

计算机测量与控制

2024年3月 第32卷 第3期

目 次

● 综述与评论 ●

激光即时定位与建图算法综述 刘志成,王华龙,马兴录(1)

● 测试与故障诊断 ●

航天器展开机构压力传感器无线测控系统设计 汪新舜,吴星云,刘晓飞,邢香园,吴剑锋(9)
基于AES的改进视频加密测试 杜宸罡,李博,画芊昊(17)
无人机DEM测点插值算法的矿区沉陷测绘技术 朱涛(24)
基于时域反射法的电力电缆网络故障诊断方法研究 董海迪,张瑞,王浙娜,金凯,高迎彬(30)
基于改进DV-HOP的道路交通拥堵传感节点快速监测 张华,易丹(37)
基于并联卷积神经网络的无人机遥感影像建筑区域测量 黄艳晖,向环丽,余荣春(44)
聚乙烯管焊接接头相控阵超声检测的优化设计 吴军,吴胜平,郑凯,范正,许倩,王海涛(50)
基于NB-IoT的UPS智能在线监测系统的设计 宋汝浩,李成,张泽,李科遥,马锦毅,朱代先(57)
基于知识图谱的网络安全漏洞智能检测系统设计 杜艺帆,丛红艳(63)
基于YOLOv5改进的铁路工人安全帽检测算法研究 周瑶,周石(71)
基于ATML的机载电子系统原位测试系统设计与实现 姜晨,宋帆(79)
铁路货车轮轴类部件故障状态多维度评估建模研究 徐建喜,崔涛,赵斌(85)
基于改进YOLOv网络的外观检测研究 李莉,黄承宁(92)
基于深度SSD改进模型的传动设备状态在线监测研究 王宜欣,周大可(99)
通风机械仪表盘在复杂背景环境中视觉故障检测与定位研究 周晨刚(106)
基于监控视频流的手持探针探测位置检测算法的设计 张建鹏,徐云,杨承翰,林奇洲(112)
一种采用B样条插值的改进能量算子在电梯电机轴承故障诊断中的应用 孙敏,魏禹,马吉祥,周璇(118)
一种结合弹性波CT正演模拟与钻孔注水法的防渗墙检测方法研究 邓扬,陆金琦,余信江,胡超(125)
基于强化学习算法的神经网络模糊测试技术优化研究 张宇豪,关昕(131)
基于多头注意力机制的多模态帕金森病安全检测系统 季培琛,李晨(138)

● 控制技术 ●

基于Matlab的运动控制系统实验平台设计 徐建明,支文龙,周家豪(146)
基于IMFAC的无人艇抗干扰航向自适应控制 包涛,王琦,周则兴,陈卓(153)
含时延的车辆队列事件触发一致性控制研究 施丽佳,陈珍萍,贺文,景苏川(159)
基于区块链的实景三维地理信息数据加密控制系统设计 范巍,黄蕾,赵晶(169)
一种靶弹多功能控制器设计与实现 杜江,王鑫,王刚,付京来(175)
基于D-DQN强化学习算法的双足机器人智能控制研究 李丽霞,陈艳(181)

基于区块链技术的健康医疗数据隐私加密控制系统设计.....孙煦(188)

● 军事装备测控技术 ●

基于PSD传感器的炸点三维坐标测量方法研究.....宁威,褚文博,张斌,赵冬娥(195)
温压炸药爆炸瞬态高温测试技术研究.....马旭静,孙鹏,张骏虎,刘睿辰,王高(204)

● 设计与应用 ●

基于LSD检测的无人机视觉着陆定位算法.....杨楠,刘小雄,苗升,秦斌(211)
基于磁转速信号的自适应增益采集系统设计.....张永杰,马林,董浩森,康良伟,边瑞卿,李凯(218)
可重复使用飞行器地面系统超融合设计及应用.....麻雨欣,曾发,张耀磊,代京,张翔,梁君(225)
基于滚动速度障碍法的无人机山地航测避障路径规划研究.....侯晨曦(232)
基于轻量级金字塔网络的种子分选方法研究.....李卫杰,桑肖婷,李环宇,魏平俊,李骁(239)
基于VMD方法的混凝土缺陷超声成像噪声处理研究.....庄政,任宏伟,田博文,郑元成,路乾(247)
基于自编码神经网络的航空物探遥感数据分类方法研究.....于刘(253)
基于机器视觉的雨雾天驾驶辅助系统设计.....洪儒,于力涵,戴安邦,谢迎娟(259)
基于XC7V690T的在轨抗单粒子翻转系统设计.....夏俊,张嘉伟,孙晨,朱昶文,江亚州(267)
一种宽频带复合天线设计.....王亮,赵东贺,韩国栋(273)
无人机无线网络中基于队列稳定的无线与计算资源分配优化.....党甜,王鹏,赵海舜,王禹,杜龙海(280)
基于云数据中心的多源异构数据治理技术研究.....孙瑜(286)
基于双核锁步的多核处理器SEU加固方法.....郭强,伍攀峰,许振龙(293)
一种伪卫星实现隧道定位的方法及验证.....任科翰,王振岭,郭政(300)
基于双目视觉的水下动态目标识别与定位方法研究.....
柳靖彬,刘卫东,李乐,张帅军,张文博,李艳丽(306)
高速磁浮列车制动控制器综合测试平台研制.....江守亮,付善强,杨勇,朱天亮,刘宁,王晓庆(313)
基于混沌系统和动态DNA编码的彩色图像加密算法.....赵桥,李博,项融融(319)
基于超宽带技术的运动目标跟踪高精度定位系统设计.....李强(327)
基于信标导引的目标方位估计方法.....李欣然,李小民,史岩,古书铭(334)

● 智能仪器与传感技术 ●

基于ATML标准的SCATS在机载电子系统通用自动测试设备中的应用.....
吴国宝,宋帆,曾俊华,游洪顺(340)
基于QPSO的震动传感器片上相位补偿器设计方法.....
贺斌,李剑,马翊翔,庞润嘉,展勇忠,邹宇,刘宁(346)

期刊基本参数：CN11-4762/TP*1993*m*16*300*zh+en*P*¥45*1000*51*2024-3

本期责任编辑：唐德生

COMPUTER MEASUREMENT & CONTROL

Vol. 32 No. 3 Mar. 2024

Contents

• Summary and Comment •

- Summary of Laser Real-time Positioning and Mapping Algorithm.....LIU Zhicheng,WANG Hualong,MA Xinglu(1)

• Test and Fault Diagnosis •

- Design of Wireless Measurement and Control System for Spacecraft Deployment Pressure Sensor.....WANG Xinshun,WU Xingyun,LIU Xiaofei,XIN Xiangyuan,WU Jianfeng(9)
Improved Video Encryption Test Based on AES.....DU Chen'gang,LI Bo,HUA Qianhao(17)
Mining Subsidence Mapping Technology Based on UAV DEM Survey Point Interpolation Algorithm.....ZHU Tao(24)
Research on Fault Diagnosis Method of Power Cable Network Based on Time Domain Reflectometry.....DONG Haidi,ZHANG Rui,WANG Xina,JIN Kai,GAO Yingbin(30)
Rapid Monitoring of Road Traffic Congestion Sensor Nodes Based on Improved DV-HOP.....ZHANG Hua,YI Dan(37)
Building Area Measurement of UAV Remote Sensing Image Based on Parallel Convolution Neural Network.....HUANG Yanhui,JIANG Huanli,YU Rongchun(44)
Optimized Design of Phased Array Ultrasonic Testing for Polyethylene Pipe Welding Joints.....WU Jun,WU Shengping,ZHENG Kai,FAN Zheng,XU Qian,WANG Haitao(50)
Design of UPS Intelligent Online Monitoring System Based on NB-IoT.....SONG Ruaho,LI Cheng,ZHANG Ze,LI Keyao,MA Jinyi,ZHU Daixian(57)
Design of Intelligent Detection System for Network Security Vulnerabilities Based on Knowledge Graph.....DU Yifan,CONG Hongyan(63)
Research on the Detection Algorithm of Railway Worker's Hard Hat Based on YOLOv5 Improvement.....ZHOU Yao,ZHOU Shi(71)
Design and Implementation of In-situ Testing System for Airborne Electronic Systems Based on ATML.....JIANG Chen,SONG Fan(79)
Research on Multidimensional Evaluation Modeling of Fault States of Railway Freight Car Wheel Axles.....XU Jianxi,CUI Tao,ZHAO Bin(85)
Research on Appearance Detection Based on Improved YOLOv Network.....LI Li,HUANG Chengning(92)
Research on On-line Monitoring of Transmission Equipment Status Based on Improved Deep SSD Model.....WANG Yixian,ZHOU Dake(99)
Research on Visual Fault Detection and Location of Ventilation Machinery Instrument Panel in Complex Background Environment.....ZHOU Shenggang(106)
Design for Position Detection Algorithm of Hand-Held Probe Based on Video Surveillance.....ZHANG Jianpeng,XU Yun,YANG Chenghan,LIN Qizhou(112)
An Improved Energy Demodulation Operator Method Using Bspline Interpolation for Bering Fault Diagnosis of Elevator Motor.....SUN Min,WEI Yu,MA Jixiang,ZHOU Xuan(118)
Detection Method for Anti-seepage Wall Combined Elastic Wave CT Forward Simulation with Driling and Water Injection Technology.....DENG Yang,LU Jinqi,YU Xinjiang,HU Chao(125)
Research on Neural Network Fuzzy Testing Method Based on Reinforcement Learning Algorithm.....ZHANG Yuhao,GUAN Xin(131)
Multimodal Safety Detection System for Parkinson's Disease Based on Multi-head Attention Mechanism.....JI Peichen,LI Chen(138)

• Control Technology •

- Design of Experiment Platform for Motion Control System Based on Matlab.....XU Jianming,ZHI Wenlong,ZHOU Jiahao(146)
Anti-disturbance Course Adaptive Control of USV Based on IMFAC.....BAO Tao,WANG Qi,ZHOU Zexing,CHEN Zhuo(153)
Consistent Control of Vehicle Platoon Event Triggering with Communication Delay.....SHI Lijia,CHEN Zhenping,HE Wen,JING Suchuan(159)

Design of Blockchain-Based Real-time 3D Geographic Information Data Encryption Control System.....	FAN Wei,HUANG Lei,ZHAO Jing(169)
Design and Realization of Multi-function Controller for Target Missile.....	DU Jiang,WANG Xin,WANG Gang,FU Jinglai(175)
Research on Intelligent Control of Biped Robot Based on D-DQN Reinforcement Learning Algorithm.....	LI Lixia,CHEN Yan(181)
Design of Health and Medical Data Privacy Encryption Control System Based on Blockchain Technology.....	SUN Xu(188)

● Military Equipment Technology in Measurement and Control ●

Research on 3D Coordinate Measurement Method of Explosion Points based on PSD Sensors.....	NING Wei,CHU Wenbo,ZHANG Bin,ZHAO Donge(195)
Research on Transient High Temperature Testing Technology for Explosion of Thermostatic Explosives.....	MA Xujing,SUN Peng,ZHANG Junhu,LIU Ruichen,WANG Gao(204)

● Design and Application ●

Visual Landing Location Algorithm of Fixed-wing UAVs Based on LSD Detection.....	YAN Nan,LIU Xiaoxiong,MIAO Sheng,QIN Bin(211)
Design of Adaptive Gain Acquisition System Based on Magnetic Speed Signal.....	ZHANG Yongjie,MA Lin,DONG Haosen,KANG Liangwei,BIAN Ruiqing,LI Kai(218)
Design and Application of Hyper-Converged Ground System for Reusable Spacecraft.....	MA Yuxin,ZENG Fa,ZHANG Yaolei,DAI Jing,ZHANG Xiang,LIANG Jun(225)
Research on Obstacle Avoidance Path Planning for UAV Aerial Survey in Mountainous Areas Based on Rolling Speed Obstacle Method.....	HOU Chenxi(232)
Research on Seed Sorting Method Based on Lightweight Pyramidal Network.....	LI Weijie,SANG Xiaoting,LI Huanyu,WEI Pingjun,LI Xiao(239)
Research on Ultrasonic Imaging Noise Processing of Concrete Defects Based on VMD Method.....	ZHUANG Zheng,REN Hongwei,TIAN Bowen,ZHENG Yuancheng,LU Qian(247)
Research on Classification Method of Airborne Geophysical Remote Sensing Data Based on Self-Coding Neural Network.....	YU Liu(253)
Design of Driving Assistance System under Rain and Haze Weather Based on Machine Vision.....	HONG Ru,YU Lihan,DAI Anbang,Xie Yingjuan(259)
System Design of On-orbit Anti-SEU Based on XC7V690T.....	XIA Jun,ZHANG Jiawei,SUN Chen,ZHU Changwen,JIANG Yazhou(267)
Design of A Wideband Compound Antenna.....	WANG Liang,ZHAO Donghe,HAN Guodong(273)
Queue Stability-based Radio and Computing Resource Allocation Optimization in UAV-enabled Wireless Networks....	DANG Tian,WANG Peng,ZHAO Haishun,WANG Yu,DU Longhai(280)
Research on Multi-source Heterogeneous Data Governance Technology Based on Cloud Data Center.....	SUN Yu(286)
SEU Reinforcement Method for Multicore Processors Based on Dual Core Lockstep.....	GUO Qiang,WU Panfeng,XU Zhenlong(293)
Method and Validation for Pseudo-Satellite to Realize Tunnel Positioning.....	REN Kehan,WANG Zhenling,GUO Zheng(300)
Research on Underwater Dynamic Target Recognition and Location Method Based on Binocular Vision.....	LIU Jingbin,LIU Weidong,LI Le,ZHANG Shuaijun,ZHANG Wenbo,LI Yanli(306)
Development of Comprehensive Test Bench for Brake Controller of High-speed Maglev Trains.....	JIANG Shouliang,FU Shanqiang,YANG Yong,ZHU Tianliang,LIU Ning,WANG Xiaoqing(313)
Color Image Encryption Algorithm Based on Chaos System and Dynamic DNA Encoding.....	ZHAO Qiao,LI Bo,JIANG Rongrong(319)
Design of High-precision Positioning System for Moving Target Tracking Based on Ultra Wideband Technology.....	LI Qiang(327)
Target Azimuth Estimation Method Based On Beacon Guidance.....	LI Xinran,LI Xiaomin,SHI Yan,GU Shuming(334)

● Intelligent Instruments and Sensing Technology ●

Application of SCATS Based on ATML Standard in General Testing Equipment for Airborne Electronic Systems.....	WU Guobao,SONG Fan,ZENG Junhua,YOU Hongshun(340)
Design Method of On-chip Phase Compensator for Vibration Sensors Based on QPSO.....	HE Bin,LI Jian,MA Yixiang,PANG Runjia,ZHAN Yongzhong,ZOU Yu,LIU Ning(346)