



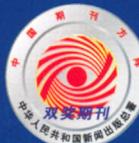
中国计算机学会会刊

ISSN 1001-9081  
CN 51-1307/TP  
CODEN JYIIDU

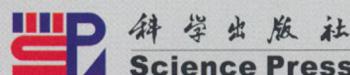
# 計算機應用

## JOURNAL OF COMPUTER APPLICATIONS

- 中文核心期刊
- 两届国家期刊奖提名奖
- 全国优秀科技期刊一等奖



第32卷 第9期 2012年9月  
Vol.32 No.9 Sep. 2012



中国科学院成都计算机应用研究所主办

2012  
第 9 期

国家期刊奖获奖期刊  
中国期刊方阵“双奖”期刊  
中文核心期刊  
中国科技核心期刊  
中国计算机学会会刊  
中国科技论文统计源期刊  
中国科学引文数据库刊源期刊  
中国学术期刊综合评价数据库统计源期刊  
中国期刊网、中国学术期刊(光盘版)收录期刊

中文科技期刊数据库收录期刊  
英国《科学文摘》收录期刊  
俄罗斯《文摘杂志》收录期刊  
《日本科学技术振兴机构数据库》收录期刊  
美国《剑桥科学文摘》收录期刊  
波兰《哥白尼索引》收录期刊  
德国《数学文摘》收录期刊  
CEPS 中文电子期刊服务全文收录期刊  
RCCSE 中国核心学术期刊(扩展版)

# 计算机应用

( Jisuanji Yingyong )

第32卷 第9期 2012年9月

## 目 次

### 网络与通信

高速铁路3G通信的覆盖与切换技术综述	蒋新华,朱 鑫,邹复民(2385)
基于加密的 BitTorrent 系统间接激励机制	张红梅,齐法制,满金贵,王 森(2391)
增强型 RFID 极低限相互认证协议	张学军,蔡文琦,王 玉(2395)
支持多类业务的移动 Ad Hoc 网络拓扑透明 MAC 调度码	李西洋,范平志(2400)
基于物理层网络编码的通信信号分析方法	刘勤永,彭 华(2405)
基于博奔论的认知无线电频谱分配	张北伟,胡琨元,朱云龙(2408)
基于混沌和声搜索的最优线性协作频谱感知算法	李岳洪,万 频,王永华,杨 健,邓 钦(2412)
基于双重梯度的车辆传感器网络定向扩散梯度场	郑明才,李勇帆,赵小超,李科峰(2418)
基于链路带宽利用率的路由选择算法	杨晓琴,章丽芳,曹庆皇,孙海燕,李卓青(2422)
OFDM 系统中基于 BP 神经网络的定位算法	毛永毅,李 成,张宏君(2426)
无线传感器网络质心定位新算法及性能分析	张爱清,叶新荣,胡海峰(2429)
估计盲信源分离混合矩阵的通用方法	张延良,张伟涛,杜静静(2432)
两路中继协作通信的中断概率及分集复用折中性能分析	赵永驰,刘静霞,李恩玉(2436)
基于 depth-map 和分布式视频编码的多视点视频传输方法	吴 琳,金志刚,赵安安,周 圆(2441)
非高斯噪声背景下小波阈值算法分析	李庆华,山拜·达拉拜,邱新建,廖 畅,孙全富(2445)

### 先进计算

基于自适应蜂群算法的云计算负载平衡机制	姚 靖,何聚厚(2448)
求解可重入并行机调度的混合禁忌搜索算法	赵 月,胡玉梅(2451)
基于 Java 的按位拆分快速排序并行算法	度 清,宋耀虎(2455)
快速复杂网络聚类图形处理器并行算法	王海峰(2458)
基于 MapReduce 的决策树算法并行化	陆 秋,程小辉(2463)
基于 CUDA 的大规模群体行为实时仿真并行实现及优化	贺毅辉,叶 晨,刘志忠,彭 伟(2466)
扩展到整数类型范围的模的模乘算法	邵 荣(2470)

### 数据库技术

基于关联规则的本体相似度综合计算方法	李 华,苏 乐(2472)
改进的 GK 聚类算法	张妨妨,钱雪忠(2476)
基于直觉模糊聚类的 Web 资源推荐方法	肖满生,汪新凡,周丽娟(2480)
非结构化文本数据的 GIS 描述性查询方法	蒲海霞,李佳田,李 锐,何育枫,王 华(2483)
基于查询扩展的人名消歧	杨欣欣,李培峰,朱巧明(2488)
基于自动机理论的 PDF 文本内容抽取	王晓娟,谭建龙,刘燕兵,刘金刚(2491)
支持大规模智能电网的数据存储方法	宋宝燕,张洪梅,王 妍,李 琼(2496)
FAT32 下有效数据快速恢复方法	杨德明(2500)

### 人工智能

拉格朗日支持向量回归的有限牛顿算法	郑逢德,张鸿宾(2504)
-------------------	---------------

基于支持向量回归的多时间序列自回归方法	张伟, 柳先辉, 丁毅, 史德明(2508)
基于双字典集的信号稀疏分解算法	王树朋, 王文祥, 李宏伟(2512)
基于邻域保持的流形学习算法评价模型	石陆魁, 张军, 宫晓腾(2516)
基于核主元分析的神经网络控制图模式识别	胡胜, 李太福, 魏正元, 颜克胜(2520)
程度化语言值链上的语言真值概念格及其应用	杨丽, 王宇辉, 徐扬(2523)
基于测距特征向量匹配和模糊控制的室内清洁机器人路径规划	张志杰(2527)
优化蚁群算法在反舰导弹航路规划中的应用	高曼, 刘以安, 张强(2530)
需求与物流网络不确定下的应急救援选址问题	陶莎, 胡志华(2534)
云变异人工蜂群算法	林小军, 叶东毅(2538)
基于梅尔频率倒谱系数与翻转梅尔频率倒谱系数的说话人识别方法	胡峰松, 张璇(2542)
智能办公环境温度控制方法	王海珍, 廉佐政, 滕艳平(2545)

## 图形图像技术

基于二叉树和 GPU 的无缝地形场景渲染方法	曹巍, 段光耀(2548)
基于交叉视觉皮质模型的骨架伪分支剔除方法	周理, 何林远, 孙毅, 毕笃彦, 高山(2553)
基于单目视觉的室内机器人障碍检测方案	何少佳, 刘子扬, 史剑清(2556)
视频结构化描述模型	符茂胜, 罗斌, 吴永龙, 孔敏(2560)
基于图匹配的旋转不变弹性点匹配算法	连玮(2564)
基于视觉感知机理的大容量彩色图像盲隐写算法	康年锦, 陈昭炯(2568)
基于共生矩阵的彩色图像增强算法	杨冰清, 田小平, 吴成茂(2573)
基于加速鲁棒特征的广角图像自动拼接校正算法	王铁建, 刘艳丽(2576)
H.264 运动估计算法 UMHexagonS 的斐波纳契数列优化	李世平, 郑文彬, 石鑫(2580)
基于区域特征的非下采样 Contourlet 变换卫星云图融合	汪大, 毕硕本, 王必强, 颜坚(2585)
基于直接局部保持投影和尺度不变特征变换的人脸识别方法	李政仪, 冯贵玉, 赵龙(2588)

## 信息安全

图像信息安全处理的矩阵序列的周期性性质	钟锦, 王大刚(2592)
基于三维亚仿射变换的数字图像置乱技术	邹伟刚, 陈沛云, 黄江燕(2595)
基于频谱切割和二维 Arnold 变换的彩色图像加密算法	龚黎华, 曾绍阳, 周南润(2599)
混沌文本零水印的词法主动攻击	李婧, 房鼎益, 何路(2603)
基于 LISOMAP 的相关向量机入侵检测模型	唐朝伟, 李超群, 燕凯, 严鸣(2606)
基于随机博弈的网络可生存性策略选择模型	梁霄, 孟相如, 庄绪春, 伍文(2609)
P2P 网络中基于随时间推移的风险值评估的信任管理模型	郭一凡, 李腾, 郭玉翠(2613)
P2P 僵尸网络的有效免疫措施	冯丽萍, 韩琦, 王鸿斌, 康苏明(2617)
复杂网络中的弱化免疫策略分析	田思, 李慧嘉, 赵岳(2620)
权限扩展 RBAC 模型的本体表示和实现	周加根, 叶春晓(2624)

## 典型应用

基于关联面积法的物流货运量组合预测模型	周程, 张培林(2628)
基于混合需求的供应链多级库存协同订货模型	熊浩(2631)
生成最优单毛坯条带 T 型布局方式的精确算法	季君, 陆一平, 查建中, 崔耀东(2634)
虚拟仿真技术在网络闭环控制中的应用	徐淑萍(2638)
基于三维线性倒立摆的仿人机器人步态规划	于国晨, 刘永信, 李晓红(2643)
机场典型平行跑道容量仿真分析	李雄, 李冬宾, 卫东选(2648)
基于集成定位-运输路线安排问题的废旧家电逆向回收物流网络优化	张军(2652)
企业营销网络上的传播动力学特性	秦效宏, 黄光球(2656)
解决电子不停车收费系统干扰问题的信息融合方法	王亮, 鲁华祥, 景为平, 陈天翔(2660)
ADS-B 延迟时间计算方法的可行性分析	程擎(2664)
坑道工程动荷段抗精确打击毁伤分析系统	袁辉, 王凤山(2667)
移动地理信息系统中的多源异构数据融合模型	李文闻, 章永平, 潘瑜春(2672)
基于 ArcGIS 平台的厂区地下管网空间分析	肖靖峰, 王晓东, 姚宇(2675)
基于 SaaS 模式的电子商务推荐平台	刘嘉, 惠成峰, 都兴中, 陈振宇(2679)

第 27 届 IEEE 并行与分布式处理国际会议(IEEE IPDPS 2013) 征文通知	(封二)
2012 年第二届全国文字与计算学术研讨会(CCF-NSCC 2012) 征文通知	(封二)
第 17 届亚太地区知识发现与数据挖掘国际会议(PAKDD 2013) 征文通知	(封三)
The 10th IEEE International Conference on Automatic Face and Gesture Recognition	(封三)

# Journal of Computer Applications

Vol. 32 No. 9 Sep. 2012

## Contents

### Network and communications

Review of coverage and handoff technologies of 3G communication for high-speed railway .....	JIANG Xin-hua, ZHU Quan, ZOU Fu-min (2385)
Encryption-based indirect incentive mechanism in BitTorrent .....	ZHANG Hong-mei, QI Fa-zhi, MAN Jin-gui, WANG Miao (2391)
Enhanced minimalist mutual-authentication protocol for RFID system .....	ZHANG Xue-jun, CAI Wen-qi, WANG Yu (2395)
Topology-transparent MAC scheduling code for mobile Ad Hoc network supporting multi-class services .....	LI Xi-yang, FAN Ping-zhi (2400)
Analysis of communication signals based on physical-layer network coding .....	LIU Qin-yong, PENG Hua (2405)
Parameters adjustment in cognition radio spectrum allocation based on game theory .....	ZHANG Bei-wei, HU Kun-yuan, ZHU Yun-long (2408)
Optimal linear cooperation spectrum sensing method based on chaos harmony search algorithm .....	LI Yue-hong, WAN Pin, WANG Yong-hua, YANG Jian, DENG Qin (2412)
Directed diffusion gradient field based on double gradient in vehicular sensor networks .....	ZHENG Ming-cai, LI Yong-fan, ZHAO Xiao-chao, LI Ke-feng (2418)
Routing algorithm based on link bandwidth utilization rate .....	YANG Xiao-qin, ZHANG Li-fang, CAO Qing-huang, SUN Hai-yan, LI Zhuo-qing (2422)
Location algorithm based on BP neural network in OFDM system .....	MAO Yong-yi, LI Cheng, ZHANG Hong-jun (2426)
Performance analysis of new centroid localization algorithm in wireless sensor network .....	ZHANG Ai-qing, YE Xin-rong, HU Hai-feng (2429)
General method to estimate mixture matrix in blind source separation .....	ZHANG Yan-liang, ZHANG Wei-tao, DU Jing-jing (2432)
Performance analysis of outage probability and diversity-multiplexing tradeoff for two-path relaying cooperative communications .....	ZHAO Yong-chi, LIU Jing-xia, LI En-yu (2436)
Multi-view video transmission method based on depth-map and distributed video coding .....	WU Lin, JIN Zhi-gang, ZHAO An-an, ZHOU Yuan (2441)
Wavelet threshold algorithm analysis under non-Gaussian noise background .....	LI Qing-hua, Senbai Dalabaev, QIU Xin-jian, LIAO Chang, SUN Quan-fu (2445)

### Advanced computing

Load balancing strategy of cloud computing based on adaptive artificial bee colony algorithm .....	YAO Jing, HE Ju-hou (2448)
Hybrid tabu search for scheduling reentrant jobs on parallel machines .....	ZHAO Yue, HU Yu-mei (2451)
Bit-split parallel algorithm for quick sorting based on Java .....	TUO Qing, SONG Yao-hu (2455)
Parallel algorithms for complex network clustering with GPUs .....	WANG Hai-feng (2458)
Parallelization of decision tree algorithm based on MapReduce .....	LU Qiu, CHENG Xiao-hui (2463)
Parallel simulation and optimization of CUDA-based real-time huge crowd behavior .....	HE Yi-hui, YE Chen, LIU Zhi-zhong, PENG Wei (2466)
Modular multiplication algorithm with modulus expanded to maximum of integer .....	SHAO Rong (2470)

### Database technology

Comprehensive method of computing ontology similarity based on association rules .....	LI Hua, SU Le (2472)
Improved GK clustering algorithm .....	ZHANG Fang-fang, QIAN Xue-zhong (2476)
Web resource recommendation method based on intuitive fuzzy clustering .....	XIAO Man-sheng, WANG Xin-fang, ZHOU Li-juan (2480)
Descriptive query method based on unstructured text data in GIS .....	PU Hai-xia, LI Jia-tian, LI Rui, HE Yu-feng, WANG Hua (2483)
Name disambiguation based on query expansion .....	YANG Xin-xin, LI Pei-feng, ZHU Qiao-ming (2488)
Extraction of text content from PDF documents based on automaton theory .....	WANG Xiao-juan, TAN Jian-long, LIU Yan-bing, LIU Jin-gang (2491)
Data storage method supporting large-scale smart grid .....	SONG Bao-yan, ZHANG Hong-mei, WANG Yan, LI Qiong (2496)
Fast recovery method of effective data based on FAT32 .....	YANG De-ming (2500)

### Artificial intelligence

Finite Newton algorithm for Lagrangian support vector regression .....	ZHENG Feng-de, ZHANG Hong-bin (2504)
Multiple time series autoregressive method based on support vector regression .....	ZHANG Wei, LIU Xian-hui, DING Yi, SHI De-ming (2508)
Signal sparse decomposition based on the two dictionary sets .....	WANG Shu-peng, WANG Wen-xiang, LI Hong-wei (2512)
Evaluation model based on neighborhood preservation for manifold learning algorithms .....	SHI Lu-kui, ZHANG Jun, GONG Xiao-teng (2516)

Neural network for control chart pattern recognition based on kernel principle component analysis	HU Sheng, LI Tai-fu, WEI Zheng-yuan, YAN Ke-sheng (2520)
Linguistic truth-valued concept lattice based on graded linguistic values chain and its application	YANG Li, WANG Yu-hui, XU Yang (2523)
Indoor cleaning robot path planning based on distance feature vector matching and fuzzy control	ZHANG Zhi-jie (2527)
Application of improved ant colony algorithm to route planning of anti-ship missile	GAO Man, LIU Yi-an, ZHANG Qiang (2530)
Facility location in emergency relief with uncertain demand and logistics network	TAO Sha, HU Zhi-hua (2534)
Artificial bee colony algorithm based on cloud mutation	LIN Xiao-jun, YE Dong-yi (2538)
Speaker recognition method based on Mel frequency cepstrum coefficient and inverted Mel frequency cepstrum coefficient	HU Feng-song, ZHANG Xuan (2542)
Temperature control approach in intelligent office environment	WANG Hai-zhen, LIAN Zuo-zheng, TENG Yan-ping (2545)

## Graphics and image technology

Seamless terrain rendering method based on binary tree and GPU	CAO Wei, DUAN Guang-yao (2548)
Algorithm of biased skeleton trim based on intersecting cortical model	ZHOU Li, HE Lin-yuan, SUN Yi, BI Du-yan, GAO Shan (2553)
Obstacle detection of indoor robots based on monocular vision	HE Shao-jia, LIU Zi-yang, SHI Jian-qing (2556)
Structural description model for video	FU Mao-sheng, LUO Bin, WU Yong-long, KONG Min (2560)
Rotation-invariant non-rigid point matching algorithm based on graph matching	LIAN Wei (2564)
Large-capacity blind steganography algorithm for color images based on visual perception mechanism	KANG Nian-jin, CHEN Zhao-jiong (2568)
Enhancement algorithm for color images based on co-occurrence matrix	YANG Bing-qing, TIAN Xiao-ping, WU Cheng-mao (2573)
Automatic stitching and regulating algorithm for wide-angle images based on speed-up robust feature	WANG Tie-jian, LIU Yan-li (2576)
Fibonacci optimized UMHexagonS algorithm for H.264 motion estimation	LI Shi-ping, ZHENG Wen-bin, SHI Xin (2580)
Satellite cloud image fusion based on regional feature with nonsubsampled contourlet transform	WANG Da, BI Shuo-ben, WANG Bi-qiang, YAN Jian (2585)
Face recognition method based on DLPP-SIFT	LI Zheng-yi, FENG Gui-yu, ZHAO Long (2588)

## Information security

Cyclical nature of matrix sequence in image information security processing	ZHONG Jin, WANG Da-gang (2592)
Digital image scrambling technology based on three dimensional sub-affine transformation	ZOU Wei-gang, CHEN Pei-yun, HUANG Jiang-yan (2595)
Color image encryption algorithm based on cutting spectrum and 2D Arnold transform	GONG Li-hua, ZENG Shao-yang, ZHOU Nan-run (2599)
Lexical active attack on chaotic text zero-watermarking	LI Jing, FANG Ding-yi, HE Lu (2603)
Intrusion detection model based on LISOMAP relevant vector machine	TANG Chao-wei, LI Chao-qun, YAN Kai, YAN Ming (2606)
Strategy selection model for network survivability based on stochastic game	LIANG Xiao, MENG Xiang-ru, ZHUANG Xu-chun, WU Wen (2609)
Trust management model based on value-at-risk evaluation with changing time in P2P network	GUO Yi-fan, LI Teng, GUO Yu-cui (2613)
Effective immune measures on P2P botnets	FENG Li-ping, HAN Qi, WANG Hong-bin, KANG Su-ming (2617)
Analysis of weakened immunization strategy on complex network	TIAN Si, LI Hui-jia, ZHAO Yue (2620)
Ontology representation and realization of extended permission in RBAC	ZHOU Jia-gen, YE Chun-xiao (2624)

## Typical applications

Adaptive combination forecasting model for logistics freight volume based on area correlation method	ZHOU Cheng, ZHANG Pei-lin (2628)
Collaborative ordering models of multi-echelon inventory system based on hybrid demand	XIONG Hao (2631)
Exact algorithm for generating optimal homogenous strip T-shape layouts	JI Jun, LU Yi-ping, ZHA Jian-zhong, CUI Yao-dong (2634)
Application of virtual simulation technology in network closed-loop control	XU Shu-ping (2638)
Humanoid robot gait planning based on 3D linear inverted pendulum model	YU Guo-chen, LIU Yong-xin, LI Xiao-hong (2643)
Airport capacity analysis for typical parallel runways based on simulation method	LI Xiong, LI Dong-bin, WEI Dong-xuan (2648)
Reverse logistic networks optimization of home appliances return based on combined location routing problem	ZHANG Jun (2652)
Transmission dynamics feature of enterprise marketing networks	QIN Xiao-hong, HUANG Guang-qiu (2656)
Information fusion based interference solution in electronic toll collection system	WANG Liang, LU Hua-xiang, JING Wei-ping, CHEN Tian-xiang (2660)
Feasibility analysis on method of calculating ADS-B latency	CHENG Qing (2664)
Precise damage analysis on active load section of protective engineering	YUAN Hui, WANG Feng-shan (2667)
Multi-source heterogeneous data fusion model in mobile geographic information system	LI Wen-chuang, ZHANG Yong-ping, PAN Yu-chun (2672)
Underground pipe network spatial analysis in large plant with ArcGIS	XIAO Jing-feng, WANG Xiao-dong, YAO Yu (2675)
E-commerce recommendation platform based on SaaS pattern	LIU Jia, HUI Cheng-feng, DU Xing-zhong, CHEN Zhen-yu (2679)