



ISSN 1672- 6944
CN 32-1675/TN

2021 09 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

9 771672 694217 0 9>

主管：江苏省科学技术厅 主办：江苏省科学技术情报研究所

2004年创刊

2021年第9期
(总第205期)

第18卷
半月刊

2021年5月10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 涅

编辑部主任: 王雪芬

本期责任编辑: 何 琳

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 机载宽带卫星通信系统相关技术分析 | 许松松, 高睿勤, 陆 斌 |
| 3 通信基础设施建设环节存在的问题与对策研究 | 于利鑫 |
| 5 广播电视系统中接地技术的应用 | 梁 焰 |
| 7 有线电视网络中数字电视技术的应用与发展探索 | 张龙辉 |
| 9 基于MSDL的应急通信网保障形式化描述方法研究 | 陈浩然, 朱 巍 |

无线天地

- | | |
|------------------------|----------|
| 12 基于有向树算法的无线传感器网络应用研究 | 缪德俊, 于 标 |
| 16 混合无线传感器网络覆盖控制分析 | 史 晶 |
| 18 无线传感器网络在智能楼宇中的应用 | 邱秀玲 |
| 20 无线调车机车信号和监控技术装备发展综述 | 郭喜春 |

网络地带

- | | |
|-----------------------------|----------|
| 22 计算机网络安全及其防范措施探讨 | 曹 斌 |
| 24 基于网格化和大数据的移动网络覆盖质量评估方法研究 | 李智峰 |
| 26 互联网时代南阳市推进网络强市建设措施分析 | 史 可 |
| 28 无锡市物联网产业生态系统发展对策研究 | 秦昌琪 |
| 30 SDN网络技术在虚拟化映射网络系统中的应用探究 | 谢 燕 |
| 32 校园网络P2P流量管理研究 | 蔡 琴 |
| 35 5G时代智慧图书馆发展探究 | 卢晓龙 |
| 37 数据环境下高校图书馆的智慧化建设 | 吾热亚提·玉素甫 |

软件透视

- | | |
|--------------------------------|---------------|
| 39 基于工业组态MCGS的运动控制系统研究与应用 | 李敬新 |
| 41 面向邮政企业的云创系统实践研究 | 刘 欢, 谢利敏, 柴立岩 |
| 43 基于智慧物流的高职院校智能仓储实训平台建设路径研究 | 赵 丽 |
| 46 基于技能测试的电力电气类专业教学资源平台建设与应用研究 | 蔡昱灿 |
| 48 智能停车管理系统建设方案研究 | 蒋国辉 |
| 50 多元LDPC码的构造与译码研究综述 | 赵 勇, 夏 融, 丁 彦 |
| 53 电子云医疗中的指定验证者签密方案 | 岳 峰 |
| 56 新形势下高校办公自动化系统的研究 | 肖 述 |

设计分析

- | | |
|-----------------------------|-----------------------------------|
| 58 基于ZigBee的冷库环境监测系统设计 | 王志明, 杨金鑫, 丁忠昌 |
| 63 基于计算机技术的跨平台学生信息多终端管理系统设计 | 任荣君 |
| 65 计算机软件数据库设计的原则及问题研究 | 刘 晶, 张立荣 |
| 67 基于物联网技术的智能大棚系统设计与实现 | 周 智, 王 璞, 杨想响, 曾 杰, 宋家豪, 杨文武, 李雪梅 |
| 69 基于身份加密的组合文档安全删除方案 | 戴素芬, 沈薇薇 |
| 72 基于“互联网+”技术的产品包装设计研究 | 田 伟 |
| 74 智能车内无线防撞防盗控制系统设计 | 王鑫蕊, 苏心滢 |

技术应用

- | | |
|-----------------------|-----|
| 76 安全漏洞检测技术在计算机软件中的应用 | 李 云 |
| 78 数据加密技术在计算机网络安全中的应用 | 刘思博 |

80	计算机技术在船舶检验系统中的应用	马克文
82	自动化技术在电子信息工程设计中的实践应用	赵亚飞
84	企业计算机应用技术和信息网络技术研究	吴海威
86	人工智能技术在环境设计教学中的应用	任倩慧
88	“计算机平面设计”课堂中信息化教学的应用探析	孟 娟
90	高速公路ETC卡的移动支付应用	肖全阳
92	数字与信息化时代下的计算机技术发展应用	张 超, 高 鹏
94	信息管理中计算机数据库技术的应用探析	张立荣, 苏翠玲
96	配电自动化系统主站网络化在线测试技术的应用探讨	莫 宇
99	单片机在电子信息技术中的应用与开发	关德君
101	自动化技术在4D电影中的应用	杨 欣
103	大数据在高校实验室管理中的应用研究	殷 明, 杨 清
105	基于AI技术的传统媒体经营与管理创新	蔡文丰
108	大数据技术应用面临的挑战及对策研究	金 放

实验研究

110	基于AI智能识别的自动垃圾分类技术研究	萧志钰
112	城市冷链物流节点空间布局方法研究	彭 影, 洪士雯
115	基于云计算和VMwareSphere虚拟化技术的架构分析	陈海燕
117	电力配网调度管理实践及其技术策略研究	尹潇宇
119	Maya节点结构与三维动画制作研究	王 晖

数字教育

121	自媒体在高校计算机课程教学中的应用探索	黄代根
123	互动式教学模式在高职计算机教学中的应用研究	李效渊, 刘赛彬
125	网络在线教学发展与挑战	汪方斌, 张彦福, 刘艳丽, 程秀芝
127	基于SPOC的高职课程混合式教学模式应用研究	罗 薇, 彭 兵
129	百万扩招背景下超星平台的高职院校教学模式探究	屈 娜
131	应用型高校计算机专业实践教学方式的探索	张 鑫
133	高职“计算机公共基础”课程教学改革探索	吴红姣
135	基于SPOC的高职课堂教学模式思考	徐红丽, 罗 奇
137	基于Maple软件的“线性代数”课程教学改革与实践研究	刘小刚, 王 震, 章培军, 惠小健, 任水利
139	基于BIM技术的“工程制图”课程教学改革分析	侯满哲, 庞永俊, 孙冰心
141	关于微课与实训课教学资源线上线下整合分析 ——以“电气控制线路安装与检修”课程为例	莫文火
143	BOPPPS教学法在“制药设备与车间设计”课程中的应用	杜 健, 梁井瑞, 李 伟, 王 剑

147	分层分类教学法在“信息技术”课程中的应用	宋召良
149	“金课”视角下“单片机”课程教学改革与实践	田素玲, 陈明颖
151	基于SPOC的线上线下混合式教学的改革探索 ——以“操作系统”课程为例	江小静
153	OBE理念下的“电子技术”课程实践与评价体系研究	张 鹏, 吉 强
155	计算机等级考试与“计算机基础”教学关系分析	廖健来, 杨丽红
157	计算机教学面临的问题和解决策略	陈 丽
159	新时代人工智能教育理论的研究现状分析	钟 彩, 潘梅森, 蒋 毅, 肖桂霞
161	“产学研用”在高职计算机类专业人才培养中的应用探究	丁爱萍
163	“1+X”证书制度对高职技术计算机网络技术人才培训模式的影响研究	王懿嘉
165	“双创”背景下高职计算机类专业应用型人才培养探究	汤 应
167	基于APP的市场营销专业课堂教学改革与探索	宿钦兰

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.09 2021 (Total No.205)

CONTENTS

Analysis on related technologies of airborne broadband satellite communication.....	Xu Songsong, Gao Ruijie, Lu Bin (1)
Research on problems and countermeasures of communication infrastructure construction.....	Yu Lixin (3)
Application of grounding technology in radio and television system.....	Liang Jiong (5)
Exploration on the application and development of digital TV technology in CATV network	Zhang Longhui (7)
Study on the formal description method of based on MSDL emergency communication network	Chen Haoran, Zhu Wei (9)
Application research of wireless sensor networks based on directed tree algorithms	Miao Dejun, Yu Biao (12)
Coverage control analysis of hybrid wireless sensor networks	Shi Jing (16)
Application of wireless sensor network in intelligent building	Qiu Xiuling (18)
Review on the development of signal and monitoring technology equipment for wireless shunting locomotive	Guo Xichun (20)
Discussion on computer network security and its preventive measures	Cao Bin (22)
Research on a comprehensive method of analyzing the coverage quality of mobile network and allocation of base station resource based on grid and using Big Data	Li Zhifeng (24)
Analysis of measures to promote the construction of strong network in Nanyang City under the Internet era	Shi Ke (26)
Research on the development countermeasures of the industrial ecosystem of the Internet of Things in Wuxi.....	Qin Changqi (28)
Application of SDN network technology in virtualization mapping network system	Xie Yan (30)
Study on campus network P2P traffic management	Cai Qin (32)
Discussion on the development of smart library in 5G era	Lu Xiaolong (35)
Intelligent construction of university library under the data environment.....	Wureyati·Yusufu (37)
Research and application of motion control system based on industrial configuration MCGS	Li Jingxin (39)
Research on the practice of cloud creation system for postal enterprises	Liu Huan, Xie Limin, Chai Liyan (41)
Research on the construction path of intelligent warehousing training platform in higher vocational colleges based on intelligent logistics	Zhao Li (43)
Construction and application of teaching resource platform for power and electrical majors based on skill testing	Cai Yucan (46)
Research on construction scheme of intelligent parking management system	Jiang Guohui (48)
Introduction of construction and decoding of non-binary LDPC codes.....	Zhao Yong, Xia Rong, Ding Yan (50)
Designated verifier signcryption scheme in electronic cloud healthcare	Yue Feng (53)
Research on office automation system of colleges and universities in the new situation	Xiao Shu (56)
Design of environmental monitoring system for cold storage based on ZigBee	Wang Zhiming ,Yang Jinxin ,Ding Zhongchang (58)
Cross-platform student information multi-terminal management system based on computer technology.....	Ren Rongjun (63)
Problems and design principles in the design of computer software database	Liu Jing, Zhang Lirong (65)
Design and implementation of intelligent greenhouse system based on Internet of Things	Zhou Zhi, Wang Pu, Yang Xiangxiang, Zeng Jie, Song Jiahao, Yang Wenwu, Li Xuemei (67)
Secure deletion scheme of composite document based on identity encryption	Dai Sufen, Shen Weiwei (69)
Research on product packaging design based on “Internet +” technology	Tian Wei (72)
Design of wireless anti collision and anti theft system in vehicle based on MCU	Wang Xinrui, Su Xinying (74)
Application of security vulnerability detection technology in computer software	Li Yun (76)
Application of data encryption technology in computer network security	Liu Sibo (78)
Exploring the application of computer in ship inspection	Ma Kewen (80)
Application of automation technology in electronic information engineering design.....	Zhao Yafei (82)
Enterprise computer application technology and information network technology construction	Wu Haiwei (84)
Application of artificial intelligence technology in environmental design teaching	Ren Qianhui (86)
Analysis on the application of informatization teaching in “Computer Graphic Design” class.....	Meng Juan (88)

Mobile payment application of highway ETC card	Xiao Quanyang (90)
Development and application of computer technology in digital and information era	Zhang Chao, Gao Peng (92)
Analysis on the application of computer database technology in information management	Zhang Lirong, Su Cuiling (94)
Online testing technology of main station network of distribution automation system	Mo Yu (96)
Application and development of single chip microcomputer in electronic information technology	Guan Dejun (99)
Analysis on the application of automation technology in 4D film	Yang Xin (101)
Research on the application of Big Data in university laboratory management	Yin Ming, Yang Qing (103)
Innovation of traditional media management based on the current AI upsurge	Cai Wenfeng (105)
Discussion on challenging scientific issues in Big Data technology and application	Jin Fang (108)
Research on automatic garbage classification technology based on AI intelligent visual recognition and sorting	Xiao Zhiyu (110)
Research on spatial layout method of urban cold chain logistics nodes	Peng Ying, Hong Shiwen (112)
Architecture analysis based on cloud computing VMwareSphere virtualization technology	Chen Haiyan (115)
Practice and technical strategy of power distribution network dispatching management	Yin Xiaoyu (117)
Analysis Maya node structure and 3D animation making	Wang Hui (119)
Application of We Media in computer course teaching in colleges and universities	Huang Daigen (121)
Research on the application of interactive teaching mode in higher vocational computer teaching	Li Xiaoyuan, Liu Saibin (123)
Online teaching development and challenges	Wang Fangbin, Zhang Yanfu, Liu Yanli, Cheng Xiuzhi (125)
Study on the application of hybrid teaching mode in higher vocational courses based on SPOC	Luo Wei, Peng Bing (127)
Expansion of the teaching mode of higher vocational colleges based on Chaoxing platform under the background of million enrollment	Qu Na (129)
Exploration of practical teaching methods for computer majors in application-oriented universities	Zhang Xin (131)
Exploration on teaching reform of “Computer Public Basic” Course in higher vocational college	Wu Hongjiao (133)
Thinking on the classroom teaching mode of higher vocational education based on SPOC	Xu Hongli, Luo Qi (135)
Teaching reform and practice of “Linear Algebra” course based on Maple	Liu Xiaogang, Wang zhen, Zhang Peijun, Hui Xiaojian, Ren Shuili (137)
Analysis on teaching reform of “Engineering Drawing” course based on BIM technology	Hou Manzhe, Pang Yongjun, Sun Bingxin (139)
Analysis on the on-line and off-line integration of the teaching resources of microcourse and practical training course: taking “Electrical Control Line Installation and Maintenance” course as an example	Mo Wenhua (141)
Application of BOPPPS teaching method in “Pharmaceutical Equipment and Workshop Design”	Du Jian, Liang Jingrui, Li Wei, Wang Jian (143)
Application of hierarchical and classified teaching method in “Information Technology ”course	Song Zhaoliang (147)
Teaching reform and practice of “Single Chip Microcomputer” course under the view of “Golden Course”	Tian Suling, Chen Mingying (149)
Reform and exploration of online and offline blended teaching based on SPOC: taking “Operating System” course as an example	Jiang Xiaojing (151)
Study on the practice and evaluation system of “Electronic Technology” course under OBE concept	Zhang Peng, Ji Qiang (153)
Analysis of the relationship between computer grade examination and “Computer Basic” teaching	Liao Jianlai, Yang Lihong (155)
Problems and solutions of computer teaching	Chen Li (157)
Analysis on the research status of artificial intelligence education theory in the new era	Zhong Cai, Pan Meisen, Jiang Yi, Xiao Guixia (159)
Research on the application of “Learning, Learning and Research” in the training of computer professionals in higher vocational education	Ding Aiping (161)
“1+X” study on the influence of certificate system on the training mode of computer network technicians in higher vocational colleges	Wang Yijia (163)
Research on the training applied talents of computer major in higher vocational colleges under the background of “Innovation and Entrepreneurship”	Tang Ying (165)
Reform and exploration of classroom teaching of marketing major based on application	Su Qinlan (167)