

中国科技核心期刊

计算机系统应用 COMPUTER SYSTEMS & APPLICATIONS

基于BPM的仓储物流管理系统的设计与实现

Design and Implementation of Logistics Information System
Based on BPM

基于服务容器的应急救援地理信息平台研究与应用

Emergency Rescue GIS Platform Based on Service Container
and Its Application

面向地震资料处理的集群系统设计与实现

Design and Implementation of Seismic Data Processing Oriented Cluster System

基于DLA模型的花式纱线真实感模拟算法

A New Method to Simulate Fancy Yarn Based on DLA Model

基于规则语句的金融报表系统自动化测试方法研究及应用

Automated Testing Method for Financial Reporting System
Based on Rule Statement

2010. 5

主管单位：中国科学院
主办单位：中国科学院软件研究所

ISSN 1003-3254



9 771003 325025

目 录

系统建设

- (01) 基于 BPM 的仓储物流管理系统的设计与实现 徐克鹏、左春
 (05) 基于 DM642 的实时运动目标检测系统设计与实现 刘静、王玲、旷尤毓
 (09) 基于服务容器的应急救援地理信息平台研究与应用 廖凌松、张瑞新、李爱平、严瑞金
 (14) 移动通信软件框架的设计与实现 宫学生、马洪连、丁男
 (19) 面向地震资料处理的集群系统设计与实现 金弟、薛中州、杨俊民
 (24) 基于 SOA 信息系统的研发 隆益民
 (28) 基于 Agent 的 Peer - to - Peer 式分布式构件库系统 常洁、许天兵、赵志崑、徐如志
 (32) 基于 USB 的有机磷农药检测系统设计 孙毅、刘敬彪、周巧娣
 (36) 嵌入式 Flash 文件系统的设计与实现 陈桂生、李志刚

研究开发

- (41) 基于 G + + 前端的 C + + 源代码分析系统的初步研究 彭四伟、辛丽娟
 (46) 基于 DLA 模型的花式纱线真实感模拟算法 郭炜杰、张瑞林
 (50) 基于魔方的混沌图像置乱算法 何创毅、陈乐庚、王志达
 (54) 多媒体统一处理平台产品化定制的设计与实现 张桂周、叶明华
 (58) 一种针对特定密度检测的快速 FBP 算法 杨波、郑飞、郭琦、孔斌
 (63) 一种批量信息检索方法及实现 李杰、宁帆、赵国安
 (68) 基于功能驱动的实体关联方法 赵志远
 (71) 基于 OSG 的混合系统三维仿真技术的研究与实现 陈奎、王毅刚、夏福兴
 (77) 异构传感器网络节点部署算法 袁辉勇、羊四清
 (80) 基于改进型 LBP 特征的运动阴影去除算法 郝灿、朱信忠、赵建民、徐慧英
 (84) 集群式软件平台敏捷测试 徐淑焕、雷跃明
 (89) 一种 Web 服务组合事务框架的设计与实现 房丙午、刘力、张成叔
 (94) Vague 集多 QoS 属性 ER 测量方法及网格任务调度 苟志、黄德才、陶利民
 (100) 支持交叉营销的金融产品客户数据挖掘 黄洪、洪毅
 (104) 基于 LACP 协议的链路聚合状态机模块的实现 郑涛、郭裕顺
 (109) 一种改进型 FNG 状态机的研究及实现 夏方萍、秦会斌
 (113) 基于集成神经网络的智能决策入侵检测系统 陈晓、夏威、包文
 (116) GPU 上稀疏矩阵与矢量乘积运算的一种改进 马超、韦刚、裴颂文、吴百锋
 (121) 一种 Colored WF_logic Net 的工作流过程建模 王静馨、李艳梅、徐娟
 (125) 粒子群优化算法种群规模的选择 张雯霞、王刚、朱朝晖、肖娟

实用案例

- (129) 基于规则语句的金融报表系统自动化测试方法研究及应用 张士恒、罗省贤
 (133) 大口径水表数据采集通讯终端的研究和设计 张协衍、王玲
 (137) 一种多运动目标检测方法在 FPGA 上的实现 马洪连、齐伟、丁男、李栋
 (141) 基于 LabVIEW 的转动惯量测量系统设计 张勇、孙宁
 (145) 基于 GPRS 超低功耗排污监测终端的设计 邬佳奇、惠晓威、于希洋
 (148) 基于 CAN 总线和 ARM 技术的集中电表抄表系统 林丽巧、郝世宇

应用技术

- (151) RFID 技术的定位算法改进及其在图书馆的应用 胡洋
 (154) 伪并行遗传算法及其在桥梁维修管理优化中的应用 王砚如、王桂萱
 (160) 用 QFD 逆过程法评估软件质量 冯珍、张所地
 (163) 基于特征匹配滤波的自适应模板跟踪算法 周晨辰、黄昶、王小明
 (167) 聚类结果可视化的线珠模式 王开军、李健
 (171) 利用聚类改进动态克隆选择算法的自体纯净性问题 肖军弼、季翠翠
 (174) 光子映射在 CUDA 中的研究与实现 林其选、王毅刚
 (179) ZigBee 技术在工业监控网络中的应用 贺才军、方厚辉、管子球、黄丽
 (183) 一种基于分众分类的协同过滤推荐算法 吴春旭、李佳俊、石辉

经验交流

- (187) 基于 OCI9 的数据库访问接口的改进与实现 徐薇、胡术、杨诚
 (191) 数据源特性对序列模式挖掘结果的影响 王翠青、陈未如、张静
 (194) 搜索引擎优化初探 梁静、葛宇、洪洁
 (198) 动态脚本语言 Lua 与 C + + 交互方法的研究与实现 邓正阳、陈和平、苏鹏
 (202) 粗糙集和贝叶斯网络在软件风险评估中的应用 任雪利
 (205) 基于 PBIL 算法的高校自动排考系统 袁利永、金炳尧、刘曰仙
 (209) Sobel 算法在车牌识别系统中的改进与实现 刘锦、杨顺、余焕明
 (212) 从攻击者角度浅析高校 Web 站点的安全 白兴瑞、刘耀炎
 (216) Windows CE 自定制 Shell 覃朗、雷跃明
 (220) 基于负载性能指标的 Web 测试 浦云明、王宝玉

产品应用

- (224) 基于 CC2430 的无线搜救定位系统 李晓乐、林翠
 (227) 基于 ARM 与 GPRS 的家庭智能控制系统的应用与实现 李新春、赵双华
 (230) 基于 ARM9 和 CC2430 教学楼节能系统的设计 李新春、李永喜、范翠艳

专论·综述

- (233) 基于 Mobiwan 的 IPv6 移动性 王开辉、李丹美、乔杰

Contents

System Construction

- (01) Design and Implementation of Logistics Information System Based on BPM XU Ke - Peng, ZUO Chun
 (05) Design and Realization of Real - Time Moving Object Detection System Based on DM642 LIU Jing, WANG Ling, KUANG You - Yu
 (09) Emergency Rescue GIS Platform Based on Service Container and Its Application LIAO Ling - Song, ZHANG Rui - Xin, LI Ai - Ping, YAN Rui - Lan
 (14) Design and Implementation of Software Structure in Mobile Communication GONG Xue - Sheng, MA Hong - Lian, DING Nan
 (19) Design and Implementation of Seismic Data Processing Oriented Cluster System JIN Di, XUE Zhong - Zhou, YANG Jun
 (24) Information System Based on SOA LONG Yi - Min
 (28) An Agent - Based Peer - to - Peer Style Distributed Component Repository CHAGN Jie, ZHAO Zhi - Kun, XU Ru - Zhi
 (32) Design of a Detection System for Organophosphorus Pesticides Based on USB SUN Yi, LIU Jing - Biao, ZHOU Qiao - Di
 (36) Design and Implementation of Embedded Flash File System CHEN Gui - Sheng, LI Zhi - Gang

Research and Development

- (41) Preliminary Research of C + + Source Code Analysis System Based on G + + Front End PENG Si - Wei, XIN Li - Juan
 (46) A New Method to Simulate Fancy Yarn Based on DLA Model GUO Wei - Jie, ZHANG Rui - Lin
 (50) Chaotic Image Scrambling Algorithm Based on Magic Cube HE Chuang - Yi, CHEN Le - Geng, WANG Zhi - Da
 (54) Design and Implementation of Customized Multimedia Processing Platform Product ZHANG Gui - Zhou, YE Ming
 (58) A Fast FBP Algorithm for Special Density Detection YANG Bo, ZHENG Fei, GUO Qi, KONG Bin
 (63) Design and Realization of a Bulk Data Validation Method LI Jie, NING Fan, ZHAO Guo - An
 (68) Method of Entities Associated Based on Function Driven ZHAO Zhi - Yun
 (71) Research and Implementation of the Technology in 3D Simulation of Hybrid System Based on OSG CHEN Kui, WANG Yi - Gang, YAN Fu - Xin
 (77) Node Deployment Algorithm for Heterogeneous Sensor Networks YUAN Hui - Yong, YANG Si - Qing
 (80) Moving Shadow Removal Based on Improved LBP Features HAO Can, ZHU Xin - Zhong, ZHAO Jian - Min, XU Hui - Ying
 (84) Agile Software Test of Cluster Platform XU Shu - Huan, LEI Yue - Ming
 (89) Design and Implementation of Transaction Framework for Web Services Composition FANG Bing - Wu, LIU Li, ZHANG Chen - Shu
 (94) ER - Based Vague Multi - QoS Measurement and Grid Task Scheduling XUN Zhi, HUANG De - Cai, TAO Li - Min
 (100) Customer Data Mining for Supporting Cross - Marketing of Financial Products HUANG Hong, HONG Yi
 (104) Design of Link Aggregation Finite State Machine Module Based LACP ZHENG Tao, GUO Yu - Shun
 (109) Implementation of Improved FNG State Machine XIA Fang - Ping, QIN Hui - Bin
 (113) Intrusion Detection System Combining Misuse and Anomaly Based on Neural Network Ensemble CHEN Xiao, XIA Wei, BAO Wen
 (116) Improvement of Sparse Matrix - Vector Multiplication on GPU MA Chao, WEI Gang, PEI Song - Wen, WU Bai - Feng
 (121) Workflow Process Modeling Based on Colored WF_logic Net WANG Jing - Xin, LI Yan - Mei, XU Juan
 (125) Population Size Selection of Particle Swarm Optimizer Algorithm ZHANG Wen - Fen, WANG Gang, ZHU Zhao - Hui, XIAO Juan

Application Case

- (129) Automated Testing Method for Financial Reporting System Based on Rule Statement ZHANG Shi - Heng, LUO Sheng - Xian
 (133) Research and Design of Data Collection and Communication Terminal for Large Caliber Water Meter ZHANG Xie - Yan, WANG Ling
 (137) Implementation of Moving Objects Detection Method on FPGA MA Hong - Lian, QI Wei, DING Nan, LI Dong
 (141) Design of Measurement System of Moment of Inertia Based on LabVIEW ZHANG Yong, SUN Ning
 (145) Design of Ultra - Low Power Sewage Discharge Monitoring Terminal Based on GPRS HUI Xiao - Wei, WU Jia - Qi, YU Xi - Yang
 (148) RFID Meter Reading System Based on CAN Bus and ARM Technology LIN Li - Qiao, HAO Shi - Yu

Applied Technique

- (151) Improvement of Localization Algorithm Based on RFID Technology and Its Application in Libraries HU Yang
 (154) Pseudo Parallel Genetic Algorithm and Its Application to Optimization of Maintenance Planning for Existing Bridges WANG Yan - Ru, WANG Gui - Xuan
 (160) Applying Inverse Process Approach of QFD to Software Quality Assessment FENG Zhen, ZHANG Suo - Di
 (163) An Auto - Adaptive Model Update Tracking Algorithm Using Feature Matching Filter ZHOU Chen - Chen, HUANG Chang, WANG Xiao - Ming
 (167) Line - Pearl Pattern for Visualization of Clustering Results WANG Kai - Jun, LI Jian
 (171) Using Clustering to Improve Self - Purity of Dynamic Clonal Selection Algorithm XIAO Jun - Bi, JI Cui - Cui
 (174) Research and Implementation of Photon Mapping in CUDA LIN Qi - Xuan, WANG Yi - Gang
 (179) Application of ZigBee Technology in Industrial Monitoring Network HE Cai - Jun, FANG Huo - Hui, GUAN Yu - Qiu, HUANG Li
 (183) A Collaborative Filtering Recommendation Algorithm Based on Folksonomy WU Chun - Xu, LI Jia - Jun, SHI Hui

Experiences Exchange

- (187) Improvement and Implementation of Database Access Interface Based on OCI9 XU Wei, HU Shu, YANG Cheng

- (191) Influence of Data Source Features on Sequential Pattern MiningWANG Cui-Qing, CHEN Wei-Ru, ZHANG Jing
 (194) Search Engine OptimizationLIANG Jing, GE Yu, HONG Jie
 (198) Research and Realization of Lua and C + + Cross-MethodDENG Zheng-Yang, CHEN He-Ping, SU Peng
 (202) Application of Bayesian Network and Rough Sets in Software Risk EstimationREN Xue-Li
 (205) University Automatic Examination Timetabling Based on the PBIL AlgorithmYUAN Li-Yong, JIN Bing-Yao, LIU Ri-Xian
 (209) Improvement and Realization of Sobel Algorithm in License Plate Recognition SystemLIU Jin, YANG Shun, YU Huan-Ming
 (212) Analysis on the Security of College Web Sites from Attacker's ViewpointBAI Xing-Rui, LIU Yao-Yan
 (216) Customizing Windows CE ShellQIN Lang, LEI Yue-Ming
 (220) Web Testing Based on Performance Criteria of Load TestingPU Yun-Ming, WANG Bao-Yu

Product Applied

- (224) A Wireless Search and Rescue System Based on CC2430LI Xiao-Le, LIN Hui
 (227) Design and Implementation of Smart Home System Based on ARM and GPRS NetworkLI Xin-Chun, ZHAO Shuang-Hua
 (230) Design of Energy-Saving System for Academic Buildings Based on ARM9 and CC2430LI Xin-Chun, LI Yong-Xi, FAN Cui-Yan

Special Issue

- (233) Mobility of IPv6 Based on MobiwanWANG Kai-Hui, LI Dan-Mei, QIAO Jie

计算机系统应用

Jisuanji Xitong Yingyong

(月刊, 1992 年创刊)

第 19 卷 第 5 期 2010 年 5 月

Computer Systems and Applications

(Monthly)

(Started in 1992)

Vol.19 No.5 May 2010

编 辑 《计算机系统应用》编辑部
(北京 8718 信箱 邮编 100190)

电话: 010-62661041

E-mail: csa@iscas.ac.cn

http://www.c-s-a.org.cn

Edited by Editorial Board of Computer Systems and Applications
(P.O.Box 8718, Beijing 100190, P.R.China)

E-mail: csa@iscas.ac.cn

http://www.c-s-a.org.cn

Editor-in-Chief: SU Zhen-Ze

Sponsored by Institute of Software, The Chinese Academy of Sciences (ISCAS)

Published by Editorial Dept. of CSA

Printed by Beijing Changning Printing House

Generally Distributed by Beijing Bureau for Distribution of Newspapers and Journals

Domestically Distributed by All Local Post Offices in China

Overseas Distributed by China International Book Trading Corporation (P.O.Box 399, Beijing 100044, China)

主 编 苏振泽
主办单位 中国科学院软件研究所
主管单位 中国科学院
出 版 《计算机系统应用》编辑部
广告证号 京海工商广字第 0166 号
印 刷 北京长宁印刷厂
总发行处 北京报刊发行局
订 购 处 全国各地邮局
国外总发行 中国国际图书贸易总公司

CN 11-2854/TP

ISSN 1003-3254

国内邮发代号: 82-558

国外发行代号: 6218M

©2010 ISCAS (版权所有)

定价: 28.00 元

公 开 发 行