

全国中文核心期刊（2004版）
工信部2009-2010年度科技期刊规范化优秀奖
《中国学术期刊影响因子年报》统计源期刊

通信技术

Communications Technology

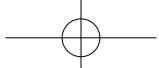
2020 2020年2月 第53卷
第2期 总第338期

ISSN 1002-0802



9 771002 080208

ISSN 1002-0802 CN51-1167/TN



通信技术

Tongxin Jishu

(1967 年创刊, 月刊)

第 53 卷 第 2 期 (总第 338 期)

2020 年 2 月

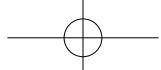
目 次

信息处理与传输

- 幅度与相位分步识别的 QAM 调制模式识别算法 黄思嘉, 杜庆治, 龙 华, 邵玉斌 (261)
基于高斯消元的 BATS 码的改进译码算法 杨 娟, 嵇建波, 李海兵 (268)
卫星通信信道中载波补偿模式的实现 雷东鹏 (273)
短波单载波空时分组码的频域均衡研究 邓永洋, 李开林, 王叶群 (279)
一种基于相关峰统计特征的光纤以太网设备指纹识别系统 陈 超, 彭林宁, 张广凯 (284)
基于围线积分引理的信号变换域分析方法 陈绍荣, 何 健, 陈柏良, 薛在阳 (293)
基于 FSM 的物联网大数据清洗算法 郭雷勇, 李 宇 (301)
一种改进的高维度离群点检测方法 吴远超, 范 磊 (312)
基于 FPGA 实现快速矩阵求逆算法 张 繁, 何明亮 (318)
基于支持向量机分类识别的行人航迹推算室内定位 王 伟, 王存华, 王召巴 (322)
基于改进的 U-Net 生成对抗网络的图像翻译算法 常 佳, 王玉德, 吉燕妮 (327)

网络与系统

- 无线传感器网络泊松分布最优簇首数目的研究 李晓慧, 赵远超, 赵建平 (335)
5G IAB 基站接入网络方案研究 白 天, 李小龙 (341)
5G 时代无线电监测站无人机云平台建设方案研究 韩将星 (345)
LTE 多频多载波复杂组网下的业务均衡优化方法浅析 田上力, 郑 翰 (353)
机动通信网分级分布式网络规划设计 张 毅, 王毅腾, 贾海海, 文小琴, 杨 微 (362)
外场条件下机载通信系统原位性能测试研究 韩海舰, 刘 勇, 郑艳艳 (367)
卫星通信中心站在资源池化架构下的系统可靠性分析 荣敬辉, 刘爱军, 董超颖, 邱文静, 高志祥 (375)
面向海量数据的分布式用户态文件系统研究与设计 龚 恒, 李小勇 (382)
面向对象的通用数据库访问接口泛化方法研究 雷明涛, 李 琼, 施荣荣, 周 刚, 王 磊 (387)
一种面向实时风险预测的工业报警优先级评估方法 王 佳, 陈 励 (393)



安全与保密

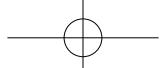
- 基于区块链的异构身份联盟与监管体系架构和关键机制 董贵山, 张兆雷, 李洪伟, 白健, 郝尧, 陈宇翔 (401)
- 一种针对共谋攻击的 I2P 节点选择优化算法 仇润宇, 王轶骏, 薛质 (414)
- 基于机器学习的端口扫描入侵检测 郭楚栩, 施勇, 薛质 (421)
- 基于机器学习的恶意 URL 识别 李泽宇, 施勇, 薛质 (427)
- 基于卷积神经网络的 Android 流量分类方法 郭益民, 张爱新 (432)
- 基于神经网络的 NDN 入侵检测方法 王鑫, 王枫皓 (438)
- DNS 隐私保护安全性分析 孟德超, 邹福泰 (445)
- 面向先进防御技术的网络安全试验场构建方法 刘正军, 徐锐, 李春林, 王治, 魏嘉男 (450)
- 一种面向网络安全实验平台的场景快照方法 李春林, 徐锐, 魏嘉男, 王治 (456)
- 定量和定性相结合的物联网漏洞分类方法研究 兰昆, 朱治丞, 张宇光 (461)
- 基于轻量化安全协议的物联网安全网关技术实现 金小艳, 王忠春, 范国林, 吴晓嫣, 周凌 (469)
- 调频副载波方式应急广播中数字签名算法研究 赵云辉 (474)
- 基于虚拟化动态部署的电力监控系统威胁评估体系 王丹, 宋闯, 李斌, 韩伟, 薛盖超, 吕洁 (479)
- 基于匿名认证的车联网安全技术研究 黄海旭 (487)

工程与应用

- 电台音频采集管理系统设计 瞿珊瑚, 刘宏波, 张旭 (491)
- 皮基站深度覆盖应用 程奎淋, 王原广, 韩飞, 曾品英 (498)
- 基于人脸识别的智慧轨交安全支付系统 杨波, 陈逸辰 (506)
- 浅析电子签章应用安全与技术 谢志勇, 廖敏, 高超航, 王锐 (512)
- 非交互式全盘加密系统设计与实现 黄沾, 杨景贺 (517)
- 人工智能在网络安全运维服务中的应用 周利均 (521)

其他

- 征稿启事 (封三)



COMMUNICATIONS TECHNOLOGY

(Monthly, Started in 1967)

Vol.53

No.2

(Series No.338)

Feb.2020

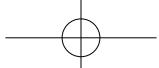
CONTENTS

Information Processing & Transmission

- QAM Modulation Pattern Recognition Algorithm by Step-by-step Identification of Amplitude and Phase *HUANG Si-jia, DU Qing-zhi, LONG Hua, SHAO Yu-bin* (261)
- Modified BATS Codes Decoding Algorithm based on Gaussian Elimination *YANG Juan, JI Jian-bo, LI Hai-bing* (268)
- Implementation of Carrier Compensation Mode in Satellite Communication Channel *LEI Dong-peng* (273)
- Frequency-Domain Equalization for Single-Carrier STBC in HF Communication *DENG Yong-yang, LI Kai-lin, WANG Ye-qun* (279)
- Fingerprint Identification System of Optical Fiber Ethernet Equipment based on Statistical Characteristics of Correlation Peaks *CHEN Chao, PENG Lin-ning, ZHANG Guang-kai* (284)
- Signal Transform Domain Analysis Method based on Contour Integration Lemma *CHEN Shao-rong, HE Jian, CHEN Bai-liang, XUE Zai-yang* (293)
- Big Data Cleaning Algorithm for IoT based on FSM *GUO Lei-yong, LI Yu* (301)
- Modified Detection Method for High-Dimensional Outliers *WU Yuan-chao, FAN Lei* (312)
- Implementation of Fast Matrix Inversion Algorithm based on FPGA *ZHANG Fan, HE Ming-liang* (318)
- Pedestrian-track Dead Reckoning Indoor Location based on Support Vector Machine Classification Recognition *WANG Wei, WANG Cun-hua, WANG Zhao-ba* (322)
- Image Translation Algorithm based on Modified U-Net Generative Adversarial Network *CHANG Jia, WANG Yu-de, JI Yan-ni* (327)

Network & System

- Poisson Distribution Optimal Number of Cluster Heads in Wireless Sensor Networks *LI Xiao-hui, ZHAO Yuan-chao, ZHAO Jian-ping* (335)
- Discussion on 5G IAB Basestation Access Network Solution *BAI Tian, LI Xiao-long* (341)
- Construction Scheme of UAV Cloud Platform for Radio Monitoring Station in 5G Era *HAN Jiang-xing* (345)
- Brief Analysis of Service Balance Optimization Method in LTE Multi-frequency Multi-carrier Complex Networking *TIAN Shang-li, ZHENG Han* (353)
- Planning and Design of Hierarchical Distributed Network for Mobile Communication Network *ZHANG Yi, WANG Yi-teng, JIA Hai-hai, WEN Xiao-qin, YANG Wei* (362)
- In-situ Performance Testing of Airborne Communication Systems under Out-field Conditions *HAN Hai-jian, LIU Yong, ZHENG Yan-yan* (367)
- System Reliability Analysis of Satellite Communication Center Station under Resource Pooling Architecture *CHANG Jing-hui, LIU Ai-jun, DONG Chao-ying, QIU Wen-jing, GAO Zhi-xiang* (375)
- Research and Design of Massive Data-oriented Distributed User-state File System *GONG Heng, LI Xiao-yong* (382)



Generalization of Object-oriented Universal Database Access Interface

..... LEI Ming-tao, LI Qiong, SHI Rong-rong, ZHOU Gang, WANG Lei (387)

Industrial Alarm Priority Evaluation for Real-time Risk Prediction WANG Jia, CHEN Xun (393)

Security & Privacy

Regulatory System Architecture and Key Mechanisms of Blockchain-based Heterogeneous Identity Alliance

..... DONG Gui-shan, ZHANG Zhao-lei, LI Hong-wei, BAI Jian, HAO Yao, CHEN Yu-xiang (401)

I2P Node Selection Optimization Algorithm for Collusion Attacks QIU Run-yu, WANG Yi-jun, XUE Zhi (414)

Machine Learning-based Port Scanning Intrusion Detection GUO Chu-xu, SHI Yong, XUE Zhi (421)

Malicious URL Detection based on Machine Learning Models LI Ze-yu, SHI Yong, XUE Zhi (427)

Classification Method of Android Traffic based on Convolutional Neural Network GUO Yi-min, ZHANG Ai-xin (432)

NDN Intrusion Detection Method based on Neural Network WANG Xin, WANG Feng-hao (438)

DNS Privacy Protection Security Analysis MENG De-chao, ZOU Fu-tai (445)

Construction Method of Network Security Experimental Platform for Advanced Defense Technology

..... LIU Zheng-jun, XU Rui, LI Chun-lin, WANG Ye, WEI Jia-nan (450)

Scenario Snapshot Generating Method for Network Security Experimental Platform

..... LI Chun-lin, XU Rui, WEI Jia-nan, WANG Ye (456)

Quantitative and Qualitative Combination-based IoT Vulnerability Classification Methods

..... LAN Kun, ZHU Zhi-cheng, ZHANG Yu-guang (461)

Technology Implementation of IoT Security Gateway based on Lightweight Security Protocol

..... JIN Xiao-yan, WANG Zhong-Chun, FAN Guo-lin, WU Xiao-yan, ZHOU Ling (469)

Digital Signature Algorithm in FM Subcarrier Emergency Broadcast ZHAO Yun-hui (474)

Threat Assessment System of Power Monitoring System based on Virtualized Dynamic Deployment

..... WANG Dan, SONG Chuang, LI Bin, HAN Wei, XUE Gai-chao, LV Jie (479)

IoV Security Technology based on Anonymous Authentication HUANG Hai-xu (487)

Engineering & Application

Design of Radio Audio Acquisition Management System QU Shan-hu, LIU Hong-bo, ZHANG Xu (491)

Pico Basestation Deep Coverage Application CHENG Kui-lin, WANG Yuan-guang, HAN Fei, ZENG Pin-ying (498)

Smart Rail Transit Secure Payment System based on Face Recognition YANG Bo, CHEN Yi-chen (506)

Analysis on Security and Technology of Electronic Seal XIE Zhi-yong, LIAO Min, GAO Chao-hang, WANG Rui (512)

Non-Interactive Full Disk Encryption System Design and Implementation HUANG Zhan, YANG Jing-he (517)

Application of Artificial Intelligence in Cybersec Operation and Maintenance Service ZHOU Li-jun (521)

Miscellaneous

Contributions Invited (Inside Back Cover)