



ISSN 1000-3428
CN 31-1289/TP
CODEN JISGEV

计算机工程 (月刊)

计算机工程

Computer Engineering

www.ecice06.com

第48卷 第6期 2022年6月15日

Vol.48 No.6 15 June 2022

2022 6

■北大中文核心期刊 ■中科院CSCD来源期刊 ■中国科技核心期刊 ■RCCSE中国核心学术期刊 ■Scopus数据库收录期刊

第48卷 第6期 2022年6月15日

www.ecice06.com



华东计算技术研究所 主办
上海市计算机学会

计算机工程 (月刊)

Jisuanji Gongcheng

第 48 卷 第 6 期 2022 年 6 月 15 日

目 次

• 区块链理论与技术 •

- 区块链分片技术综述..... 黄华威,孔 伟,彭肖文,郑子彬 (1)
- 基于有向无环图的区块链技术综述 王劲松,杨唯正,赵泽宁,魏佳佳 (11)
- 区块链:元宇宙的核心基础设施 李 鸣,张 亮,宋文鹏,吴美玉 (24)
- 基于区块链的公平性联邦学习模型 陈乃月,金 一,李浥东,蔡露鑫,魏圆梦 (33)
- 基于信誉值投票与随机数选举的 PBFT 共识算法 陈润宇,王伦文,朱然刚 (42)
- 基于综合选举的 DPoS 共识算法 王 兵,李辉灵,牛新征 (50)

• 人工智能与模式识别 •

- 基于概率矩阵分解的不完整数据集特征选择方法..... 范林歌,武欣嵘,童 玮,曾维军 (57)
- 基于邻域聚合的实体对齐方法 谭元珍,李晓楠,李冠宇 (65)
- 基于标签相关性的 K 近邻多标签学习..... 钱 龙,赵 静,韩京宇,毛 毅 (73)
- 关键词最优路径查询的分段拓展算法 刘蒙蒙,牛保宁,杨 茸 (79)
- 基于 ALBERT-BGRU-CRF 的中文命名实体识别方法 李军怀,陈苗苗,王怀军,崔颖安,张爱华 (89)
- 室内场景下应用拓扑结构的高效路径规划算法 李冠达,金 兢,王 凡,夏营威,杨学志 (95)
- 一种鲁棒的半监督联邦学习系统 王树芬,张 哲,马士尧,陈俞强,伍 一 (107)
- 结合特征扰动与分配策略的集成辅助多目标优化算法 刘子怡,王宇嘉,孙福祿,贾 欣,聂方鑫 (115)

• 网络空间安全 •

- 基于中值预测的四轮嵌入可逆信息隐藏算法 任 方,薛斐元,姚雪梅 (124)
- 基于群签名与属性加密的区块链可监管隐私保护方案 李 莉,杜慧娜,李 涛 (132)
- 针对重用掩码 AES 算法的随机明文碰撞攻击 赵秉宇,王柳生,张美玲,郑 东 (139)

基于GSA与DE优化混合核ELM的网络异常检测模型 生 龙,袁丽娜,武南南,姬少培(146)

面向无人驾驶地图更新的安全信任管理方案..... 杜 田,李 欣,赖成喆,郑 东(154)

• 先进计算与数据处理 •

面向多表连接查询优化的基数估计方法..... 钱文渊,荆一楠,王晓阳,吴振环(167)

基于最大最小距离的多中心数据综合增强方法 曹瑞阳,郭佑民,牛满宇(174)

大规模图例的最大团问题算法分析..... 王晓峰,于 卓,赵 健,曹泽轩(182)

面向FT-M7002的Sobel边缘检测算法优化实现 范明亮,郭子涵,柴晓楠,商建东(193)

拟单层覆盖粗糙集中近似集的增量更新算法 吴正江,张亚宁,张 真,梅秋雨,杨 天(200)

• 图形图像处理 •

一种用于图像去雾的改进生成对抗网络..... 丁泳钧,黄 山(207)

无耦合PCNN频域特性分析 邓翔宇,吕亚辉,陈 岩(213)

基于衰减补偿与直方图拉伸的水下图像增强算法 李 莉,王新强,银 珊(222)

基于深度可分离卷积的轻量级图像超分辨率重建..... 柳 聪,屈 丹,司念文,魏紫薇(228)

适用于非合作目标捕获的轻量级位姿估计网络 蒋 明,陈 雨,周青华,袁 媛,何世琼(235)

基于亲疏度矩阵的点云置换不变特征提取方法 许嘉麟,姚 双,张蕊华,许 浩,沈 洋(243)

基于密集连接与特征增强的遥感图像检测..... 王道累,杜文斌,刘易腾,张天宇,孙嘉珺,李明山(251)

面向图像目标识别的轻量化卷积神经网络..... 史宝岱,张 秦,李 瑶,李宇环(257)

结合 $l_{1/2}$ 范数与显著性约束的背景减除 张国庭,陈利霞,周泽锋(263)

• 开发研究与工程应用 •

基于SE-CNN的人体摔倒检测方法 杨志勇,王俊杰,金 磊(270)

基于主题情感联合分析的游客画像研究 李 琴,李少波,胡 杰(278)

面向法律文书的分段式摘要模型..... 王 刚,孙媛媛,陈彦光,林鸿飞(288)

融合自适应感受野与多支路特征的鞋型识别算法 张家钧,唐云祁,杨智雄(295)

基于条件对抗自动编码器的跨年龄人脸合成..... 程志康,孙 锐,孙琦景,张旭东(304)

融合数据增强与半监督学习的药物不良反应检测 余朝阳,严 馨,徐广义,陈 玮,邓忠莹(314)

Computer Engineering (Monthly)

Vol.48 No.6 15 June 2022

Contents

• Blockchain Theory and Technology •

- Survey on Blockchain Sharding Technology HUANG Huawei, KONG Wei, PENG Xiaowen, ZHENG Zibin (1)
- Survey of Directed Acyclic Graph Based Blockchain Technology
..... WANG Jinsong, YANG Weizheng, ZHAO Zening, WEI Jiajia (11)
- Blockchain: Core Metaverse Infrastructure LI Ming, ZHANG Liang, SONG Wenpeng, WU Meiyu (24)
- Federated Learning Model with Fairness Based on Blockchain CHEN Naiyue, JIN Yi, LI Yidong, CAI Luxin, WEI Yuanmeng (33)
- PBFT Consensus Algorithm Based on Reputation Value Voting and Random Number Election
..... CHEN Runyu, WANG Lunwen, ZHU Rangang (42)
- DPoS Consensus Algorithm Based on Comprehensive Election WANG Bing, LI Huiling, NIU Xinzhen (50)

• Artificial Intelligence and Pattern Recognition •

- Feature Selection Method for Incomplete Data Sets Based on Probability Matrix Decomposition
..... FAN Linge, WU Xinrong, TONG Wei, ZENG Weijun (57)
- Entity Alignment Method Based on Neighborhood Aggregation TAN Yuanzhen, LI Xiaonan, LI Guanyu (65)
- K-Nearest Neighbor Multi-Label Learning Based on Label Correlation QIAN Long, ZHAO Jing, HAN Jingyu, MAO Yi (73)
- Segmentation Expansion Algorithm for Keyword-Aware Optimal Route Query LIU Mengmeng, NIU Baoning, YANG Rong (79)
- Chinese Named Entity Recognition Method Based on ALBERT-BGRU-CRF
..... LI Junhuai, CHEN Miaomiao, WANG Huaijun, CUI Ying'an, ZHANG Aihua (89)
- Efficient Path Planning Algorithm Using Topology for Indoor Environment
..... LI Guanda, JIN Jing, WANG Fan, XIA Yingwei, YANG Xuezhi (95)
- A Robust Semi-Supervised Federated Learning System WANG Shufen, ZHANG Zhe, MA Shiyao, CHEN Yuqiang, WU Yi (107)
- Ensemble-Assisted Multi-Objective Optimization Algorithm Combining Feature Perturbation and Allocation Strategy
..... LIU Ziyi, WANG Yujia, SUN Fulu, JIA Xin, NIE Fangxin (115)

• Cyberspace Security •

- Four-round Embedding Reversible Information Hiding Algorithm Based on Median Prediction
..... REN Fang, XUE Feiyuan, YAO Xuemei (124)
- Blockchain Supervisable Privacy Protection Scheme Based on Group Signature and Attribute Encryption LI Li, DU Huina, LI Tao (132)
- Random Plaintext Collision Attack Against AES Algorithm with Reused Masks
..... ZHAO Bingyu, WANG Liusheng, ZHANG Meiling, ZHENG Dong (139)
- Network Anomaly Detection Model Based on GSA and DE Optimizing Hybrid Kernel ELM
..... SHENG Long, YUAN Lina, WU Nannan, JI Shaopei (146)
- Secure Trust Management Scheme for Autonomous Driving Map Updating DU Tian, LI Xin, LAI Chengzhe, ZHENG Dong (154)

• **Advanced Computing and Data Processing** •

Cardinality Estimation Method for Multitable JOIN Query Optimization QIAN Wenyuan, JING Yinan, WANG Xiaoyang, WU Zhenhuan (167)

Integrated Enhancement Method for Multi-Center Data Based on Max-Min Distance..... CAO Ruiyang, GUO Youmin, NIU Manyu (174)

Algorithm Analysis for Solving Maximum Clique Problems of Large-scale Graphs WANG Xiaofeng, YU Zhuo, ZHAO Jian, CAO Zexuan (182)

Optimized Realization of Sobel Edge Detection Algorithm for FT-M7002 FAN Mingliang, GUO Zihan, CHAI Xiaonan, SHANG Jiandong (193)

Incremental Updating Algorithm for Approximation Sets on Semi-Monolayer Cover Rough Sets WU Zhengjiang, ZHANG Yaning, ZHANG Zhen, MEI Qiuyu, YANG Tian (200)

• **Graphics and Image Processing** •

An Improved Generative Adversarial Network for Image Dehazing DING Yongjun, HUANG Shan (207)

Frequency Domain Characteristics Analysis of Non-Coupled PCNN DENG Xiangyu, LÜ Yahui, CHEN Yan (213)

Underwater Image Enhancement Algorithm Based on Attenuation Compensation and Histogram Stretching LI Li, WANG Xinqiang, YIN Shan (222)

Lightweight Image Super-Resolution Reconstruction Based on Depthwise Separable Convolution LIU Cong, QU Dan, SI Nianwen, WEI Ziwei (228)

Lightweight Pose Estimation Network for Non-Cooperative Target Acquisition JIANG Ming, CHEN Yu, ZHOU Qinghua, YUAN Yuan, HE Shiqiong (235)

Permutation Invariant Feature Extraction Method Based on Affinity Matrix of Point Cloud XU Jialin, YAO Shuang, ZHANG Ruihua, XU Hao, SHEN Yang (243)

Remote Sensing Images Detection Based on Dense Connection and Feature Enhancement WANG Daolei, DU Wenbin, LIU Yiteng, ZHANG Tianyu, SUN Jiajun, LI Mingshan (251)

Lightweight Convolution Neural Network for Image Target Recognition SHI Baodai, ZHANG Qin, LI Yao, LI Yuhuan (257)

Background Subtraction Combining l_{12} Norm and Saliency Constraint..... ZHANG Guoting, CHEN Lixia, ZHOU Zefeng (263)

• **Development Research and Engineering Application** •

Human Fall Detection Method Based on SE-CNN YANG Zhiyong, WANG Junjie, JIN Lei (270)

Research on Tourist Portrait Based on Joint Topic-Sentiment Analysis LI Qin, LI Shaobo, HU Jie (278)

Segmented Summarization Model for Legal Documents WANG Gang, SUN Yuanyuan, CHEN Yanguang, LIN Hongfei (288)

Shoe Type Recognition Algorithm with Adaptive Receptive Field and Multi-Branch Feature..... ZHANG Jiajun, TANG Yunqi, YANG Zhixiong (295)

Cross-age Face Synthesis Based on Conditional Adversarial Autoencoder CHENG Zhikang, SUN Rui, SUN Qijing, ZHANG Xudong (304)

Adverse Drug Reaction Detection Combined with Data Augmentation and Semi-supervised Learning SHE Zhaoyang, YAN Xin, XU Guangyi, CHEN Wei, DENG Zhongying (314)