



ISSN 1673-9418

CODEN JKYTA8

JOURNAL OF FRONTIERS OF COMPUTER SCIENCE & TECHNOLOGY

# 计算机科学探索

第13卷 第9期 / Vol.13 No.9 Sep. 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9期 总第132期

2019年9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

- 动态社会网络数据发布隐私保护方法  
.....董祥祥,高 昂,梁 英,毕晓迪 (1441)
- 元路径选择和矩阵分解的跨社交网络链路预测  
.....王 瑶,寇 月,申德荣,聂铁铮,于 戈 (1459)
- 移动情景和用户轨迹感知的众包服务推荐  
.....姜 芸,何 伟,崔立真,杨 倩,刘 磊 (1471)

## 数据库技术

- 中文关键词自动提取方法研究  
.....荣垂田,李银银,王 琰 (1481)
- 虚拟化模型驱动的分分布式数据湖构建方法研究  
.....谭景信,刘玉龙,李慧娟 (1493)

## 网络与信息安全

- 面向子图匹配的社会网络隐私保护方法  
.....张晓琳,袁昊晨,李卓麟,张换香,刘 娇 (1504)
- 多路反馈型两级交换结构  
.....申志军,陶东华,高 静 (1516)
- 车联网蠕虫的随机传播模型  
...周翰逊,杨 阳,冯润泽,熊俊坤,万 明,郭 薇 (1524)

## 人工智能与模式识别

- 基于长时信号功率谱变化的语音端点检测  
.....张 涛,刘 阳,任相赢 (1534)
- 大规模动态网络的相似性度量方法研究  
.....王 佳,武志昊,赵苡积,林友芳 (1543)
- 具有抗噪性能适用高维数据的增量式聚类算法  
.....邵俊健,王士同 (1553)
- 微生物动力学优化算法  
.....陆秋琴,黄光球 (1567)
- 无线城市社团发现的研究  
——在 Spark 上利用改进关联规则实现社团发现的算法  
.....王永贵,徐山珊,肖成龙 (1582)
- 改进的卷积神经网络在医学图像分割上的应用  
.....刘 辰,肖志勇,杜年茂 (1593)

## 理论与算法

- 连续负梯度方向获得共轭方向的六寻优化方法  
.....尹晓丽,孙 凤,李春明 (1604)
- 三维单粒子态的双向受控隐形传态  
.....彭家寅 (1613)

# Contents

## Science Researches

- 1441 Method of Privacy Preserving in Dynamic Social Network Data Publication  
.....DONG Xiangxiang, GAO Ang, LIANG Ying, et al
- 1459 Link Prediction Using Meta-Path Selection and Matrix Factorization Across Social Networks  
.....WANG Yao, KOU Yue, SHEN Derong, et al
- 1471 Mobile Context and User Trajectory Awareness Crowdsourcing Service Recommendation  
.....JIANG Yun, HE Wei, CUI Lizhen, et al

## Database Technology

- 1481 Research on Technologies of Chinese Key-Phrase Automatic Extraction  
.....RONG Chuitian, LI Yinyin, WANG Yan
- 1493 Research on Construction Method of Distributed Data Lake Driven by Virtualization Model  
.....TAN Jingxin, LIU Yulong, LI Huijuan

## Network and Information Security

- 1504 Subgraph Matching Oriented Privacy Preserving Method for Social Network  
.....ZHANG Xiaolin, YUAN Haochen, LI Zhuolin, et al
- 1516 Multichannel-Feedback-Based Two-Stage Switch Architecture  
.....SHEN Zhijun, TAO Donghua, GAO Jing
- 1524 Stochastic Propagation Model of Worms in Internet of Vehicles  
.....ZHOU Hanxun, YANG Yang, FENG Runze, et al

## Artificial Intelligence and Pattern Recognition

- 1534 Voice Activity Detection Based on Long-Term Power Spectrum Variability  
.....ZHANG Tao, LIU Yang, REN Xiangying
- 1543 Research on Similarity Measurement Method for Large-Scale Dynamic Networks  
.....WANG Jia, WU Zhihao, ZHAO Yiji, et al
- 1553 Incremental Clustering Algorithm with Anti-Noise Performance and Suitable for High Dimensional Data  
.....SHAO Junjian, WANG Shitong
- 1567 Microbial Dynamics Optimization Algorithm  
.....LU Qiuqin, HUANG Guangqiu
- 1582 Research on Wireless City Community Detection: Using Improved Association Rules to Achieve Community Detection Algorithm on Spark  
.....WANG Yonggui, XU Shanshan, XIAO Chenglong
- 1593 Application of Improved Convolutional Neural Network in Medical Image Segmentation  
.....LIU Chen, XIAO Zhiyong, DU Nianmao

## Theory and Algorithm

- 1604 Six Search Optimization Method on Obtaining Conjugate Direction After Continuous Negative Gradient Directions  
.....YIN Xiaoli, SUN Feng, LI Chunming
- 1613 Bidirectional Controlled Teleportation of Three-Dimensional Single-Particle States  
.....PENG Jiayin

# Journal of Frontiers of Computer Science and Technology

(Monthly)

Started in 2007

Vol.13 No.9 Sum No.132 Sep. 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