



中国计算机学会会刊
Publication of China Computer Federation

ISSN 1000-7024
CODEN JIGYEP

计算机工程与设计

Computer Engineering and Design

2013年3月 第34卷 第3期

Vol. 34 No. 3 Mar. 2013

3
2013

中国航天科工集团第二研究院706所主办

计算机工程与设计

(JISUANJI GONGCHENG YU SHEJI)

2013 年 3 月 第 34 卷 第 3 期

目 次

网络与通信技术

- | | |
|-------------------------------|-------------------------|
| 基于环结构的可靠检测机制 | 李俊锋, 杨英杰, 张国强(761) |
| 基于融合网络播存机制的数据发布模式研究 | 孔思淇, 潘泽友, 王开云, 路 海(765) |
| 基于 S-MAC 的能量均衡协议..... | 龙昭华, 商 浩, 蒋贵全(769) |
| 基于 MPLS VPN 的气象宽带网络测试系统 | 胡 星, 王 彬, 周 琰(774) |
| 高并发 Web 航空票务秒杀系统的设计与实现..... | 李军锋, 何明昕(778) |
| 基于稳定性的认知 Ad Hoc 网络路由协议 | 李泽扬, 陈前斌, 唐 伦, 龚 璞(783) |
| 基于估计误差逆序的 VBLAST 检测算法研究 | 吴君钦, 李 婷(787) |
| 基于 HWMP 协议的路径选择判据研究..... | 龙昭华, 侯彦强, 张 林(791) |
| 基于空间索引的 WSN 数据查询机制 | 高志君, 郑纯军(795) |
| 基于 FFT 和长时延自相关函数的频偏估计方法 | 孟庆萍, 周新力, 田 伟(799) |
| 基于网络演算的 CAN 总线延迟上界计算方法..... | 陈克伟, 宋小庆, 廖自力(804) |

信息安全技术

- | | |
|---------------------------------|------------------------------|
| 改进的块差值无损鲁棒图像水印算法 | 尚冠宇, 韩万兵, 郭凡新, 邓小鸿(809) |
| 基于聚类分析的动态自适应入侵检测模式研究 | 梁 飞, 同宏印(814) |
| 基于 D-S 证据理论的网络安全态势预测方法研究 | 石 波, 谢小权(821) |
| 字符型密码随机加密与解密算法的设计与实现 | 崔艳荣(826) |
| 基于角色和规则引擎的 UCON 应用模型 | 熊 智, 徐江燕, 王高举, 李 江, 蔡伟鸿(831) |
| 基于 TLA + 的 AFDX 冗余管理算法的改进 | 库 恒, 龙士工, 罗 昊(837) |
| 没有对运算的无证书环签密方案的设计 | 覃海生, 张 雷, 冯燕强, 何传波, 吴文俊(841) |
| 基于身份的可验证环签密方案 | 邓伦治, 杨 燕(845) |
| 虚拟桌面操作系统灾难离线检测与恢复 | 杨鹏斐, 高云伟, 冯百明, 陈旺虎, 展旭升(849) |
| 基于 Android 安全机制的权限检测系统 | 闫 梅, 彭新光(854) |
| 虚拟桌面杀毒模型的设计与实现 | 展旭升, 高云伟, 冯百明, 蒋 芸, 杨鹏斐(859) |

嵌入式系统工程

- | | |
|-------------------------------|-------------------------|
| 基于 SOPC 的 CANopen 节点的设计 | 宋瑞雪, 李文新, 王 彬, 金 田(863) |
| 嵌入式 3G 路由器的设计与实现 | 闫 巧, 牛军军(868) |
| 用于片上系统的二叉树快速遍历算法 | 王兴波(873) |

软件与算法

- 针对无序数据集异常检测的树突状细胞算法 袁嵩, 陈启卷(878)
电磁兼容图片测试曲线的数据提取方法研究 郭慧, 苏东林, 刘焱, 付永庆(882)
基于 PSO 优化的电动舵机自抗扰控制器设计 周林阳, 王生捷(887)
基于 AHP 与云模型的软件过程绩效评价方法 刘东飞(893)
基于改进分水岭变换的矿石图像分割算法 董珂, 蒋大林(899)
基于主体行为的非结构化数据模型 韩晶, 鄂海红, 宋美娜, 宋俊德(904)
基于敏捷开发的工作量估算模型的研究 程博, 于学军(909)
基于缺陷分析的软件测试有效性评估方法 司倩然, 张慧颖, 闫国英(915)
基于最近邻接点的涡点搜索算法 刘杰, 孙秦(920)
基于语义相似度与 QoS 的 Web 服务匹配模型研究 张金英, 李蜀瑜(925)
Web 应用程序的动态测试生成方法 郭玉环, 高建华(930)
Petri 网多重变迁集的行为轮廓一致性分析 王咪咪, 方贤文(935)
基于向量和矩阵的频繁项集挖掘算法研究 张敏, 姚良威, 侯宇(939)
基于 OpenMP 的 RPM 的点集匹配的并行实现 曹军军, 杨烜(944)
基于 Relief 的特征加权壳近邻分类算法 郑洁, 秦永彬, 许道云(951)
通信层数据交换中间件设计实现 陈锦平(955)
基于预筛选的改进的 SAR 图像 PPB 去斑 胡开洋, 耿伯英(960)

多媒体技术

- 视频分析中全局运动矢量快速估计的研究 祝晓东, 郁松年(965)
基于图的有监督判别投影 徐伟, 王正群, 周中侠, 李峰(970)
基于数乘移位寄存器随机滤波的压缩感知 郭凯, 马社祥, 孟鑫(974)
基于 SURF 的抗重复特征干扰图像配准方法 张永宏, 阚希(978)
基于 Bag of Features 的手势识别 陈小波, 谢伙生(983)
基于 GPU 粒子系统的烟花模拟 吕雪, 刘丽, 王俊杰, 闫书汉(989)
削减指纹图像误判率的算法研究 张毅哲, 王蒙蒙, 朱贵良(993)
基于 SURF 和动态 ROI 的实时视频拼接 首照宇, 欧阳宁, 张华俊, 莫建文, 张彤(998)

仿真技术

- 基于 LOD 的自适应无裂缝地形渲染 郭虎奇, 费向东, 刘小玲(1004)
基于约束支配多目标进化算法的航路改航方法 毛芸苹, 杨红雨(1008)
基于 Chirp 原子改进的声母时频特征提取研究 董帅飞, 于凤芹(1013)

智能技术

- 过程报警事件分组的 Petri-FCM 方法 高丽霄, 李宏光(1018)
进近阶段飞机着陆调度优化 冯兴杰, 陈素敏(1023)
基于专利搜索日志的同义词挖掘 王颖, 都云程, 卢献华, 吕学强(1029)
异构细胞神经网络与超混沌系统的同步研究 张小红, 汪佳(1034)

基于混沌粒子群的模糊 C-均值聚类算法	张春娜, 李轶然(1039)
HPDBSCAN:高效的不确定数据处理算法	胡春安, 范丽文, 毛伊敏(1044)
基于多决策值等价类的属性约简	张冬雯, 仇计清, 李霄(1050)
基于数据驱动的故障预测模型框架研究	韩东, 杨震, 许葆华(1054)
模糊故障树在列车运行时故障开门中的应用	占雪梅, 孔维珍, 马涛(1059)
基于扩展干涉矩阵和遗传算法的拆卸序列规划	李海军, 姜健, 王云飞(1064)
基于随机行走时间的步态识别方法	车辚辚, 孔英会(1069)
面向中文客户评论的评价搭配识别研究	陈炯, 张虎, 曹付元(1073)

开发与应用

自动测试系统适配器通用开关网络设计	杜志俊, 秦红磊, 路子旺(1078)
基于 ID3 算法的信息资源分类管理映射模型研究	柴宏涛, 李建华, 沈迪(1082)
基于信息系统的体系作战指挥控制能力评估研究	杨诚, 刘泽平(1087)
基于卡尔曼滤波和 AR 参数的非平稳杂波仿真	罗倩, 宋鸿梅(1092)
不确定作业的飞机大修并行拆卸调度优化研究	栗中华, 陈艳, 官颂(1097)
项目审批本体模型的研究及应用	赵慧, 张贤坤(1102)
基于分类代理的 Web 信息集成方法的研究	李德明, 叶进(1108)
生成匀质块排样方式的递推算法	罗丹, 崔耀东, 李秋蓉(1112)
连续不确定 XML 的 Top-k 查询算法研究	张晓琳, 郑春红, 刘立新, 吕庆(1116)
维吾尔文字自适应角度定位	邓任任, 哈力旦·A(1121)
基于 ZigBee 的蔬菜大棚无线监控系统设计	王军, 孙健程, 曾静(1126)
Freeman 四方向链码压缩率提高的方法研究	李灵华, 刘勇奎(1132)
多主体建模方法在舰船任务系统中的应用	胡啸(1137)

本期责任编辑:韩庭

本刊为:

- ★中国计算机学会会刊
- ★中国宇航学会会刊
- ★英国《科学文摘》(SA, INSPEC)源期刊
- ★俄罗斯《文摘杂志》(AJ of VINITI)源期刊
- ★美国《乌利希期刊指南》(UPD)源期刊
- ★波兰《哥白尼索引》(IC)源期刊

- ★全国中文核心期刊(中文核心期刊要目总览 2011 版)
- ★中国科技核心期刊(中国科技论文统计源期刊)
- ★《中国科学引文数据库(CSCD)》收录期刊
- ★《中国学术期刊综合评价数据库》收录期刊
- ★《中国学术期刊网络出版总库(CNKI)》收录期刊
- ★《万方数据—数字化期刊群》收录期刊
- ★《中国学术期刊文摘(中文版)》收录期刊
- ★《电子科技文摘数据库》收录期刊

期刊基本参数: CN 11-1775/TP * 1980 * m * A4 * 380 * zh * P * ¥38.00 * 78 * 2013-03

Computer Engineering and Design

Vol. 34 No. 3 Mar. 2013

CONTENTS

Network and Communications Technology

Reliable detection mechanism based on ring structure	LI Jun-feng, YANG Ying-jie, ZHANG Guo-qiang(761)
Research of data distribution pattern based on converged network broadcast storage mechanism	KONG Si-qi, PAN Ze-you, WANG Kai-yun, et al(765)
Energy-efficient protocol based on S-MAC	LONG Zhao-hua, SHANG Hao, JIANG Gui-qian(769)
Network test system of meteorological broadband network based on MPLS VPN	HU Xing, WANG Bin, ZHOU Yan(774)
Design and implementation of web-based air ticket seckill system with high-concurrency	LI Jun-feng, HE Ming-xin(778)
Stability-based routing protocol for cognitive radio Ad Hoc networks	LI Ze-yang, CHEN Qian-bin, TANG Lun, et al(783)
VBLAST detection algorithm based on reverse sequence of estimation error	WU Jun-qin, LI Ting(787)
Research on path selection metric based on HWMP	LONG Zhao-hua, HOU Yan-qiang, ZHANG Lin(791)
Data query based spatial index for WSN	GAO Zhi-jun, ZHENG chun-jun(795)
Carrier frequency offset estimation algorithm based on FFT and long delay autocorrelation function	MENG Qing-ping, ZHOU Xin-li, TIAN Wei(799)
Method for calculating delay bound of CAN bus by network calculus	CHEN Ke-wei, SONG Xiao-qing, LIAO Zi-li(804)

Information Security Technology

Improved lossless robust image watermarking algorithm based on block's difference	SHANG Guan-yu, HAN Wan-bing, GUO Fan-xin, et al(809)
Research of dynamic self-adaption intrusion detection model based of clustering	LIANG Fei, YAN Hong-yin(814)
Research on network security situation forecast method based on D-S evidence theory	SHI Bo, XIE Xiao-quan(821)
Design and implementation of random encryption and decryption algorithm for character type cipher	CUI Yan-rong(826)
UCON application model based on role and rule-engine	XIONG Zhi, XU Jiang-yan, WANG Gao-ju, et al(831)
Improve of AFDX redundancy management algorithms based on TLA +	KU Heng, LONG Shi-gong, LUO Hao(837)
Certificateless ring signcryption scheme without paring design	QIN Hai-sheng, ZHANG Lei, FENG Yan-qiang, et al(841)
Identity based verifiable ring signcryption scheme	DENG Lun-zhi, YANG Yan(845)
Disaster offline detection and recovery of virtual desktop operating system	YANG Peng-fei, GAO Yun-wei, FENG Bai-ming, et al(849)
Permission detection system based on android security mechanism	YAN Mei, PENG Xin-guang(854)
Design and implementation of virtual desktop antivirus model	ZHAN Xu-sheng, GAO Yun-wei, FENG Bai-ming, et al(859)

Embedded System Engineering

Design of CANopen node based on SOPC	SONG Rui-xue, LI Wen-xin, WANG Bin, et al(863)
--	--

Design and implementation of embedded 3G router	YAN Qiao, NIU Jun-jun(868)
Fast algorithms for traversal of binary trees available for SoC	WANG Xing-bo(873)

Software and Arithmetic

Dendritic cell algorithm for anomaly detection in unordered data set	YUAN Song, CHEN Qi-juan(878)
Data extracted method based on image of EMC test curve	GUO Hui, SU Dong-lin, LIU Yan, et al(882)
Electromechanical actuator controller design based on PSO-ADRC	ZHOU Lin-yang, WANG Sheng-jie(887)
Software process performance evaluation based on AHP and cloud model	LIU Dong-fei(893)
Ore image segmentation algorithm based on improved watershed transform	DONG Ke, JIANG Da-lin(899)
Model for unstructured data based on subject behavior	HAN Jing, E Hai-hong, SONG Mei-na, et al(904)
Research of effort estimation model based on agile development	CHENG Bo, YÜ Xue-jun (909)
Software test validity assessment method based on software defect analysis	SI Qian-ran, ZHANG Hui-ying, YAN Guo-ying(915)
Vortex point searching algorithm based on nearest neighbors point	LIU Jie, SUN Qin(920)
Research of Web service matching model based on semantic similarity and QoS	ZHANG Jin-ying, LI Shu-yu(925)
Dynamic test generation approach for web applications	GUO Yu-huan, GAO Jian-hua(930)
Consistency analysis of behavioral profiles based on multi-sets of transitions of Petri net	WANG Mi-mi, FANG Xian-wen(935)
Research of frequent itemsets mining algorithm based on vector and matrix	ZHANG Min, YAO Liang-wei, HOU Yu(939)
Parallel implementation of point matching of RPM based on OpenMP	CAO Jun-jun, YANG Xuan(944)
Shell nearest neighbor classification of feature weighted based on Relief	ZHENG Jie, QIN Yong-bin, XU Dao-yun(951)
Research and design of communication level data exchanging middleware	CHEN Jin-ping(955)
Improved probabilistic patch-based SAR image despeckling based on preselection	HU Kai-ying, GENG Bo-ying(960)

Multimedia Technology

Research on rapid estimation of global motion vector of video	ZHU Xiao-dong, YU Song-nian(965)
Graph-based supervised discriminant projection	XU Wei, WANG Zheng-qun, ZHOU Zhong-xia, et al(970)
Random filtered compressed sensing based on multiply shift register	GUO Kai, MA She-xiang, MENG Xin(974)
Image registration method based on SURF with anti-interference of repeated features	ZHANG Yong-hong, KAN Xi(978)
Hand gesture recognition based on bag of features	CHEN Xiao-bo, XIE Huo-sheng(983)
Fireworks simulation based on particle system and GPU	LÜ Xue, LIU Li, WANG Jun-jie, et al(989)
Improved algorithm of cutting down false rate on fingerprint image	ZHANG Yi-zhe, WANG Meng-meng, ZHU Gui-liang(993)
Research on real-time video stitching based on SURF and Dynamic ROI	SHOU Zhao-yu, OUYANG Ning, ZHANG Hua-jun, et al(998)

Simulation Technology

Adaptive terrain rendering with no T-adjacent based on LOD	GUO Hu-qi, FEI Xiang-dong, LIU Xiao-ling(1004)
Rerouting method based on constrained-dominate multi-objective evolutionary algorithm	MAO Yun-ping, YANG Hong-yu(1008)

Extraction research of initials time-frequency feature based on chirp atoms improvement	DONG Shuai-fei, YU Feng-qin(1013)
---	-----------------------------------

Intelligent Technology

Petri-FCM approach to process alarm event grouping	GAO Li-xiao, LI Hong-guang(1018)
Optimal aircraft landing scheduling in approaching stage	FENG Xing-jie, CHEN Su-min(1023)
Synonyms mining based on patent search log	WANG Ying, DU Yun-cheng, LU Xian-hua, et al(1029)
Synchronous analysis for hyper-chaotic systems of cellular neural network and rossler	ZHANG Xiao-hong, WANG Jia(1034)
Research of fuzzy C-means clustering algorithm based on chaos particle swarm	ZHANG Chun-na, LI Yi-ran(1039)
HPDBSCAN: Efficient clustering algorithm for processing uncertain data	HU Chun-an, FAN Li-wen, MAO Yi-min(1044)
Attribute reduction based on equivalence classes with multiple decision values	ZHANG Dong-wen, QIU Ji-qing, LI Xiao(1050)
Research on fault prognostics model and frame based on data-driven method	HAN Dong, YANG Zhen, XU Bao-hua(1054)
Application of fuzzy fault tree analysis for evaluation of failure to open door when train is running	ZHAN Xue-mei, KONG Wei-zhen, MA Tao(1059)
Disassembly sequence planning based on extended interference matrix and genetic algorithm	LI Hai-jun, JIANG Jian, WANG Yun-fei(1064)
Gait recognition based on time for a random walk	CHE Lin-lin, KONG Ying-hui(1069)
Research on identification of evaluation collocation from Chinese customer reviews	CHEN Jiong, ZHANG Hu, CAO Fu-yuan(1073)

Developments and Applications

Design of universal switching network of automatic test systems adapter	DU Zhi-jun, QIN Hong-lei, LU Zi-wang(1078)
Study on information resources classification management mapping model based on ID3 algorithm	CHAI Hong-tao, LI Jian-hua, SHEN Di(1082)
Study of evaluation based on information system operational command and control capacity	YANG Cheng, LIU Ze-ping(1087)
Kalman filter and AR parameter based non-stationary clutter simulation	LUO Qian, SONG Hong-mei(1092)
Research on overhaul parallel disassembly scheduling with uncertainty job	LI Zhong-hua, CHEN Yan, GUAN Song(1097)
Study and application of project approval ontology model	ZHAO Hui, ZHANG Xian-kun(1102)
Research of web information integration based agent of classification	LI De-ming, YIE Jin(1108)
Recursive algorithm for uniform block patterns	LUO Dan, CUI Yao-dong, LI Qiu-rong(1112)
Research on Top-k query algorithm over continuous probabilistic XML	ZHANG Xiao-lin, ZHENG Chun-hong, LIU Li-xin, et al(1116)
Uyghur location based on adaptive-angle-method	DENG Ren-ren, HALIDAN · A(1121)
Design of wireless monitoring and control system based on ZigBee for vegetables greenhouse	WANG Jun, SUN Jian-cheng, ZENG Jing (1126)
Study on methods for improving compressibility of 4-direction Freeman chain code	LI Ling-hua, LIU Yong-kui(1132)
Multi-agent modeling method on ship mission system architecture	HU Xiao(1137)