



ISSN 1001-3695

CODEN JYYIC7

# 计算机应用研究

Application Research of Computers

第39卷 第4期 2022年4月  
Vol.39 No.4 Apr. 2022



2022

四川省计算机研究院主办  
中国成都 Chengdu, China



- ❖ 英国《科学文摘》(INSPEC) 来源期刊
- ❖ 俄罗斯《文摘杂志》(AJ) 来源期刊
- ❖ 美国《乌利希期刊指南(网络版)》(Ulrichsweb) 收录期刊
- ❖ 2017—2019 年中国国际影响力优秀学术期刊(自然科学与工程)
- ❖ 第二届国家期刊奖百种重点科技期刊
- ❖ 中国科技核心期刊 ❖ 全国中文核心期刊
- ❖ 中国科技论文统计源期刊
- ❖ 中国学术期刊综合评价数据库来源期刊
- ❖ RCCSE 核心学术期刊 ❖ 中国期刊方阵双效期刊

- ❖ 《日本科学技术振兴机构数据库》(JST) 来源期刊
- ❖ 美国《艾博思科学数据库》(EBSCO) 全文来源期刊
- ❖ 美国《剑桥科学文摘(自然科学)》(CSA (NS)) 核心期刊
- ❖ 波兰《哥白尼索引》(IC) 来源期刊
- ❖ 中国科学引文数据库(CSCD) 来源期刊
- ❖ 《中文科技期刊数据库》来源期刊
- ❖ 《中国期刊网》《中国学术期刊(光盘版)》来源期刊
- ❖ 中国精品科技期刊顶尖学术论文(F5000)项目来源期刊
- ❖ 《电子科技文献数据库》来源期刊
- ❖ 《中国工程技术电子信息网》来源期刊

## 计算机应用研究

### Jisuanji Yingyong Yanjiu

#### 第 39 卷 第 4 期 2022 年 4 月

### 目 次

#### 综述评论

- 基于机器学习的 SDN 流量工程研究综述 ..... 郝学余, 吕光宏(961)
- 航空制造知识图谱构建研究综述 ..... 邱 凌, 张安思, 李少波, 张仪宗, 沈明明, 周 鹏(968)
- 基于机器学习的时尚穿搭推荐研究综述 ..... 史英杰, 杨 珂, 王建欣, 杜 方(978)

#### 区块链技术

- 基于区块链和密文属性加密的访问控制方案 ..... 张晓东, 陈韬伟, 余益民, 王会源(986)
- 基于链上数据的区块链欺诈账户检测研究 ..... 周 健, 张 杰, 闫 石(992)

#### 算法研究探讨

- 基于时间加权改进的 LDTW 算法 ..... 朱紫纯, 吕盛坪, 廖鑫婷, 江 城, 罗 勇(998)
- 基于 Lasso-MIDAS 模型的混频时间序列预测研究 ..... 罗 楠, 王 璐, 吴江斌, 夏正兰(1003)
- 基于特征点界标过滤的时间序列模式匹配方法 ..... 刘 畅, 李正欣, 张晓丰, 赵永梅, 郭建胜, 张凤鸣(1008)
- 基于可区分度的连续空间属性约简算法研究 ..... 张 敏, 朱启兵, 黄 敏(1013)
- 类中心极大的多视角极大熵聚类算法 ..... 丁健宇, 祁云嵩, 赵呈祥(1019)
- 基于动态二分网络表示学习的推荐方法 ..... 张阳阳, 陈可佳, 张 杰(1024)
- 基于双向映射学习的多标签分类算法 ..... 王庆鹏, 高清维, 卢一相, 孙 冬(1030)
- 基于结构性质保持和相关性学习的多标记分类算法 ..... 张其亮, 娄恒瑞, 居殿春(1037)
- NEMTF: 基于多维度文本特征的新闻网页信息提取方法 ..... 翁彬月, 秦永彬, 黄瑞章, 任丽娜, 田悦霖(1043)
- MASGC: 融合特定屏蔽机制的简单图卷积情感分析模型 ..... 姜宇桐, 钱雪忠, 宋 威(1049)
- 考虑群组结构的在线社交网络竞争性舆情信息传播模型研究 ..... 侯艳辉, 孟 帆, 王家坤, 管 敏, 张 昊(1054)
- 融合高低层语义信息的自然语言句子匹配方法 ..... 姜克鑫, 赵亚慧, 崔荣一(1060)
- 句子级状态下 LSTM 对谣言鉴别的研究 ..... 庞源焜, 张宇山(1064)
- 基于自编码神经网络的半监督联邦学习模型 ..... 侯坤池, 王 楠, 张可佳, 宋 蕾, 袁 琪, 苗凤娟(1071)
- 基于层级集成的个性化空间音频技术 ..... 卢金燕, 戚肖克(1075)
- 融合链接预测相似度矩阵的属性网络嵌入算法 ..... 伍杰华, 高学勤, 王 涛(1080)
- 融合多策略的改进麻雀搜索算法 ..... 张晓萌, 张艳珠, 刘 禄, 张 硕, 熊夫睿(1086)
- 随机扰动不同种群变异策略的多目标进化算法 ..... 郝秦霞, 汪连连(1092)

基于改进北极熊算法的制造云服务组合优化 .....	廖文利,魏 乐,王 宇(1099)
基于 FT_SSIM 和 ICAGA_CNN 在小样本场景下雷达动作识别方法研究 .....	蒋留兵,潘 波,吴岷洋,朱柏青,车 俐(1105)
基于人际关系的传染病传播仿真模型研究 .....	张亚楠,龙 华,邵玉斌,杜庆治,陈腾飞,宋肖肖(1111)
结合分辨矩阵与蚁群优化算法改进的特征选择方法 .....	杨震宇,叶 军,季雨瑄,敖家欣,王 磊(1118)
多策略的郊狼优化算法 .....	张新明,杨方圆,刘国奇(1124)
基于综合几何关系稀疏自注意力机制的图像标注方法研究 .....	李 艳,金小峰(1132)

#### 系统应用开发

基于特征融合方法的轻微认知衰退静息态脑电数据自动检测技术研究 .....	段子敬,赵冰蕾,李春波,郭 薇(1137)
基于随机森林算法的谷物粉分类及硬件加速 .....	徐雷钧,项厚友,倪利华(1143)
基于变长基因型遗传算法的多供应点应急物资调度优化 .....	吴 凡,杨 冰,洪 思(1148)
考虑销售方式和物流服务策略的运营模式研究 .....	赵亚男,贾 蔚(1155)
基于深度学习的心律模拟算法及其应用 .....	龙 坡,陈 浩,何 晶,何 堃(1162)

#### 网络与通信技术

改进平衡优化器算法的 WSN 覆盖优化 .....	李守玉,何 庆,陈 俊(1168)
基于时空加权目标函数的无线传感网簇协议 .....	赵远亮,王 涛,李 平,吴雅婷,孙彦赞,王 瑞(1173)
无线局域网多机器人系统轮询 MAC 协议研究 .....	杨志军,郑皓元,丁洪伟(1178)

#### 信息安全技术

基于报文哈希链的签名认证方法 .....	韩明轩,蒋文保,郭阳楠(1183)
基于 OT 的多方匿名身份查询协议 .....	张爱雯,李祯祯,丁海洋,张珍珍,李子臣(1190)
Cybertwin 中的格上生物特征认证密钥交换协议 .....	汤永利,殷明辉,赵宗渠,郭小杰,邓大智(1195)
一种面向指纹探测欺骗的智能博弈对抗机制 .....	李少辉,张国敏,宋丽华,王秀磊(1202)
面向航空差旅消费的可监管交易隐私保护方案 .....	周星光,刘 一(1207)
可实现丰富认证策略的两方属性基会话密钥协商协议 .....	胡声洲,钟婷婷,何 华,王幸福(1213)
面向电力场景的双通道图像拼接篡改检测模型 .....	刘 正,田秀霞,白万荣(1218)
基于生物特征识别的门限身份认证方案 .....	刘 尧,郭 帅,杨晓元(1224)
面向云服务的轻量级匿名订阅系统 .....	柳 欣,张 波,张 斌,孙世文(1228)

#### 图形图像技术

多层特征融合和并行自注意力的孪生网络目标跟踪算法 .....	束 平,许克应,鲍 华(1237)
基于影响函数的跨领域小样本的行人重识别方法 .....	戴锡笠,吴 杨,龚海刚,刘 明(1242)
轻量级多信息图卷积神经网络动作识别方法 .....	井 望,李汪根,沈公仆,范宝珠(1247)
颜色恢复和边缘保持的低照度图像超分辨率重建方法 .....	郭 林,陈亮亮,程德强,江 曼,寇旗旗,钱建生(1253)
基于卷积特征聚合的细粒度图像检索方法 .....	苟光磊,朱东旭,杨 雨(1259)
基于多级上下文引导的实时语义分割网络 .....	文 凯,熊俊臣,邹 伟,唐伟伟(1265)
基于对抗学习的医学图像分割领域自适应研究 .....	王绍帆,马 驰,胡 辉,路生亮(1270)
融合多路特征和注意力机制的强化学习关键帧提取算法 .....	曹春萍,苑凯歌(1274)

#### 信息集萃

下期要目 .....	(1206)
------------	--------

期刊基本参数:CN51-1196/TP \* 1984 \* m \* A4 \* 320 \* zh \* P \* ¥50.00 \* 3840 \* 54 \* 2022-04 \* n

本期责任编辑 黄 莉,何 俐

# Application Research of Computers

## Vol. 39 No. 4 Apr. 2022

### Contents

#### Survey

- Survey of SDN traffic engineering research based on machine learning ..... Hao Xueyu, Lyu Guanghong(961)
- Survey on building knowledge graphs for aerospace manufacturing ..... Qiu Ling, Zhang Ansi, Li Shaobo, *et al.* (968)
- Survey on fashion outfit recommendation research based on machine learning ..... Shi Yingjie, Yang Ke, Wang Jianxin, *et al.* (978)

#### Technology of Blockchain

- Access control scheme based on blockchain and CPABE ..... Zhang Xiaodong, Chen Taowei, Yu Yimin, *et al.* (986)
- Research on blockchain fraud account detection based on data on chain ..... Zhou Jian, Zhang Jie, Yan Shi(992)

#### Algorithm Research & Explore

- Improved LDTW algorithm based on time-weighting ..... Zhu Zichun, Lyu Shengping, Liao Xinting, *et al.* (998)
- Research on mixed-frequency time series prediction based on Lasso-MIDAS model ..... Luo Nan, Wang Lu, Wu Jiangbin, *et al.* (1003)
- Time series pattern matching method based on feature point landmark filtering ..... Liu Chang, Li Zhengxin, Zhang Xiaofeng, *et al.* (1008)
- Research on continuous space attribute reduction algorithm based on discrimination ..... Zhang Min, Zhu Qibing, Huang Min(1013)
- Multi-view maximum entropy clustering algorithm with center distance maximization ..... Ding Jianyu, Qi Yunsong, Zhao Chengxiang(1019)
- Recommendation method based on dynamic bipartite network representation learning ..... Zhang Yangyang, Chen Kejia, Zhang Jie(1024)
- Multi-label classification algorithm based on bidirectional mapping learning ..... Wang Qingpeng, Gao Qingwei, Lu Yixiang, *et al.* (1030)
- Multi-label classification with structural property preserving and correlation learning ..... Zhang Qiliang, Lou Hengrui, Ju Dianchun(1037)
- NEMTF:method of news Web content extraction based on multi-dimensional text features ..... Weng Binyue, Qin Yongbin, Huang Ruizhang, *et al.* (1043)
- MASGC: simple graph convolutional emotion analysis model with specific masking ..... Jiang Yutong, Qian Xuezhong, Song Wei(1049)
- Research on competitive public opinion information dissemination model in online social networks considering group structure .....  
..... Hou Yanhui, Meng Fan, Wang Jiakun, *et al.* (1054)
- Natural language sentence matching method fusion of high-level and low-level semantic information ..... Jiang Kexin, Zhao Yahui, Cui Rongyi(1060)
- Rumor identification research based on sentence-state LSTM ..... Pang Yuankun, Zhang Yushan(1064)
- Semi-supervised federated learning model based on AutoEncoder neural network ..... Hou Kunchi, Wang Nan, Zhang Kejia, *et al.* (1071)
- Hierarchical integration-based individualized spatial audio technique ..... Lu Jinyan, Qi Xiaoke(1075)
- Preserving link prediction similarity matrix for attribute network embedding ..... Wu Jiehua, Gao Xueqin, Wang Tao(1080)
- Improved sparrow search algorithm fused with multiple strategies ..... Zhang Xiaomeng, Zhang Yanzhu, Liu Lu, *et al.* (1086)
- Multi-objective evolutionary algorithm with random disturbance of different population mutation strategies ..... Hao Qinxia, Wang Lianlian(1092)
- Manufacturing cloud service composition optimization based on modified polar bear algorithm ..... Liao Wenli, Wei Le, Wang Yu(1099)
- Research on radar action recognition method based on FT\_SSIM and ICAGA\_CNN in small sample scenes .....  
..... Jiang Liubing, Pan Bo, Wu Minyang, *et al.* (1105)
- Research on simulation model of infectious disease transmission based on interpersonal relationship ... Zhang Yanan, Long Hua, Shao Yubin, *et al.* (1111)

Improved feature selection method combining discernibility matrix and ant colony optimization algorithm ... Yang Zhenyu, Ye Jun, Ji Yuxuan, *et al.* (1118)

Multi-strategy coyote optimization algorithm ..... Zhang Xinming, Yang Fangyuan, Liu Guoqi (1124)

Research on image captioning method based on sparse self-attention mechanism of integrated geometric relationship ..... Li Yan, Jin Xiaofeng (1132)

**System Development & Application**

Automatic detection technology of resting state EEG data for mild cognitive decline based on convolutional neural network ..... Duan Zijiang, Zhao Binglei, Li Chunbo, *et al.* (1137)

Grain flour classification and hardware acceleration based on random forest algorithm ..... Xu Leijun, Xiang Houyou, Ni Lihua (1143)

Scheduling optimization of emergency supplies with multi-supply points based on variable length genotype genetic algorithm ..... Wu Fan, Yang Bing, Hong Si (1148)

Research on operation mode considering sales method and logistics service strategy ..... Zhao Yanan, Jia Wei (1155)

Algorithm for simulating cardiac rhythm based on deep learning and its application ..... Long Po, Chen Hao, He Jing, *et al.* (1162)

**Technology of Network & Communication**

Improved equilibrium optimizer algorithm for WSN coverage optimization ..... Li Shouyu, He Qing, Chen Jun (1168)

Clustering protocol for wireless sensor network based on spatio-temporal weighted objective function ..... Zhao Yuanliang, Wang Tao, Li Ping, *et al.* (1173)

Research on polling MAC protocol for multi-robot system in WLAN ..... Yang Zhijun, Zheng Haoyuan, Ding Hongwei (1178)

**Technology of Information Security**

Signature and authentication method based on message hash chain ..... Han Mingxuan, Jiang Wenbao, Guo Yangnan (1183)

Multi-party anonymous identity query protocol based on OT ..... Zhang Ailuan, Li Zhenzhen, Ding Haiyang, *et al.* (1190)

Biometric authentication key exchange protocol from lattice on Cybertwin network ..... Tang Yongli, Yin Minghui, Zhao Zongqu, *et al.* (1195)

Intelligent game mechanism for fingerprint detection deception ..... Li Shaohui, Zhang Guomin, Song Lihua, *et al.* (1202)

Supervisable transaction privacy-preservation scheme for air travel consumption ..... Zhou Xingguang, Liu Yi (1207)

Two-party attribute-based session key agreement protocol with expressive authentication policies ..... Hu Shengzhou, Zhong Tingting, He Hua, *et al.* (1213)

Dual-channel image splicing forgery detection model of electric power site ..... Liu Zheng, Tian Xiuxia, Bai Wanrong (1218)

Threshold identity authentication scheme based on biometrics ..... Liu Yao, Guo Shuai, Yang Xiaoyuan (1224)

Lightweight anonymous subscription system for cloud services ..... Liu Xin, Zhang Bo, Zhang Bin, *et al.* (1228)

**Technology of Graphic & Image**

Multi-layer feature fusion and parallel self-attention Siamese networks for visual tracking ..... Shu Ping, Xu Keying, Bao Hua (1237)

Influence function based method on cross-domain few-shot person Re-ID problem ..... Dai Xili, Wu Yang, Gong Haigang, *et al.* (1242)

Lightweight multi-information graph convolution neural network action recognition method ..... Jing Wang, Li Wanggen, Shen Gongpu, *et al.* (1247)

Super resolution of low illumination image based on color restoration and edge preserving ..... Guo Lin, Chen Liangliang, Cheng Deqiang, *et al.* (1253)

Fine-grained image retrieval method based on convolution feature aggregation ..... Gou Guanglei, Zhu Dongxu, Yang Yu (1259)

Real-time semantic segmentation network based on multi-level context guidance ..... Wen Kai, Xiong Junchen, Zou Wei, *et al.* (1265)

Research on domain adaptation medical image segmentation based on adversarial learning ..... Wang Shaofan, Ma Chi, Hu Hui, *et al.* (1270)

Key frame extraction algorithm of reinforcement learning based on multi-channel feature and attention mechanism ..... Cao Chunping, Yuan Kaige (1274)

Responsible Editor Huang Li, He Li