

2021 06 第 18 卷 Vol.18

无线互联科技

WIRELESS INTERNET TECHNOLOGY

中国核心期刊（遴选）期刊

中国学术期刊网络出版总库（中国知网）全文收录

万方数据－数字化期刊群全文收录

中文科技期刊数据库（维普网）全文收录

ISSN 1672-6944



主管：江苏省科学技术厅

主办：江苏省科学技术情报研究所

万方数据

无线互联科技

WUXIAN HULIAN KEJI

2004年创刊
2021年第6期
(总第202期)
第18卷
半月刊
2021年3月25日

主 管: 江苏省科学技术厅

主 办: 江苏省科学技术情报研究所

编辑出版: 《无线互联科技》杂志社

社 长: 李 敏

副社长: 李克贵

主 编: 严文强

副主编: 汤 湜

编辑部主任: 王雪芬

本期责任编辑: 姚 鑫

编 委: (按姓氏笔画为序)

马永浩 孙 斌

金福兰 周晓明

黄水清 薛 飞

目 次

通信观察

- | | |
|----------------------------|--------------------|
| 1 5G基站高能耗分析与应对策略 | 王江汉, 刘修军, 鲁 军 |
| 3 5G背景下室内信号覆盖解决方案的研究 | 巩倩倩, 段宗维, 杨青青, 张 虎 |
| 5 基于Optisystem的光纤通信系统设计与仿真 | 徐云霞, 时 翔, 汤 祺, 金维东 |
| 8 基于5G技术的有线电视网络改造建设 | 许 林 |
| 10 电子通信设备的接地问题探讨 | 王金环 |

无线天地

- | | |
|------------------------------|----------|
| 12 无线传感ZigBee技术在物联网中的应用 | 于莹莹 |
| 14 调频无线覆盖监控系统建设研究 | 刘颖玮 |
| 16 基于无线传感装置的自主航行水产养殖船设计 | 高梦娜, 陈 玲 |
| 18 气象综合观测系统的运行监控信息化分析 | 蒋雯玉 |
| 20 基于ZeroMQ的民航空管数据库同步软件设计和应用 | 张翰文 |
| 22 基于DF100A广播发射机自动化系统的运维 | 邓晓霞 |

网络地带

- | | |
|------------------------------|-------------------------|
| 24 基于5G及大数据技术的数字化旅游公路环线规划及管理 | 廖 强, 吴 杰 |
| 26 基于HMSIW的宽带带通滤波器设计分析 | 李晓丽 |
| 28 计算机网络安全问题及其防范措施分析 | 李 尊 |
| 30 虚拟网络技术在计算机网络安全中的应用 | 龚颖春 |
| 32 公路网交通运行性能指标汇聚方法与计算实例 | 曾 理, 陆宇航, 郭建华 |
| 35 基于大数据技术的视频监控应用探讨 | 吕 睿 |
| 37 校园网IPv6升级改造探讨 | 钟焯荣, 张晓鹏 |
| 39 计算机网络维护与管理探究 | 李寿兴 |
| 41 大数据背景下高校图书馆云服务管理研究 | 于晶晶 |
| 43 工业互联网的历史内涵与发展形式研究 | 吴 乐, 李德英, 袁 练, 谢 旋, 丁 富 |
| 45 大数据管理服务平台项目质量管理 | 隋吉岩 |

软件透视

- | | |
|-----------------------------------|--------------------|
| 48 化工仿真中图像翻转变换图形学编程研究 | 何 杰, 王大立, 袁 红, 姜国平 |
| 51 计算机语言的逻辑开发及其软件开放设计研究 | 袁爱民 |
| 53 基于无人机的船舶尾气智能检测系统设计 | 卓宏明, 苗炳迪, 徐 鹏 |
| 56 地震灾害风险预评估数据库设计与研究 | 徐 博 |
| 58 数字媒体背景下三维建模的发展与应用 | 陈 兰, 李婧晖 |
| 61 互联网产品的交互应用与实践——手机UI设计的视觉传达 | 时枫哲, 何 程 |
| 63 基于云技术的广西职业教育教学资源库平台建设与应用情况调查研究 | 李月琨, 杨 帆 |

设计分析

- | | |
|----------------------------|-----------------------------------|
| 65 基于STM32的智能缓冲减压安全座椅设计与实现 | 洪鹏翔, 袁宝红, 丁星星 |
| 67 锅炉用平台和扶梯栅格数据库建立与应用 | 汪和卫 |
| 69 基于Docker的MySQL数据库性能分析 | 黄 冰 |
| 71 病房环境实时监控系统的的设计 | 罗甫东, 李 晶, 涂天力, 刘俊峰, 陶梓隐, 杨 浩, 刘永俊 |
| 73 大数据时代智慧机场建设的策略研究 | 何 俊 |
| 76 PPT演示文稿的项目化案例设计与研究 | 贾福运, 魏 里, 李 琨 |

技术应用

79	计算机图像处理技术在网页设计中的运用	何 西
81	Java技术的发展趋势与应用研究	姚雅峰
83	新时期计算机技术在高校教学管理中的具体应用分析	张小锋
85	高校图书馆大数据服务中的问题及其改进模式	韩 冰
87	电子信息工程中的自动化技术应用研究	王志军
89	射频识别技术在电能计量资产管理中的应用	朱真辉
91	电子电路仿真技术在电子应用开发中的应用	董彩霞
93	智能化标注关键技术在建筑领域的应用研究	陈幸如, 李喜梅, 贺 军
95	基于知识图谱的搜索引擎技术研究与应用	刘昱甫
97	灰度发布在智能问答模型训练中的应用研究	柴立岩, 庞 超, 张进猛
99	热备份保护倒换技术在SDH光传输网络中的应用	黄浩翔, 卢上丁
101	增强现实技术在互动教学中的应用探究	宋燕燕, 彭长好, 赵 莹, 秦 军, 董丽花
103	多媒体技术在计算机软件中的应用研究	苏翠玲, 韩江立

实验研究

105	配电线路故障在线监测装置自动化检测技术的研究与应用	庄黎明, 谢海宁, 陆 建, 尹建坤
107	卷烟检测指标的关联性分析及应用	王红霞, 李 超
109	30~512 MHz两级宽带功率放大器极间匹配设计	黎明林
112	江苏有线数据库一体机内存优化前后性能对比分析	熊 磊
115	一种基于数字信号的光传输环形网保护技术研究	陈远略, 汪立群, 陆 伟

数字教育

118	基于Cisco模拟器交换机综合实训的设计与实现	杨 明, 杨夏柏
121	基于“超星学习通”的轨道信号类课程混合式教学模式探索	孔繁军
123	在线教学存在的问题及应对策略	徐卜一, 张 帆, 胡 岩
126	高校教师微课制作与应用困境探析	李 宁, 宋南阳, 万 龙
128	信息化时代背景下慕课的建设与实施策略	宋南阳, 李 宁, 厉晓薇
130	高职院校计算机类专业人才培养模式构建及实践探索	王丽娟
132	计算机专业大学生竞赛活动与常规教学相结合的研究与实践	徐礼金
135	大数据时代高校学生工作创新实践分析	张晓晔
137	人工智能视域下教师信息化教学能力的提升策略	曹煊淇
139	高职院校线上教学情况分析	杨素婷
142	职业院校计算机应用专业教学及策略分析 ——以“图层和蒙版的应用”单元为例	堵晓霞, 吴建洪
145	基于“金课”的“信息处理技术”课程优化研究与实践 ——以“三式一化”教学和考核方式为例	吴 媛, 梁 娟, 刘 丹
148	高校计算机信息技术课程教学改革的研究与探讨 ——以伊犁师范大学“计算机信息技术基础”课程教学为例	林 玲
150	信息技术环境下“模拟电子”混合式教学研究	蒋文娟
152	基于OBE教育理念的“JavaScript技术”课程教学改革研究	霍 聪, 耿楠楠
154	微课融入课堂的混合式教学方式在“计算机网络”课程中的应用	赵光旭, 郑 萌, 张皓瑜
156	项目教学法在“Android开发”课程中的应用	胡兴铭, 刘 珍
158	基于信息技术的高校“数学”课程建设优化研究	蔡晓伦
160	信息环境下高职“数学”课混合式教学模式的思考	司 维
162	基于OBE教学模式的医学院校“计算机”课程教学改革探析	张利香
167	基于神经网络的在线课堂弹幕评论的情感分析与研究	陆 霞, 武善锋

中国标准连 ISSN 1672-6944
续出版物号: CN 32-1675/TN

邮发代号: 28-473

发行范围: 公开

发 行: 江苏省报刊发行局

印 刷: 南京百花彩色印刷广告制作
有限责任公司

定 价: 40.00元

《无线互联科技》杂志社

社 址: 江苏省南京市龙蟠路171号

电 话: (025)-85433097

(025)-85410361

邮 编: 210042

网 址: www.sti.js.cn

(科技宣传—科技传媒服务中心)

邮 箱: hlkj@sti.js.cn

户 名: 江苏省科学技术情报研究所

账 号: 4301012509001028301

开 户 行: 工商银行南京市板仓支行

WIRELESS INTERNET TECHNOLOGY

No.06 2021 (Total No.202)

CONTENTS

High energy consumption analysis and response strategy of 5G base station	Wang Jianghan, Liu Xiujun, Lu Jun (1)
Research on indoor signal coverage solutions under the background of 5G	Gong Qianqian, Duan Zongwei, Yang Qingqing, Zhang Hu (3)
Design and simulation of optical fiber communication system based on Optisystem.....	Xu Yunxia, Shi Xiang, Tang Qi, Jin Weidong (5)
Construction of cable TV network reconstruction based on 5G technology	Xu Lin (8)
Discussion on the grounding of electronic communication equipment	Wang Jinhuan (10)
Application of wireless sensor ZigBee technology in Internet of Things	Yu Yingying (12)
Research on the construction of FM wireless coverage monitoring system	Liu Yingwei (14)
Design of autonomous navigation aquaculture ship based on wireless sensor device	Gao Mengna, Chen Ling (16)
Information analysis of operation monitoring of meteorological integrated observation system	Jiang Wenyu (18)
Design and application of civil aviation air traffic control database synchronization software based on ZeroMQ	Zhang Hanwen (20)
Operation and maintenance of DF100A broadcast transmitter automation system	Deng Xiaoxia (22)
Digital tourism highway loop planning and management based on 5G and Big Data technology	Liao Qiang, Wu Jie (24)
Design and analysis of broadband bandpass filter based on HMSIW	Li Xiaoli (26)
Analysis of computer network security problems and preventive measures	Li Zun (28)
Application of virtual network technology in computer network security	Gong Yingchun (30)
Aggregation methods and calculation examples of performance measures for highway network operations	Zeng Li, Lu Yuhang, Guo Jianhua (32)
Discussion on the application of video surveillance based on Big Data technology	Lyu Rui (35)
Discussion on the upgrading and reconstruction of campus network IPv6	Zhong Zhuorong, Zhang Xiaopeng (37)
Research on computer network maintenance and management	Li Shouxing (39)
Research on cloud service management of university library under Big Data	Yu Jingjing (41)
Discussion on the historical connotation and development form of industrial Internet	Wu Le, Li Deying, Yuan Lian, Xie Xuan, Ding Fu (43)
Research on project quality management for Big Data management service platform	Sui Jiyan (45)
Research on graphic programming of image flipping transformation in chemical simulation	He Jie, Wang Dali, Yuan Hong, Jiang Guoping (48)
Research on logic development of computer language and its open software design	Yuan Aimin (51)
Design of ship exhaust intelligent detection system based on UAV	Zhuo Hongming, Miao Bingdi, Xu Peng (53)
Design and research of risk pre-assessment database for earthquake disaster	Xu Bo (56)
Development and application of 3D modeling in the background of digital media	Chen Lan, Li Jinghui (58)
Interactive application and practice of Internet products: visual communication of mobile UI design	Shi Fengzhe, He Cheng (61)
Research on the construction and application of Guangxi vocational education teaching resource database platform based on cloud technology	Li Yuekun, Yang Fan (63)
Design and implementation of intelligent cushioning and decompression safety chair based on STM32	Hong Pengxiang, Yuan Baohong, Ding Xingxing (65)
Establishment and application of date-base for grid of boiler's platform & ladder	Wang Hewei (67)
Performance analysis of MySQL based on Docker	Huang Bing (69)
Design of real time monitoring system for ward environment	Luo Fudong, Li Jing, Tu Tianli, Liu Junfeng, Tao Ziyin, Yang Hao, Liu Yongjun (71)
Research on the strategy of intelligence airport construction in the era of Big Data	He Jun (73)
PPT presentation project case design and research	Jia Fuyun, Wei Li, Li Kun (76)
Application of computer image processing technology in web design	He Xi (79)
Development trend and application research of Java technology	Yao Yafeng (81)

Analysis on the application of computer technology in teaching management in colleges and universities in the new period	Zhang Xiaofeng (83)
Problems and improvement mode of Big Data service in university library	Han Bing (85)
Research on automation application in electronic information engineering	Wang Zhijun (87)
Application of radio frequency identification technology in the management of electric energy metering assets	Zhu Zhenhui (89)
Effects of electronic circuit simulation technology in electronic application development	Dong Caixia (91)
Application of the key technology of intelligent marking in construction	Chen Xingru, Li Ximei, He Jun (93)
Research and application of search engine technology based on knowledge map	Liu Yufu (95)
Research on the application of grayscale publication in the training of intelligent question-answering model	Chai Liyan, Pang Chao, Zhang Jinmeng (97)
Application of hot backup protection switching in optical transport network	Huang Haoxiang, Lu Shangding (99)
Application of augmented reality technology in interactive teaching	Song Yanyan, Peng Changhao, Zhao Ying, Qin Jun, Dong Lihua (101)
Research on the application of multimedia technology in computer software	Su Cuiling Han Jiangli (103)
Research and application of automatic detection technology for on-line monitoring device of distribution line fault	Zhuang Liming, Xie Haining, Lu Jian, Yin Jiankun (105)
Correlation analysis and application of cigarette detection index	Wang Hongxia, Li Chao (107)
Interstage match design of 30~512 MHz 2 stage bandwidth power amplifier	Li Minglin (109)
Performance comparison and analysis of JSCN exadata before and after memory optimization	Xiong Lei (112)
Research on ring network protection technology in special optical transport system base on digital signal	Chen Yuanlve, Wang Liqun, Lu Wei (115)
Design and implementation of integrated training of switch based on Cisco simulator	Yang Ming, Yang Xiabai (118)
Exploration on hybrid teaching mode of track signal courses based on “Super Star Learning Link”	Kong Fanjun (121)
Problems and countermeasures in online teaching	Xu Boyi, Zhang Fan, Hu Yan (123)
Analysis on the dilemma of microcourse production and application of college teachers	Li Ning, Song Nanyang, Wan Long (126)
Construction and implementation strategy of MOOC in the information age	Song Nanyang, Li Ning, Li Xiaowei (128)
Construction and practice exploration of training mode for computer professionals in higher vocational colleges	Wang Lijuan (130)
Research and practice on the combination of competition activities and routine teaching for college students of computer science	Xu Lijin (132)
Practice of student work innovation in Big Data	Zhang Xiaoye (135)
Strategies for improving teachers’ information teaching ability from the perspective of artificial intelligence	Cao Xuanqi (137)
Analysis of online teaching in higher vocational colleges	Yang Suting (139)
Analysis of teaching and strategy of computer application specialty in vocational colleges: taking “Application of Layers and Mask” as an example	Du Xiaoxia, Wu Jianhong (142)
Course optimization in “information processing technology” based on “gold course”: take the teaching and examination mode of “Three-Type and Unitization” as an example	Wu Yuan, Liang Juan, Liu Dan (145)
Research and discussion on teaching reform of “Computer Information Technology” course in universities: taking Yili Normal University “Computer Information Technology” teaching as an example	Lin Ling (148)
Research on Hybrid Teaching of “Analog Electronics” in information technology environment	Jiang Wenjuan (150)
Research on teaching reform of “JavaScript Technology” curriculum based on OBE education concept	Huo Cong, Geng Nannan (152)
Micro class into the classroom teaching methods of the hybrid application in the “Computer Network” course	Zhao Guangxu Zheng Meng Zhang Haoyu (154)
Application of project teaching method in “Android Development” course	Hu Xingming, Liu Zhen (156)
Research on optimization of “Mathematics” curriculum construction in colleges and universities based on information technology	Cai Xiaolun (158)
Thinking on mixed teaching model of “Mathematics” course in higher vocational college under information environment	Si Wei (160)
Analysis on the reform of computer course teaching in medical colleges based on obe teaching mode	Zhang Lixiang (162)
Sentiment analysis and research of online classroom barrage comments based on neural network	Lu Xia, Wu Shanfeng (167)