



ISSN 1673-9418

CODEN JKYTAS

JOURNAL OF FRONTIERS OF COMPUTER SCIENCE & TECHNOLOGY

计算机科学探索

第13卷 第6期 / Vol.13 No.6 Jun. 2019

—月刊—



华北计算技术研究所 主办
科学出版社 出版

计算机科学与探索

Jisuanji Kexue yu Tansuo

(月刊)

2007年创刊

第13卷 第6期 总第129期

2019年6月

主管单位

中国电子科技集团公司

主办单位

华北计算技术研究所

理事长 刘学林

总经理 谭继红

主编 周志华

总编辑 鞠玉兰

执行总编辑 丁宇萍

副总编辑 袁璟

编辑

《计算机科学与探索》编辑部

地址:北京市海淀区北四环中路211号

北京619信箱26分箱

邮编:100083

电话:(010)89056056

E-mail:fcest@vip.163.com

http://www.ceaj.org



出版

北京《计算机工程与应用》期刊有限公司

科学出版社

印刷

北京宝昌彩色印刷有限公司

国内总发行

中国邮政集团公司北京市报刊发行局

订阅处

全国各地邮局(82-560)

国外总发行

中国国际图书贸易集团有限公司

目次

学术研究

- 共享经济预约模式下资源分配的拍卖机制设计
……………张静,张骥先,李伟东,刘旭东,张学杰 (901)
- 采用CNN和Bidirectional GRU的时间序列分类研究
……………张国豪,刘波 (916)

数据库技术

- GPU无锁跳步哈希表
……………张娟,孙建伶 (928)
- NUMA架构下数据热度的内存数据库日志恢复技术
……………吴刚,
阿卜杜热西提·热合曼,李梁,乔百友,韩东红 (941)

系统软件与软件工程

- 扩展SysML支持需求追踪模型的自动生成
……………邓刘梦,沈国华,黄志球,王飞,葛晓瑜 (950)
- 基于状态图测试的迁移路径生成方法
……………张毅伟,贲可荣 (961)

人工智能

- BGRU:中文文本情感分析的新方法
……………曹宇,李天瑞,贾真,殷成凤 (973)
- 基于Convolutional-LSTM的蛋白质亚细胞定位研究
……………王春宇,徐珊珊,郭茂祖,车凯,刘晓燕 (982)
- 改进的粒子群算法优化的特征选择方法
……………李炜,巢秀琴 (990)
- 融合生成对抗网络和朴素贝叶斯皮肤病诊断方法
……………商显震,
韩萌,孙毓忠,孙宇宁,陈旭,胡满满,梅御东 (1005)
- Takagi-Sugeno模糊系统双正则联合稀疏建模新方法
……………林得富,王骏,张嘉旭,应文豪,王士同 (1016)

图形图像

- 行人检测的深度稀疏自编码网络
……………崔鹏,赵莎莎,范志旭 (1027)
- 核协同表示下的多特征融合场景识别
……………宗海燕,吴秦,王田辰,张淮 (1038)
- 多尺度卷积特征融合的SSD目标检测算法
……………陈幻杰,
王琦琦,杨国威,韩佳林,尹成娟,陈隽,王以忠 (1049)

理论与算法

- 区间值序信息系统中差别信息树的属性约简
……………杨蕾,张晓燕,徐伟华 (1062)
- 基于优势关系的程度粗糙直觉模糊集模型研究
……………薛占熬,吕敏杰,韩丹杰,张敏 (1070)

Contents

Science Researches

- 901 Auction Mechanism Design for Resources Allocation in Reservation Mode of Sharing Economy
.....ZHANG Jing, ZHANG Jixian, LI Weidong, et al
- 916 Research on Time Series Classification Using CNN and Bidirectional GRUZHANG Guohao, LIU Bo

Database Technology

- 928 GPU Lock-Free Hopscotch Hash Table
.....ZHANG Juan, SUN Jianling
- 941 Main-Memory Database Log Recovery Techniques with Data Popularity in NUMA Architecture
.....WU Gang, Abudurexiti REHEMAN, LI Liang, et al

System Software and Software Engineering

- 950 Extended SysML for Supporting Requirements Trace Model Automatic Generation
.....DENG Liumeng, SHEN Guohua, HUANG Zhiqiu, et al
- 961 Transition Path Generation Method Based on State Diagram Test
.....ZHANG Yiwei, BEN Kerong

Artificial Intelligence

- 973 BGRU: New Method of Chinese Text Sentiment Analysis
.....CAO Yu, LI Tianrui, JIA Zhen, et al
- 982 Study of Protein Subcellular Localization Based on Convolutional-LSTMWANG Chunyu, XU Shanshan, GUO Maozu, et al
- 990 Improved Particle Swarm Optimization Method for Feature SelectionLI Wei, CHAO Xiuqin
- 1005 Skin Diseases Diagnosis Method Based on Generative Adversarial Networks and Naive Bayes
.....SHANG Xianzhen, HAN Meng, SUN Yuzhong, et al
- 1016 Novel Takagi-Sugeno Fuzzy System Modeling Method via Joint Sparse Learning Using Two Regularizations
.....LIN Defu, WANG Jun, ZHANG Jiayu, et al

Graphics and Image

- 1027 Deep Sparse Auto-Encoder Network for Pedestrian Detection
.....CUI Peng, ZHAO Shasha, FAN Zhixu
- 1038 Scene Classification Based on Multi-Feature Fusion and Kernel Collaborative Representation
.....ZONG Haiyan, WU Qin, WANG Tianchen, et al
- 1049 SSD Object Detection Algorithm with Multi-Scale Convolution Feature Fusion
.....CHEN Huanjie, WANG Qiqi, YANG Guowei, et al

Theory and Algorithm

- 1062 Attribute Reduction of Discernibility Information Tree in Interval-Valued Ordered Information System
.....YANG Lei, ZHANG Xiaoyan, XU Weihua
- 1070 Research on Graded Rough Intuitionistic Fuzzy Set Model Based on Dominance Relation
.....XUE Zhan'ao, LV Minjie, HAN Danjie, et al

Journal of Frontiers of Computer Science and Technology

(Monthly)

Started in 2007

Vol.13 No.6 Sum No.129 Jun. 2019

Superintended by

China Electronics Technology Group Corporation

Sponsored by

North China Institute of Computing Technology

President of Council: LIU Xuelin

General Manager: TAN Jihong

Editor-in-Chief: ZHOU Zhihua

Chief Editor: JU Yulan

Executive Chief Editor: DING Yuping

Associate Chief Editor: YUAN Jing

Edited by

Editorial Department of *Journal of Frontiers of
Computer Science and Technology*

Mail Address: No.26, P.O.Box 619,

Beijing 100083, P.R.China

Tel: (8610) 89056056

E-mail: fcst@vip.163.com

http://www.ceaj.org

Published by

Journal of Computer Engineering and Applications

Beijing Co., Ltd.

Science Press

Printed by

Beijing Baochang Color Printing Co., Ltd.

Distributed by

Beijing Bureau for Distribution of

Newspapers and Journals

Subscribed by

All Local Post Offices in China

Foreign Distributed by

China International Book Trading Corporation