核心学术期刊

■ 工业和信息化部精品期刊



华东计算技术研究所 主办
上海市计算机学会

计算机工程(月刊)

Jisuanji Gongcheng

第 39 卷 第 7 期 2013 年 7 月 15 日

目次

• 专栏 •

网络入侵早期检测方法的研究与实现	刘白璐, 杨雅辉, 沈晴霓, 等(1)
基于扩展寄存器与片上网络的运算阵列设计	张家杰, 欧鹏, 俞政, 等(7)
多小区 CDMA 系统 D2D 通信上行性能研究	程永生, 董宇涵, 张学鹏, 等(11)
基于流水线技术的并行模糊算法硬件实现	黄世伟, 王云峰(16)
基于 GPS 终端的实时路况信息采集方法研究	朱征宇, 崔明, 刘琳(21)
受限网络移动对象的概率最近邻查询	高峻, 郝忠孝(26)
基于图像金字塔修复的虚拟视点绘制	李朋, 韦穗, 孙庆, 等(31)

• 云计算专题 •

基于 RSA 和 Paillier 的同态云计算方案	陈志伟, 杜敏, 杨亚涛, 等(35)
基于相空间的云计算专用监控系统	郭又铭, 王鹏, 唐华, 等(40)
基于遗传算法的云存储分类规则提取	沈佳杰, 江红, 王肃(45)
IaaS 环境中一种保证 SLA 的资源调度策略	吴海双, 张亮, 李杰辉(51)
一种隐私保护的多副本完整性验证方案	刘婷婷, 赵勇(55)
基于非合作博弈效用最优化的云资源提供策略	张小庆, 贺忠堂, 李春林, 等(59)

• 先进计算与数据处理 •

一种基于存储虚拟化的动态容灾系统	文莎, 罗宇, 陈琛(63)
一种基于动态组播树的可靠数据分发方法	邱清, 王意洁, 马行空, 等(67)
基于声学指纹的海量 MP3 文件近似去重方法	赵晓水, 杨扬, 王宁(73)
基于 MapReduce 的分布式网络数据聚类算法	陈东明, 刘健, 王冬琦, 等(76)
分布式环境中基于改进 RS 编码的数据存储	周福平, 谢强, 丁秋林(83)

• 体系结构与软件技术 •

基于 Android 的工业控制监控软件设计	彭鑫, 谭彰, 黄文君, 等(86)
用于 AUTOSAR 模型验证的功能仿真器	顾宗华, 王超, 孙征, 等(90)
一种工作流的控制流距离度量方法	黄袁, 付晓东, 贾楠, 等(94)
复合 Web 服务中构件服务的调度策略	黎英(99)
Windows 平台下的内存管理实时化研究	李轩, 江南, 杜承烈(102)

• 移动互联与通信技术 •

基于中继位置的自适应中继选择方案	卞立安, 韩昌彩, 李媛(106)
WSN 最短链路调度问题的常数近似算法	吕玉华, 禹继国, 王晨曦(110)
基于干扰建模的通信中断概率分析	赵诗琴, 杜荣, 李剑, 等(115)
一种抑制非视距传播误差的混合定位算法	徐英凯, 曹洁, 陈晓群(119)
基于 Fuzzy 丢包区分的 TCP 拥塞控制算法	李哲青, 王伟, 张潇(123)
双向中继系统的联合中继选择和功率分配策略	曹申好, 刘顺兰(127)
基于 LEACH 协议的能耗均衡路由算法	唐甲东, 蔡明(133)

异构无线传感器网络的基础层 MAC 协议设计	马涛, 单洪, 陈娟(137)
基于移动 Agent 的 WSN 多层分簇算法	党小超, 姚浩浩, 郝占军(142)
基于自组织神经网络的分簇成链协议	肖婧, 郑更生, 方勇, 等(148)
基于混合网络的小区干扰协调研究	李玉娜, 曾兴斌, 何加铭(152)

• 安全技术 •

基于归约函数数量裁减的彩虹表技术改进	王小鉴, 廖晓峰, 黄宏宇(156)
基于 Hilbert 的快速湿纸码自适应隐写算法	张广斌, 岳云天, 张传富(161)
基于 BF 算法的网络异常流量行为检测	燕发文, 黄敏, 王中飞(165)
基于代数正规型构造的代数免疫最优布尔函数	董新锋, 张文政, 周宇, 等(169)
一种适用于无线传感器网络的安全认证方案	陈子平, 钱松荣(173)
分组密码算法 SM4 的低复杂度实现	王晨光, 乔树山, 黑勇(177)
风险意识加强的自适应网络病毒传播研究	宋波, 宋玉蓉(181)
基于防篡改的双重软件水印方案	周清雷, 李斌(185)
周期为 p^n 的广义割圆序列线性复杂度研究	石永芳, 杜小妮, 闫统江, 等(189)
无线局域网安全性能测试系统的设计与实现	孟跃伟, 胡爱群, 宋宇波, 等(193)
IC 卡芯片 DES 加密差分功耗分析方法	李菁, 李林森(200)
一类特殊超图与理想秘密共享方案	吴春英, 李顺东(205)

• 人工智能及识别技术 •

基于多级颜色累积和纹理融合的目标跟踪算法	师庆敏, 许耀华, 胡艳军, 等(209)
基于双目视觉的目标定位与测距系统硬件平台	王怡萱, 张俊梅, 阚江明(214)
基于模糊聚类优化的语义 Web 服务发现	王永明, 张英俊, 谢斌红, 等(219)
一种新型学位论文智能评价系统	徐建强, 崔慧洁, 李小平, 等(224)
双目 CCD 测距系统的高精度标定	姜雨彤, 杨进华, 刘钊, 等(228)
Mashup 智能答疑系统的研究与实现	吴彦文, 李诗, 田庆恒(233)
基于红外探测技术的无人机视觉引导助降系统	杜晶, 雷志辉, 周翔(237)
一种求解社区检测问题的改进分布估计算法	周本达, 王煦法, 姚宏亮(242)
基于变异概率分析的改进 QGA 及其应用	戴勇谦, 张明武, 祝胜林, 等(247)
绿色网络网页正文内容提取算法	龙珑, 邓伟(252)
基于图像区域分割和置信传播的立体匹配算法	张惊雷, 王艳姣(257)
基于人工蜂群算法的疏散运动仿真	张鹏, 刘弘, 王爱霖(261)
一种多智能体混合蛙跳算法	王联国, 代永强(265)

• 图形图像处理 •

基于字典学习正则化的图像去噪	郑兴明, 刘宁钟(270)
布谷鸟搜索算法在多阈值图像分割中的应用	柳新妮, 马苗(274)
基于三角面网格细化策略的改进种子填充算法	朱晨阳, 熊岳山, 谭珂, 等(279)
基于聚类的单帧图像超分辨率重建方法	李娟娟, 李小红(284)
一种基于线性邻域传播的加权 K 近邻算法	王小攀, 马丽, 刘福江(288)

• 开发研究与工程应用 •

室内定位航位推算算法的研究与实现	宋敏, 申闰春(293)
轻量级嵌入式 Agent 在 Android 平台上的实现	于卫红, 陈燕(298)
一种面向文件系统的通用故障注入工具	赵志龙, 左德承, 张展, 等(302)
前视声纳波束形成算法的 FPGA 实现	赵慎, 乔纯捷, 张朝明, 等(306)
浮点乘加部件延迟对浮点性能影响的研究	何军, 田增, 郭勇, 等(311)
基于 IOS 的移动学习直播互动平台	曾垂鑫, 王加俊, 申丽萍, 等(314)
基于层次化重复单元的 FPGA 结构描述方法	胡敏, 王健, 来金梅(318)

Computer Engineering (Monthly)

Vol.39 No.7

15 July 2013

Contents

Study and Implementation of Early Network Intrusion Detection Method.....	LIU Bai-lu, YANG Ya-hui, SHEN Qing-ni, et al(1)
Design of Computing Array Based on Extended Register and Network-on-Chip.....	ZHANG Jia-jie, OU Peng, YU Zheng, et al(7)
Uplink Performance Research of Device-to-Device Communication in Multi-cell CDMA System.....CHENG Yong-sheng, DONG Yu-han, ZHANG Xue-dan, et al(11)
Hardware Implementation of Parallel Modular Exponentiation Algorithm Based on Pipelining Technique.....HUANG Shi-wei, WANG Yun-feng(16)
Research on Information Collection Method of Real-time Road Condition Based on GPS Terminal.....	ZHU Zheng-yu, CUI Ming, LIU Lin(21)
Probabilistic Nearest Neighbor Query of Constrained Network Moving Object.....	GAO Jun, HAO Zhong-xiao(26)
Virtual Viewpoint Rendering Based on Image Pyramid Inpainting.....	LI Peng, WEI Sui, SUN Qing, et al(31)
Homomorphic Cloud Computing Scheme Based on RSA and Paillier.....	CHEN Zhi-wei, DU Min, YANG Ya-tao, et al(35)
Specialized Cloud Computing Monitoring System Based on Phase Space.....	GUO You-ming, WANG Peng, TANG Hua, et al(40)
Extraction of Cloud Storage Classification Rule Based on Genetic Algorithm.....	SHEN Jia-jie, JIANG Hong, WANG Su(45)
Resource Scheduling Strategy for Guaranteeing SLA in IaaS Environment.....	WU Hai-shuang, ZHANG Liang, LI Jie-hui(51)
A Privacy-preserving Multi-copy Integrity Verification Scheme.....	LIU Ting-ting, ZHAO Yong(55)
Cloud Resource Provision Strategy Based on Non-cooperative Game Utility Optimization.....ZHANG Xiao-qing, HE Zhong-tang, LI Chun-lin, et al(59)
A Dynamic Disaster Tolerance System Based on Storage Virtualization.....	WEN Sha, LUO Yu, CHEN Chen(63)
A Reliable Data Dissemination Method Based on Dynamic Multicast Tree.....	QIU Qing, WANG Yi-jie, MA Xing-kong, et al(67)
Near De-duplication Method of Massive MP3 Files Based on Acoustic Fingerprint.....	ZHAO Xiao-yong, YANG Yang, WANG Ning(73)
Distributed Clustering Algorithm for Network Data Based on MapReduce.....	CHEN Dong-ming, LIU Jian, WANG Dong-qi, et al(76)
Data Storage Based on Improved RS Coding in Distributed Environment.....	ZHOU Fu-ping, XIE Qiang, DING Qiu-lin(83)
Design of Industrial Control Monitoring Software Based on Android.....	PENG Xin, TAN Zhang, HUANG Wen-jun, et al(86)
Functional Simulator for AUTOSAR Models Verification.....	GU Zong-hua, WANG Chao, SUN Zheng, et al(90)
A Measuring Method for Control Flow Distance of Workflow.....	HUANG Yuan, FU Xiao-dong, JIA Nan, et al(94)
Scheduling Strategy of Component Services in Composed Web Service.....	LI Ying(99)
Research on Real-time Memory Management Under Windows Platform.....	LI Xuan, JIANG Nan, DU Cheng-lie(102)
Adaptive Relay Selection Scheme Based on Relay Location.....	BIAN Li-an, HAN Chang-cai, LI Yuan(106)
Constant Approximation Algorithm for Shortest Link Scheduling Problem in Wireless Sensor Network.....LV Yu-hua, YU Ji-guo, WANG Chen-xi(110)
Communication Outage Probability Analysis Based on Interference Modeling.....	ZHAO Shi-qin, DU Rong, LI Jian, et al(115)
A Hybrid Location Algorithm with Non-line of Sight Transmission Error Mitigation.....	XU Ying-kai, CAO Jie, CHEN Xiao-qun(119)
TCP Congestion Control Algorithm Based on Fuzzy Loss Package Differentiating.....	LI Zhe-qing, WANG Wei, ZHANG Xiao(123)
Joint Relay Selection and Power Allocation Strategy of Two-way Relay System.....	CAO Shen-hao, LIU Shun-lan(127)
Energy-balancing Routing Algorithm Based on LEACH Protocol.....	TANG Jia-dong, CAI Ming(133)
Design of Foundation Layer MAC Protocol for Heterogeneous Wireless Sensor Network.....	MA Tao, SHAN Hong, CHEN Juan(137)
WSN Multi-layer Clustering Algorithm Based on Mobile Agent.....	DANG Xiao-chao, YAO Hao-hao, HAO Zhan-jun(142)
Clustering and Chaining Protocol Based on Self Organizing Neural Network.....	XIAO Jing, ZHENG Geng-sheng, FANG Yong, et al(148)
Research on Inter-cell Interference Coordination Based on Hybrid Network.....	LI Yu-na, ZENG Xing-bin, HE Jia-ming(152)

Improvement of Rainbow Table Technology Based on Number Cutting of Reduction Function.....	WANG Xiao-jian, LIAO Xiao-feng, HUANG Hong-yu(156)
Adaptive Steganography Algorithm of Rapid Wet Paper Code Based on Hilbert.....	ZHANG Guang-bin, YUE Yun-tian, ZHANG Chuan-fu(161)
Network Abnormal Flow Behavior Detection Based on BF Algorithm.....	YAN Fa-wen, HUANG Min, WANG Zhong-fei(165)
Optimal Algebraic Immune Boolean Function Based on Algebraic Normal Form Construction.....	DONG Xin-feng, ZHANG Wen-zheng, ZHOU Yu, et al(169)
A Security Authentication Scheme Suitable for Wireless Sensor Network.....	CHEN Zi-ping, QIAN Song-rong(173)
Low Complexity Implementation of Block Cipher SM4 Algorithm.....	WANG Chen-guang, QIAO Shu-shan, HEI Yong(177)
Virus Propagation Research on Adaptive Network of Enhancing Risk Awareness.....	SONG Bo, SONG Yu-rong(181)
Double Software Watermark Scheme Based on Tamper-proofing.....	ZHOU Qing-lei, LI Bin(185)
Study of Linear Complexity of Generalized Cyclotomic Sequences with Period p^m	SHI Yong-fang, DU Xiao-ni, YAN Tong-jiang, et al(189)
Design and Implementation of Security Performance Test System for Wireless Local Area Network.....	MENG Yue-wei, HU Ai-qun, SONG Yu-bo, et al(193)
Differential Power Analysis Method for DES Encryption in IC Card Chip.....	LI Jing, LI Lin-sen(200)
A Special Type of Hypergraph and Ideal Secret Sharing Scheme.....	WU Chun-ying, LI Shun-dong(205)
Object Tracking Algorithm Based on Multistep Color Accumulation and Texture Fusion.....	SHI Qing-min, XU Yao-hua, HU Yan-jun, et al(209)
Hardware Platform of Target Positioning and Ranging System Based on Binocular Vision.....	WANG Yi-xuan, ZHANG Jun-mei, KAN Jiang-ming(214)
Semantic Web Service Discovery Based on Fuzzy Clustering Optimization.....	WANG Yong-ming, ZHANG Ying-jun, XIE Bin-hong, et al(219)
A New Intelligent Evaluation System for Thesis Paper.....	XU Jian-qiang, CUI Hui-jie, LI Xiao-ping, et al(224)
High Precision Calibration of Binocular CCD Ranging System.....	JIANG Yu-tong, YANG Jin-hua, LIU Zhao, et al(228)
Research and Implementation of Mashup Intelligent Question-answering System.....	WU Yan-wen, LI Shi, TIAN Qing-heng(233)
Unmanned Aerial Vehicle Vision Guidance Assisted Landing System Based on Infrared Detection Technique.....	DU Jing, LEI Zhi-hui, ZHOU Xiang(237)
An Improved Estimation of Distribution Algorithm for Solving Community Detection Problem.....	ZHOU Ben-da, WANG Xu-fa, YAO Hong-liang(242)
Improved QGA Based on Mutation Probability Analysis and Its Application.....	DAI Yong-qian, ZHANG Ming-wu, ZHU Sheng-lin, et al(247)
Text Content Extraction Algorithm for Green Network Webpage.....	LONG Long, DENG Wei(252)
Stereo Matching Algorithm Based on Image Region Segmentation and Belief Propagation.....	ZHANG Jing-lei, WANG Yan-jiao(257)
Evacuation Motion Simulation Based on Artificial Bee Colony Algorithm.....	ZHANG Peng, LIU Hong, WANG Ai-lin(261)
A Multi-agent Shuffled Frog Leaping Algorithm.....	WANG Lian-guo, DAI Yong-qiang(265)
Image Denoising Based on Dictionary Learning Regularization.....	ZHENG Xing-ming, LIU Ning-zhong(270)
Application of Cuckoo Search Algorithm in Multi-threshold Image Segmentation.....	LIU Xin-ni, MA Miao(274)
Improved Seed-fill Algorithm Based on Refinement Strategy of Triangular Surface Mesh.....	ZHU Chen-yang, XIONG Yue-shan, TAN Ke, et al(279)
Super-resolution Reconstruction Method for Single Frame Image Based on Clustering.....	LI Juan-juan, LI Xiao-hong(284)
A Weighted K-nearest Neighbor Algorithm Based on Linear Neighborhood Propagation.....	WANG Xiao-pan, MA Li, LIU Fu-jiang(288)
Research and Realization of Dead Reckoning Algorithm for Indoor Localization.....	SONG Min, SHEN Yan-chun(293)
Implementation of Lightweight Embedded Agent on Android Platform.....	YU Wei-hong, CHEN Yan(298)
A General Fault Injection Tool Oriented to File System.....	ZHAO Zhi-long, ZUO De-cheng, ZHANG Zhan, et al(302)
FPGA Implementation of Forward Looking Sonar Beamforming Algorithm.....	ZHAO Shen, QIAO Chun-jie, ZHANG Chao-ming, et al(306)
Study of Floating-point Multiply-Add Unit Latency Effect on Floating-point Performance.....	HE Jun, TIAN Zeng, GUO Yong, et al(311)
Mobile Learning Live and Interactive Platform Based on IOS.....	ZENG Chui-xin, WANG Jia-jun, SHEN Li-ping, et al(314)
Description Method for FPGA Architecture Based on Hierarchical Tile.....	HU Min, WANG Jian, LAI Jin-mei(318)