

计算机测量与控制

2023年7月 第31卷 第7期

目次

● 测试与故障诊断 ●

集成电路综合自动测试系统软硬件接口设计·····冯建呈,闫丽琴,王占选,冯敏洁,周欣萍,孟旭(1)

基于改进灰狼优化算法的支持向量回归预测·····钟世云,张屹,戴杰,钱骏(8)

基于局部对比度和全卷积网络的小空间碎片检测·····陶江,曹云峰(15)

基于像素分配的文本检测方法研究·····吉训生,喻智,徐晓祥(21)

边缘计算环境下基于深度学习的DDoS检测·····田婷,虞延坤,牛新征(28)

基于移动端的非接触心率检测系统研究与设计·····李光发,胡国清,陈佳,蔡盛伟,付西敏(35)

基于多注意力和变分编码时序网络的发动机剩余使用寿命预测方法·····
·····杨凯旋,赵书健,魏佳隆,李良,苏本淦,刘扬,赵振(42)

基于STM32的靶机安控器自动检测系统研究·····石峰,李志宇,高艳辉,肖莉萍,朱梦杰(49)

基于轮廓重心法的蜂窝陶瓷堵塞检测及疏通系统研究·····朱文玉,王圣文,赵晨旭(57)

离散信号事件驱动的自动测试系统仿真验证方法与实现·····唐小峰(64)

基于卫星遥感及数据库同步的气象灾害监测预警系统设计·····袁翔(71)

集成电路综合自动测试系统硬件平台设计·····冯建呈,王占选,闫丽琴,殷晔,尉晓惠,王红宇,吴朝华(77)

面向液体运载火箭的测发训练系统设计·····李波,张海波,张鑫,罗大雷,张志良,徐昕(85)

基于YOLOv5和生成对抗网络的塑料标签缺陷检测·····庄昌乾,李璟文(91)

基于PU-Faster R-CNN的手机屏幕缺陷检测算法研究·····李伟朝,陈志豪,张颢,查云威(99)

一种脆弱线路缺陷的图像智能检测算法设计·····张晓峰,赵益山,黄楚伟(107)

● 控制技术 ●

具有执行器饱和的切换2-D系统事件触发控制·····骆茂森,黄世沛(112)

基于PLC技术的焊接机器人主从协调运动控制系统研究·····曹海兰,张媛(122)

基于树莓派的无接触智慧电梯设计·····董晨乐,杨延宁,朱扬(128)

无人机天钩回收纵向控制系统设计与实现·····张剑锋,王朋飞(136)

带状态约束的事件触发积分强化学习控制·····田奋铭,刘飞(143)

基于微分观测器的飞行模拟转台伺服系统非线性控制·····唐苗,赵慧,李祺,朱添麟,米俊宇,王斌(150)

● 设计与应用 ●

基于涡旋电磁波的大容量通信系统设计·····田震,张德智,李金龙,冯强(156)

基于边缘检测及RBF神经网络的遥感图像帧特征动态识别技术·····薛薇,张锋,凡静,王博,李娜(163)	163
基于IWOA算法求解并联冷机负荷分配问题·····于军琪,康智桓,荆竞,赵安军,陈时羽(169)	169
改进SegNet+CRF高分辨率遥感影像建筑物提取方法·····赵昊罡,崔红霞,张芳菲,顾海燕,穆潇莹(177)	177
基于Ca-GAN增强的机坪管制指令识别方法研究·····诸葛晶昌,胡宽博,杨新宇,吴军(184)	184
基于J2EE架构的民航信息基础架构云平台设计·····李泉,靳萌萌,聂晓杰(192)	192
一种改进残差深度网络的多目标分类技术·····陈超,吴斌(199)	199
基于有限元的方向舵分配机构延寿技术研究·····黄兴,刘文波(207)	207
国产平台下可靠文件传输软件的设计及实现·····虞炳文,龚建泽,丁思炜,王益,袁化宇(214)	214
基于鱼群算法的智能机器人全覆盖路径规划·····邓红,孙栩(222)	222
精密摆组件装配设备自标定方法·····张建昆,唐大林,任同群,曹润焮,吴晗,王晓东(228)	228
基于超高速线程并行处理技术的民机试飞数据预处理系统设计·····王加熙,刘涛,冯灿,高祥(234)	234
PHM仿真试验系统设计与应用·····孙丁(245)	245
基于多任务学习的输电线路小金具缺失推理加速算法·····程绳,葛雄,肖非,朱传刚,吴军,肖海涛,李嗣,楚江平,袁雨薇(251)	251
基于符号补偿的RISC-V处理器乘法器优化·····高嘉轩,刘鸿瑾,施博,张绍林,华更新(258)	258
基于全局最优的信息启发式Rollout测试序列生成算法·····王晓明,袁乾臣,王婧舒,李璠(265)	265
基于字符分割和LeNet-5网络的字符验证码识别·····张敬勋,张俊虎,赵宇波,李辉(271)	271
融合YOLO v3与改进ReXNet的手势识别方法研究·····魏小玉,焦良葆,刘子恒,汤博宇,孟琳(278)	278

● 试验与评价技术 ●

轨道电子地图基础数据建模与验证·····黄旭(284)	284
基于中心化Jaccard匹配的SD卡光学字符验证·····李天贺,吴静静,安伟(290)	290

● 智能仪器与传感技术 ●

基于深度学习的智能无人果蔬售卖系统·····吴晓凤,秦菁,刘子翔,徐浩然(298)	298
固态降水传感器现场核查装置技术研究·····赵建凯,重阳,张平贵(305)	305
基于非线性拟合的自动气象站风向传感器校准控制研究·····张敏,张剑,张朝明,冯亚,金拴根(313)	313

期刊基本参数: CN11-4762/TP*1993*m*16*300*zh+en*P*¥45*1000*45*2023-7

本期责任编辑: 唐德生

COMPUTER MEASUREMENT & CONTROL

Vol. 31 No. 7 July. 2023

Contents

• Test and Fault Diagnosis •

Software and Hardware Interface Design of Integrated Circuit Automatic Test System.....	
.....FENG Jiancheng,YAN Liqin,WANG Zhanxuan,FENG Minjie,ZHOU Xinping,MENG Xu(1)	
Support Vector Regression Prediction Based on Improved Grey Wolf Optimization Algorithm.....	
.....ZHONG Shiyun,ZHANG Yi,DAI Jie,QIAN Jun(8)	
Small Space Debris Detection Based on Local Contrast Measure and Fully Convolutional Network.....	
.....TAO Jiang,CAO Yunfeng(15)	
Research on Text Detection Method of Pixel-based Allocation.....	
.....JI Xunsheng,YU Zhi,XU Xiaoxiang(21)	
DDoS Detection Based on Deep Learning in Edge Computing Environment.....	
.....TIAN Ting,YU Yankun,NIU Xinzheng(28)	
Research and Design of Non-Contact Heart Rate Detection System Based on Mobile Terminal.....	
.....LI Guangfa,HU Guoqing,CHEN Jia,CAI Shengwei,FU Ximin(35)	
Prediction Method of Engine Remaining Useful Life Based on Multi-attention and Variational Coding Sequential Network.....	
.....YANG kaixuan,ZHAO Shujiang,WEI Jialong,LI Liang,SU Bengan,LIU Yang,ZHAO Zhen(42)	
Research on Automatic Detection System of Target Drone Security Controller Based on STM32.....	
.....SHI Feng,LI Zhiyu,GAO Yanhui,XIAO Liping,ZHU Mengjie(49)	
Research on Honeycomb Ceramic Plugging Detection and Dredging System Based on Contour Barycenter Method.....	
.....ZHU Wenyu,WANG Shengwen, ZHAO Chenxu(57)	
Simulation and Verification Method and Implementation for Discrete Signal Event-Driven Automatic Test Systems.....	
.....TANG Xiaofeng(64)	
Design of Meteorological Disaster Monitoring and Early Warning System Based on Satellite Remote Sensing and Database Synchronization.....	
.....YUAN Xiang(71)	
Hardware Platform Design of Integrated Circuit Automatic Test System.....	
.....FENG Jiancheng,WANG Zhanxuan,YAN Liqin,YIN Ye,WEI Xiaohui,WANG Hongyu,WU Zhaohua(77)	
Design of Test-Launch Training System for Liquid Launch Vehicle.....	
.....LI Bo,ZHANG Haibo,ZHANG Xin,LUO Dalei,ZHANG Zhiliang,XU Xin(85)	
Industrial Defect Detection of Plastic Labels Based on YOLOv5 and Generative Adversarial Networks.....	
.....ZHUANG Changqian,LI Jingwen(91)	
PU-Faster R-CNN-Based Defect Detection Model for Mobile Phone Screen.....	
.....LI Weichao,CHEN Zhihao,ZHANG Xie,ZHA Yunwei(99)	
Design of an Intelligent Image Detection Method for Vulnerable Line Defects.....	
.....ZHANG Xiaofeng,ZHAO Yishan,HUANG Chuwei(107)	

• Control Technology •

Event-triggered Control of Switched 2-D Systems with Actuator Saturation.....	
.....LUO Maosen,HUANG Shippei(112)	
Research on Master-slave Coordinated Motion Control System of Welding Robot Based on PLC Technology.....	
.....CAO Hailan,ZHANG Yuan(122)	
Design of Contactless Intelligent Elevator Based on Raspberry-Pi.....	
.....DONG Chenle,YANG Yanning,ZHU Yang(128)	
Design and Implement of Longitudinal Control System for UAV Skyhook Recovery.....	
.....ZHANG Jianfeng,WANG Pengfei(136)	
Event-triggered Integral Reinforcement Learning Control with State Constraints.....	
.....TIAN Fenming,LIU Fei(143)	
Nonlinear Control of Flight Simulator Turntable Servo System Based on Differential Observer.....	
.....TANG Miao,ZHAO Hui,LI Qi,ZHU Tianlin,MI Junyu,WANG Bin(150)	

● Design and Application ●

Design of Large Capacity Communication System Based on Vortex Electromagnetic Waves.....	.....
.....	TIAN Zhen,ZHANG Dezhi,LI Jinlong,FENG Qiang(156)
Dynamic Recognition Technology of Remote Sensing Image Frame Features Based on Edge Detection and RBF Neural Network.....	.....
.....	XUE Wei,ZHANG Feng,FAN Jing,WANG Bo,LI Na(163)
Solving the Load Distribution Problem of Parallel Chillers Based on IWOA Algorithm.....	.....
.....	YU Junqi,KANG Zhihuan,JING Jing,ZHAO Anjun,CHEN Shiyu(169)
Building Extraction from High-resolution Remote Sensing Images Based on Improved SegNet and CRF Method.....	.....
.....	ZHAO Haogang,CUI Hongxia,ZHANG Fangfei,GU Haiyan,MU Xiaoying(177)
Research on Enhanced Apron Control Command Recognition Method Based on Ca-GAN.....	.....
.....	ZHUGE Jingchang,HU Kuanbo,YANG Xinyu,WU Jun(184)
Design of Cloud Platform of Civil Aviation Information Basic Framework Based on J2EE Architecture.....	.....
.....	LI Quan,JIN Mengmeng,NIE Xiaojie(192)
A Multi-objective Classification Technique Based on Improved Residual Deep Network...CHEN Chao,WU Bin(199)	.....
Research on Life Extension Technology of Rudder Distribution Mechanism Based on Finite Element Method.....	.....
.....	HUANG Xing,LIU Wenbo(207)
Design and Implementation of Reliable File Transmission Software on Domestic Platform.....	.....
.....	YU Bingwen,GONG Jianze,DING Siwei,WANG Yi,YUAN Huayu(214)
Full Coverage Path Planning of Intelligent Robot Based on Fish Swarm Algorithm.....	.....
.....	DENG Hong,SUN Xu(222)
Self-calibration Method of Precision Pendulum Assembly Equipment.....	.....
.....	ZHANG Jiankun,TANG Dalin,REN Tongqun,CAO Rungu,WU Han,WANG Xiaodong(228)
Design of Civil Aircraft Test Flight Data Pre-processing System Based on Ultra-High-Speed Thread Parallel Processing Technology.....	.....
.....	WANG Jiayi,LIU Tao,FENG Can,GAO Xiang(234)
Design and Application on PHM Simulation Test System.....	.....
.....	SUN Ding(245)
Multi-task Learning Based Acceleration Algorithm for Missing Small Fittings in Transmission Line.....	.....
.....	CHENG Sheng,GE Xiong,XIAO Fei,ZHU Chuangang,WU Jun,XIAO Haitao,LI Si,CHU Jiangping,YUAN Yuwei(251)
Optimization of RISC-V Processor Multiplier Based on Sign Compensation.....	.....
.....	GAO Jiayuan,LIU Hongjin,SHI Bo,ZHANG Shaolin,HUA Gengxin(258)
Generation Method for Information Heuristic Rollout Test Sequence Based on Global Optimization.....	.....
.....	WANG Xiaoming,YUAN Qianchen,WANG Jingshu,LI Fan(265)
Character Verification Code Recognition Based on Character Segmentation and LeNet-5 Network.....	.....
.....	ZHANG Jingxun ZHANG Junhu,ZHAO Yubo,LI Hui(271)
Research on Gesture Recognition Method Based on Integrating YOLO v3 with Improved ReXNet.....	.....
.....	WEI Xiaoyu,JIAO Liangbao,LIU Ziheng,TANG Boyu,MENG Lin(278)

● Test & Evaluation Technology ●

Modeling and Verification of Basic Data of Track Electronic Map.....	.....
.....	HUANG Xu(284)
Verification of SD Card Optical Character Based on Centralized Jaccard Matching.....	.....
.....	LI Tianhe,WU Jingjing,AN Wei(290)

● Intelligent Instruments and Sensing Technology ●

Intelligent Unmanned Fruit and Vegetable Vending System Based on Deep Learning.....	.....
.....	WU Xiaofeng,QIN Jing,LIU Zixiang,XU Haoran(298)
Research on Solid-state Precipitation Sensor's Field Verification Device Technology.....	.....
.....	ZHAO Jiankai,CHONG Yang,ZHANG Pinggui(305)
Research on Calibration Control of Wind Direction Sensor in Automatic Weather Station Based on Nonlinear Fitting.....	.....
.....	ZHANG Min,ZHANG Jian,ZHANG Chaoming,FENG Ya,JIN Shuang(313)