



中国计算机学会会刊

ISSN 1001-9081

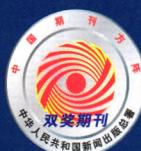
CN 51-1307/TP

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33卷 第11期 2013年11月  
Vol.33 No.11 Nov. 2013

四川省计算机学会  
中国科学院成都分院 主办

2013  
第11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

# 计算机应用

## (Jisuanji Yingyong)

第33卷 第11期 2013年11月

## 目 次

### 网络与通信

- 基于W学习的无线网络传输调度方案 ..... 朱江, 彭祯珍, 张玉平(3005)  
基于受限网络应用层协议的物联网应用代理研究与实现 ..... 宋衍, 傅骞(3010)  
可信邻居距离估计的DV-Hop校准算法 ..... 江禹生, 陈挺, 李萍(3016)  
新的太赫兹超高速无线网络媒体访问控制协议 ..... 周逊, 曹亚楠, 张庆伟, 任智, 漆自名(3019)  
无线传感器网络中基于动态规划的节点高效部署算法 ..... 许秀兰, 李克清, 黄瑜岳(3024)  
基于矩阵置换的最优无碰撞区跳频序列集的构造 ..... 陈浩源, 柯品惠, 张胜元(3028)  
基于空时离散傅里叶变换投影的宽带旋转不变技术估计信号参数算法 ..... 卞红雨, 王珺琳(3032)  
基于模糊层次分析法的网络业务性能评估模型 ..... 赵华琼, 唐学文(3035)  
改进的非线性卫星信道均衡器 ..... 郭业才, 徐冉(3039)  
利用多级线性预测改善有限反馈系统反馈量 ..... 曾仕伦, 徐家品(3042)

### 数据库技术

- 基于散列的频繁项集分组算法 ..... 王红梅, 胡明(3045)  
空间关联规则的增量维护 ..... 董林, 舒红(3049)  
基于区间相似度的模糊时间序列预测算法 ..... 刘芬, 郭躬德(3052)  
加速大规模数据集的离群点检测 ..... 薛安荣, 闻丹丹, 刘彬(3057)  
考虑项目属性的协同过滤推荐模型 ..... 杨兴耀, 于炳, 吐尔根·依布拉音, 钱育蓉, 孙华(3062)  
社会网络环境下的协同推荐方法 ..... 李慧, 胡云, 施珺(3067)  
基于主题聚簇评价的论坛热点话题挖掘 ..... 江浩, 陈兴蜀, 杜敏(3071)  
基于用户角色定位的微博热点话题检测方法 ..... 杨武, 李阳, 卢玲(3076)  
科技文献中作者研究兴趣动态发现 ..... 史庆伟, 李艳妮, 郭朋亮(3080)

### 人工智能

- 迁移学习支持向量回归机 ..... 史荧中, 王士同, 蒋亦樟, 刘培林(3084)  
组合标记的多视图半监督协同分类算法 ..... 于重重, 刘宇, 谭励, 商利利, 马萌(3090)  
基于稀疏贝叶斯学习的个人信用评估 ..... 李太勇, 王会军, 吴江, 张智林, 唐常杰(3094)  
正交及不相关边界邻域保持嵌入的人脸识别 ..... 陈达遥, 陈秀宏(3097)  
基于发现者预选择机制的自适应群搜索算法 ..... 于长青, 王竹荣(3102)  
小波神经网络模型的改进方法 ..... 张炎亮, 陈鑫, 李亚东(3107)  
改进的蚁群遗传优化算法及其应用 ..... 刘传领(3111)  
技术创新平台中基于Agent的多议题协商算法与策略 ..... 储军飞, 潘郁, 张振海(3114)  
基于概率后缀树的移动对象轨迹预测 ..... 王兴, 蒋新华, 林劼, 熊金波(3119)  
基于改进人工协调场的多机器人避碰算法 ..... 吴晋, 张国良, 汤文俊, 孙一杰(3123)  
基于免疫遗传算法的复杂网络社区发现 ..... 曹永春, 田双亮, 邵亚斌, 蔡正琦(3129)  
基于树状朴素贝叶斯模型的社会网络关系预测 ..... 伍杰华(3134)  
基于模板匹配的快速语音关键词检出方法 ..... 朱国腾, 孙伟(3138)

多标号学习矢量量化的食用油掺伪检测 ..... 陈景波(3141)

## 先进计算

- 基于演化算法的带侧摆多星点目标调度算法 ..... 王茂才, 程格, 戴光明, 宋志明(3144)  
非正规化循环的单指令多数据向量化 ..... 侯永生, 赵荣彩, 高伟, 高伟(3149)  
基于分层与容错机制的云计算负载均衡策略 ..... 陈波, 张曦煌(3155)  
基于动态自适应蚁群算法的云计算任务调度 ..... 王芳, 李美安, 聂卫东(3160)  
中缀算术表达式的轻量化求值算法 ..... 白宇, 郭显娥(3163)

## 多媒体处理技术

- 多特征融合的网格模型简化方法 ..... 王海玲, 王建, 印桂生, 乔付, 周波(3167)  
基于特征点检测的三维模型最佳视点选择 ..... 朱帆, 杨风雷(3172)  
基于视觉显著熵与 Object Bank 特征的图像记忆性模型 ..... 陈长远, 韩军伟, 胡新韬, 程培, 郭雷(3176)  
结合尺度不变特征变换和 Kalman 滤波的 Mean Shift 视频运动目标跟踪 ..... 朱志玲, 阮秋琦(3179)  
基于立体视觉的新组合不变矩腹部体型重建 ..... 刘欢, 朱平, 肖蓉, 唐卫东(3183)  
基于改进朴素贝叶斯分类器的康复训练行为识别方法 ..... 张毅, 黄聪, 罗元(3187)  
遥感影像目标识别中的多尺度分析 ..... 薄树奎, 荆永菊(3190)  
基于四元数双谱切片的彩色图像配准算法 ..... 连玮, 左军毅(3193)  
基于城区距离的自适应加权均值滤波算法 ..... 曹萌, 张有会, 王志巍, 董蕊, 郑英娟(3197)  
基于 Mallat-Zhong 离散小波变换小波的超声图像各向异性扩散抑噪方法 ..... 吴世彬, 陈波, 董万利, 高小明(3201)  
基于视觉灵敏度及改进方向距离彩色图像迭代滤波算法 ..... 李高西, 曹军, 张福元, 李华(3204)  
基于光栅投影序列图像融合的倾斜校正算法 ..... 刘旭, 巫玲, 陈念年, 范勇, 段晶晶, 任新宇, 夏菁菁(3209)  
基于纹理聚类的抠图算法 ..... 阳伟, 甘涛, 兰刚(3213)  
基于结构化粒子模型的云可视化应用 ..... 王畅, 谢永华, 袁复兴(3217)  
宣纸上的墨水扩散模拟 ..... 范东云, 李海晟(3220)

## 信息安全

- 基于链路性能分析的网络安全态势评估 ..... 黄正兴, 苏旸(3224)  
基于加权多属性云的主观信任度量方法 ..... 范涛, 张明清, 刘小虎, 程建(3228)  
基于 CL 多小波变换和组合位平面理论的秘密信息共享算法 ..... 张弢, 任帅, 巨永锋, 凌尧, 杨照辉(3232)  
基于身份的受控文档透明加解密方案 ..... 金彪, 熊金波, 姚志强, 刘西蒙(3235)  
识别恶意软件中的加密函数 ..... 蔡建章, 魏强, 祝跃飞(3239)  
关于 RSA 算法中代数结构的进一步研究 ..... 裴东林, 李旭(3244)  
关于秘密共享方案在应用 Pi 演算中的实现 ..... 徐军(3247)

## 计算机软件技术

- Web 服务组合评分分配方法 ..... 王威, 付晓东, 夏永滢, 田强, 李昌志(3252)  
基于区间集的 Cppcheck 数组边界缺陷检测 ..... 张仕金, 尚赵伟(3257)  
基本路径测试用例设计算法 ..... 王敏, 陈少敏, 陈亚光(3262)  
移动数据库缓存模型研究 ..... 翁唱玲, 杨清(3267)

## 典型应用

- 基于预测承诺契约的物流服务供应链协调 ..... 何婵, 刘伟(3271)  
舰载机航空保障资源优化配置的循环网络模型 ..... 朱齐丹, 吕开东, 李新飞(3276)  
基于耳蜗核模型改进双耳时间差的声源定位 ..... 张毅, 邢武超, 罗元, 何春江(3280)  
基于改进主元分析方法的隧道应变实时监测预警系统 ..... 杨彤瑶, 王彬, 李川, 何弼, 熊新(3284)  
机场跑道异物监测雷达的杂波图恒虚警率检测 ..... 吴静, 王洪, 汪学刚(3288)  
基于 Gauss 伪谱法的飞机最优目标瞄准控制 ..... 程建峰, 董新民, 薛建平, 谭雪芹(3291)  
引力搜索算法在青霉素发酵模型参数估计中的应用 ..... 王蕾, 陈进东, 潘丰(3296)  
基于超球体多类支持向量数据描述的医学图像分类新方法 ..... 谢国城, 蒋芸, 陈娜(3300)  
基于模糊与遗传逼近策略的轮胎预设定值充放气控制 ..... 潘小波(3305)  
应召搜潜中典型情况下潜艇分布概率的计算 ..... 单志超, 鞠建波, 曲晓慧, 温玮(3309)

第二届自然语言处理与中文计算会议通知 ..... (封二)

第一届中国计算机学会大数据学术会议通知 ..... (封二)

中科院成都信息技术有限公司介绍 ..... (封三)

# Journal of Computer Applications

Vol. 33 No. 11 Nov. 2013

## Contents

### Network and communications

- Transmission and scheduling scheme based on  $W$ -learning algorithm in wireless networks ..... ZHU Jiang, PENG Zhenzhen, ZHANG Yuping (3005)  
Network proxy research and implementation for Internet of things applications based on constrained application protocol ..... SONG Yan, FU Qian (3010)  
Calibration based DV-Hop algorithm with credible neighborhood distance estimation ..... JIANG Yusheng, CHEN Xian, LI Ping (3016)  
New medium access control protocol of terahertz ultra-high data-rate wireless network ..... ZHOU Xun, CAO Yanan, ZHANG Qingwei, REN Zhi, QI Ziming (3019)  
Efficient node deployment algorithm based on dynamic programming in wireless sensor networks ..... XU Xiulan, LI Keqing, HUANG Yuyue (3024)  
Construction of optimal frequency hopping sequence sets with no-hit zone based on matrix permutation ..... CHEN Haoyuan, KE Pinhui, ZHANG Shengyuan (3028)  
Wideband estimating signal parameters via rotational invariance technique algorithm based on spatial-temporal discrete Fourier transformation projection ..... BIAN Hongyu, WANG Junlin (3032)  
Evaluation model of network service performance based on fuzzy analytic hierarchy process ..... ZHAO Huaqiong, TANG Xuewen (3035)  
Improved equalizer of nonlinear satellite channel ..... GUO Yecai, XU Ran (3039)  
Improving amount of feedback in limited feedback systems with multi-level linear prediction ..... ZENG Shilun, XU Jiapin (3042)

### Database technology

- Frequent itemsets grouping algorithm based on Hash list ..... WANG Hongmei, HU Ming (3045)  
Incremental maintenance of discovered spatial association rules ..... DONG Lin, SHU Hong (3049)  
Interval-similarity based fuzzy time series forecasting algorithm ..... LIU Fen, GUO Gongde (3052)  
Speeding up outlier detection in large-scale datasets ..... XUE Anrong, WEN Dandan, LIU Bin (3057)  
Collaborative filtering recommendation models considering item attributes ..... YANG Xingyao, YU Jiong, Turgun IBRAHIM, QIAN Yurong, SUN Hua (3062)  
Collaborative recommendation algorithm under social network circumstances ..... LI Hui, HU Yun, SHI Jun (3067)  
On-line forum hot topic mining method based on topic cluster evaluation ..... JIANG Hao, CHEN Xingshu, DU Min (3071)  
Micro-blog hot topics detection method based on user role orientation ..... YANG Wu, LI Yang, LU Ling (3076)  
Dynamic finding of authors' research interests in scientific literature ..... SHI Qingwei, LI Yanni, GUO Pengliang (3080)

### Artificial intelligence

- Transfer learning support vector regression ..... SHI Yingzhong, WANG Shitong, JIANG Yizhang, LIU Peiling (3084)  
Multi-view semi-supervised collaboration classification algorithm with combination of agreement and disagreement label rules ..... YU Chongchong, LIU Yu, TAN Li, SHANG Lili, MA Meng (3090)  
Sparse Bayesian learning for credit risk evaluation ..... LI Taiyong, WANG Huijun, WU Jiang, ZHANG Zhilin, TANG Changjie (3094)  
Face recognition based on orthogonal and uncorrelated marginal neighborhood preserving embedding ..... CHEN Dayao, CHEN Xiuhong (3097)  
Producer pre-selection mechanism based on self-adaptive group search optimizer ..... YU Changqing, WANG Zhurong (3102)  
Modified method for wavelet neural network model ..... ZHANG Yanliang, CHEN Xin, LI Yadong (3107)  
Improved ant colony genetic optimization algorithm and its application ..... LIU Chuanling (3111)  
Agent-based multi-issue negotiation algorithm and strategy of technology innovation platform ..... CHU Junfei, PAN Yu, ZHANG Zhenhai (3114)  
Prediction of moving object trajectory based on probabilistic suffix tree ..... WANG Xing, JIANG Xinhua, LIN Jie, XIONG Jinbo (3119)  
Collision avoidance algorithm for multi-robot system based on improved artificial coordinating field ..... WU Jin, ZHANG Guoliang, TANG Wenjun, SUN Yijie (3123)  
Community detection in complex networks based on immune genetic algorithm ..... CAO Yongchun, TIAN Shuangliang, SHAO Yabin, CAI Zhengqi (3129)  
Tree augmented Naïve Bayesians model for ties prediction in social networks ..... WU Jiehua (3134)  
Rapid speech keyword spotting method based on template matching ..... ZHU Guoteng, SUN Wei (3138)  
Oil adulteration detection with multi-label learning vector quantization ..... CHEN Jingbo (3141)

### Advanced computing

- Scheduling algorithm for multi-satellite and point target task on swinging mode based on evolution algorithm ..... WANG Maocai, CHENG Ge, DAI Guangming, SONG Zhiming (3144)

Single instruction multiple data vectorization of non-normalized loops	HOU Yongsheng, ZHAO Rongcai, GAO Wei, GAO Wei (3149)
Load balancing strategy of cloud computing based on multi-layer and fault-tolerant mechanism	CHEN Bo, ZHANG Xihuang (3155)
Cloud computing task scheduling based on dynamically adaptive ant colony algorithm	WANG Fang, LI Mei'an, DAUN Weijun (3160)
Lightweight evaluation algorithm for infix arithmetic expression	BAI Yu, GUO Xian'e (3163)

## Multimedia processing technology

Multi-feature fusion method for mesh simplification	WANG Hailing, WANG Jian, YIN Guisheng, QIAO Fu, ZHOU Bo (3167)
Best viewpoints selection based on feature points detection	ZHU Fan, YANG Fenglei (3172)
Image memorability model based on visual saliency entropy and Object Bank feature	CHEN Changyuan, HAN Junwei, HU Xintao, CHENG Gong, GUO Lei (3176)
Mean Shift tracking for video moving objects in combination with scale invariant feature transform and Kalman filter	ZHU Zhiling, RUAN Qiuqi (3179)
Belly shape modeling with new combined invariant moment based on stereo vision	LIU Huan, ZHU Ping, XIAO Rong, TANG Weidong (3183)
Behavior recognition in rehabilitation training based on modified naive Bayes classifier	ZHANG Yi, HUANG Cong, LUO Yuan (3187)
Multi-scale analysis for remote sensing target recognition	BO Shukui, JING Yongju (3190)
Color image registration algorithm based on hypercomplex bispectrum slices	LIAN Wei, ZUO Junyi (3193)
Adaptive weighted mean filtering algorithm based on city block distance	CAO Meng, ZHANG Youhui, WANG Zhiwei, DONG Rui, ZHENG Yingjuan (3197)
Ultrasound image anisotropic diffusion de-speckling method based on Mallat-Zhong discrete wavelet transform wavelet	WU Shibin, CHEN Bo, DONG Wangli, GAO Xiaoming (3201)
Iterative filtering algorithm for color image based on visual sensitivity and improved directional distance	LI Gaoxi, CAO Jun, ZHANG Fuyuan, LI Hua (3204)
Tilt correction algorithm based on aggregation of grating projection sequences	LIU Xu, WU Ling, CHEN Niannian, FAN Yong, DUAN Jingjing, REN Xinyu, XIA Jingjing (3209)
Texture clustering matting algorithm	YANG Wei, GAN Tao, LAN Gang (3213)
Application on cloud visualization based on structured particle model	WANG Chang, XIE Yonghua, YUAN Fuxing (3217)
Simulation of ink diffusion on Xuan paper	FAN Dongyun, LI Haisheng (3220)

## Information security

Network security situational assessment based on link performance analysis	HUANG Zhengxing, SU Yang (3224)
Subjective trust metric based on weighted multi-attribute cloud	FAN Tao, ZHANG Mingqing, LIU Xiaohu, CHENG Jian (3228)
Secret information sharing algorithm based on CL multi-wavelet and combination bit plane for confidential communication	ZHANG Tao, REN Shuai, JU Yongfeng, LING Yao, YANG Zhaozhu (3232)
Identity-based on-the-fly encryption and decryption scheme for controlled documents	JIN Biao, XIONG Jinbo, YAO Zhiqiang, LIU Ximeng (3235)
Identification of encrypted function in malicious software	CAI Jianzhang, WEI Qiang, ZHU Yuefei (3239)
Further study on algebraic structure of RSA algorithm	PEI Donglin, LI Xu (3244)
Automatic verification technique for secret-sharing schemes in applied Pi-calculus	XU Jun (3247)

## Computer software technology

Score distribution method for Web service composition	WANG Wei, FU Xiaodong, XIA Yongying, TIAN Qiang, LI Changzhi (3252)
Detection of array bound overflow by interval set based on Cppcheck	ZHANG Shijin, SHANG Zhaowei (3257)
Test case design algorithm for basic path test	WANG Min, CHEN Shaomin, CHEN Yaguang (3262)
Research on cache model in mobile database	WENG Changling, YANG Qing (3267)

## Typical applications

Logistics service supply chain coordination based on forecast-commitment contract	HE Chan, LIU Wei (3271)
Cyclic network model of optimal allocation for aircraft aviation security resources	ZHU Qidan, LYU Kaidong, LI Xinfei (3276)
Sound localization based on improved interaural time difference of cochlear nucleus model	ZHANG Yi, XING Wuchao, LUO Yuan, HE Chunjiang (3280)
Real-time monitoring and warning system of tunnel strain based on improved principal component analysis method	YANG Tongyao, WANG Bin, LI Chuan, HE Bi, XIONG Xin (3284)
Clutter-map constant false alarm rate detection for foreign object debris on runways	WU Jing, WANG Hong, WANG Xuegang (3288)
Aircraft optimal target aiming control based on Gauss pseudospectral method	CHENG Jianfeng, DONG Xinmin, XUE Jianping, TAN Xueqin (3291)
Applications of gravitational search algorithm in parameters estimation of penicillin fermentation process model	WANG Lei, CHEN Jindong, PAN Feng (3296)
New medical image classification approach based on hypersphere multi-class support vector data description	XIE Guocheng, JIANG Yun, CHEN Na (3300)
Tire preset value inflation or deflation control based on fuzzy and genetic approximation strategy	PAN Xiaobo (3305)
Calculation of submarine distribution probability in call searching submarine for several typical cases	SHAN Zhichao, JU Jianbo, QU Xiaohui, WEN Wei (3309)