

智能计算机与应用

第11卷 第1期

2021年1月

中国学术期刊（网络版）收录期刊  
中国核心期刊（遴选）数据库收录期刊  
中国科技论文统计源收录期刊  
RCCSE 中国学术期刊收录期刊

ISSN 2095-2163

# 智能计算机与应用

## INTELLIGENT COMPUTER AND APPLICATIONS



0 1 0 0 1 0 0 1  
0 1 0 0 1 1 1 0  
0 1 0 1 0 1 0 0  
0 1 0 0 0 1 0 1  
0 1 0 0 1 1 0 0  
0 1 0 0 1 1 0 0  
0 1 0 0 1 0 0 1  
0 1 0 0 0 1 1 1  
0 1 0 0 0 1 0 1  
0 1 0 0 1 1 1 0  
0 1 0 1 0 1 0 0  
0 0 1 0 0 0 0 0  
0 1 0 0 0 0 1 1  
0 1 0 0 1 1 1 1  
0 1 0 0 1 1 0 1  
0 1 0 1 0 0 0 0  
0 1 0 1 0 1 0 1  
0 1 0 1 0 1 0 0  
0 1 0 0 0 1 0 1  
0 1 0 1 0 0 1 0  
0 0 1 0 0 0 0 0  
0 1 0 0 0 0 0 1  
0 1 0 0 1 1 1 0  
0 1 0 0 0 1 0 0  
0 0 1 0 0 0 0 0  
0 1 0 0 0 0 0 1  
0 1 0 1 0 0 0 0  
0 1 0 1 0 0 0 0  
0 1 0 0 1 1 0 0  
0 1 0 0 1 0 0 1  
0 1 0 0 0 0 1 1  
0 1 0 0 0 0 0 1  
0 1 0 1 0 1 0 0  
0 1 0 0 1 0 0 1  
0 1 0 0 1 1 1 1  
0 1 0 0 1 1 1 0  
0 1 0 1 0 0 1 1

ISSN 2095-2163



9 772095 216215

万方数据

0 1 >



# 2021.1

第11卷 第1期 Vol.11 No.1

# 智能计算机与应用

第 11 卷 第 1 期

2021 年 1 月 1 日出版

## 目 次

### · 学术研究与应用 ·

基于 Transformer 的机器阅读理解对抗数据生成	范 场,刘秉权 ( 1 )
有向图上 $k$ 步可达查询处理	杜 明,林 铿,周军锋 ( 8 )
基于 fastText 的可视化作者归属模型	李 道,顾长贵,杨雷鑫,陆祺灵 ( 14 )
基于 LQR 算法的车道保持控制策略	施 卫,张 晨 ( 20 )
校园一卡通系统安全模型的构建及应用	吴文晖 ( 24 )
融入多特征的汉韩双语自动句对齐方法	刘晨阳,唐慧丰 ( 28 )
基于神经网络的红绿灯识别研究	詹 玉,吴钦木 ( 32 )
基于图卷积网络的服装评价信息分类问题的研究	姚婷婷,刘国华 ( 36 )
基于 openmv 的无人机定点降落视觉识别技术研究	吴文秀,关志全,汪 磊,郑军斌,阳璞琼 ( 41 )
一种基于空间文本信息流的分布式的发布订阅算法	周泽宁 ( 46 )
一种快速低秩的判别子字典学习算法及图像分类	赵 雅,王顺政,吕文涛,王成群 ( 51 )
移动送料机器人地图构建与运动控制研究	郭隆臻,徐定明,李子信 ( 55 )
基于云计算的云找回信息资讯平台的开发与实现	龔 莹,张 旭 ( 61 )

### · 系统开发与应用 ·

早期糖尿病风险预测模型的比较研究	王成武,晏峻峰 ( 64 )
基于 LTC699 的挖掘机实时工作监测系统	杨 艺,肖广兵 ( 69 )
时序数据挖掘的预处理研究综述	张友浩,赵 鸣,徐梦瑶,赵光晶 ( 74 )
基于粒子群算法的大件垃圾预约上门收运干扰管理研究	白晓燕 ( 79 )
深度学习算法在颈动脉超声图像斑块分割中的应用研究	沈冲冲,周小安,安相静,熊 煜,吴 涛 ( 84 )

一种视觉 SLAM 单目半稠密建图方法的实现	尚 任 ( 89 )
太阳能与空气能双热源热泵系统实验平台设计	朱宸威,蔡颖玲,林志坚 ( 94 )
朗缪尔探针在射频离子源中的扰动仿真研究	侯文琦,阳璞琼,刘 波,关志全 ( 98 )
基于 UDS 协议的汽车控制器刷写软件设计	唐恒飞,王效金 ( 102 )
基于编码-解码神经网络遥感图像语义分割应用研究	李紫薇,于晓鹏,丁婷婷 ( 106 )
基于 MSP430 的特种车辆云监控系统	杨靖莹,张 敏,孙 宁 ( 109 )
多品类生活垃圾收运的车辆路径优化问题研究	贾焙皓 ( 114 )
大服务设计与运行平台门户系统的设计与实现	刘钰霄,王裕鑫,徐汉川 ( 119 )
融入唇语识别技术提升人脸识别安全性的研究	钟逸晟,尹 芳,李嘉乾,李传师,侯耀辉 ( 123 )
联邦学习与数据安全研究综述	王壮壮,陈宏松,杨丽敏,陈丽芳 ( 126 )
 <b>· 专题设计与应用 ·</b> 	
高速铣削工件表面粗糙度蚁群-BP 神经网络建模	祁 翔,张心光,吕泽正 ( 130 )
基于云服务的钻井工程数据管理系统设计与实现	胡宏涛,吴 娟 ( 134 )
大件垃圾资源化与减量化管理的定价决策研究	赵曼曼 ( 137 )
基于矩阵二进制编码遗传算法的频繁项集挖掘	杜嘉伟,余 粟 ( 143 )
基于空间正则化约束的支持向量相关滤波器目标跟踪方法	李 峰,张宏志,左旺孟 ( 147 )
基于 GINet 的垃圾分类检测网络	吕泽正,祁 翔 ( 152 )
基于驾驶特性的 ACC 系统安全间距策略研究	施 卫,万广轩,刘 斌 ( 156 )
层叠微芯片封装翘曲行为优化分析	罗 成,吴文云,廖秋慧,黄 涛 ( 161 )
面向云计算环境下 Web 数据挖掘技术	曾展挺 ( 167 )
基于量子遗传的超参数自动调优算法的设计与实现	吴浩楠,高 宏 ( 170 )

# Intelligent Computer and Applications

Vol. 11 No. 1 2021-1-1

## CONTENTS

### · Academic research and application ·

Adversarial data generation for reading comprehension with Transformer .....	FAN Yang, LIU Bingquan ( 1 )
$k$ -hop reachability query processing on a directed graph .....	DU Ming, LIN Keng, ZHOU Junfeng ( 8 )
A visual model of authorship attribution based on fastText .....	LI Xiao, GU Changgui, YANG Leixin, LU Qiling ( 14 )
Lane keeping control strategy based on LQR .....	SHI Wei, ZHANG Chen ( 20 )
Construction and application of the security model of campus card system .....	WU Wenhui ( 24 )
Automatic sentence alignment method for Chinese-Korean bilinguals with multi-features .....	LIU Chenyang, TANG Hui Feng ( 28 )
Traffic light judgment design based on Neural Network .....	ZHAN Yu, WU Qinmu ( 32 )
Research on classification of apparel comment information based on Graph Convolutional Network .....	YAO Tingting, LIU Guohua ( 36 )
Research on UAV fixed-point landing visual recognition technology based on openmv .....	WU Wenxiu, GUAN Zhiquan, WANG Lei, ZHENG Junbin, YANG Puqiong ( 41 )
A distributed publish-subscribe algorithm based on spatio-text data stream .....	ZHOU Zening ( 46 )
A fast and low-rank discriminant sub-dictionary learning method for image classification .....	ZHAO Ya, WANG Shunzheng, LV Wentao, WANG Chengqun ( 51 )
Research on map construction and motion control of mobile feeding robot .....	GUO Longzhen, XU Dingming, LI Zixin ( 55 )
Development and implementation of cloud retrieval information platform .....	CUAN Ying, ZHANG Xu ( 61 )

### · Systematic development and application ·

Comparison of early diabetes risk prediction models .....	WANG Chengwu, YAN Junfeng ( 64 )
Real time monitoring system of excavator based on LTC699 .....	YANG Yi, XIAO Guangbing ( 69 )
Summary of research on preprocessing of time series data mining .....	ZHANG Youhao, ZHAO Ming, XU Mengyao, ZHAO Guangjing ( 74 )
Research on interference management of bulky waste reservation collection and transportation based on particle swarm algorithm .....	BAI Xiaoyan ( 79 )
Research on application of deep learning algorithm in carotid artery ultrasound image plaque segmentation .....	SHEN Chongchong, ZHOU Xiao'an, AN Xiangjing, XIONG Yu, WU Tao ( 84 )
A visual SLAM semi-dense mapping method on monocular camera ..... 万方数据	SHANG Ren ( 89 )

Design of comprehensive experimental platform for solar/air energy dual heat source heat pump system .....	ZHU Chenwei, CAI Yingling, LIN Zhijian ( 94 )
Research on disturbance of Langmuir probe in radio frequency ion source .....	HOU Wenqi, YANG Puqiong, LIU Bo, GUAN Zhiquan ( 98 )
Design of flash writing software for automobile controller based on UDS protocol .....	TANG Hengfei, WANG Xiaojin (102)
Remote sensing image semantic segmentation based on coding–decoding neural network .....	LI Ziwei, YU Xiaopeng, DING Tingting (106)
Special vehicle cloud monitoring system based on MSP430 .....	YANG Jingying, ZHANG Min, SUN Ning (109)
Research on vehicle route optimization for collection and transportation of multi–category domestic waste .....	JIA Beihao (114)
Design and implementation of portal system for big–service designing and executing platform .....	LIU Yuxiao, WANG Yuxin, XU Hanchuan (119)
Research on integrating lip language recognition technology to improve the security of face recognition .....	ZHONG Yisheng, YIN Fang, LI Jiaqian, LI Chuanshi, HOU Yaohui (123)
Review of federal learning and data security .....	WANG Zhuangzhuang, CHEN Hongsong, YANG Limin, CHEN Lifang (126)
<b>• Specialized design and application •</b>	
Modeling of high speed milling workpiece by surface roughness method .....	QI Xiang, ZHANG Xinguang, LV Zezheng (130)
Design and implementation of drilling engineering data management system based on cloud service .....	HU Hongtao, WU Juan (134)
Research on the pricing decision of resource recovery and reduction management of bulky waste .....	ZHAO Manman (137)
Frequent itemsets mining based on matrix binary code Genetic Algorithm .....	DU Jiawei, YU Su (143)
Spatially regularized support correlation filters for object tracking .....	LI Feng, ZHANG Hongzhi, ZUO Wangmeng (147)
A garbage classification and detection method based on GINet .....	LV Zezheng, QI Xiang (152)
Driving safety spacing strategy of ACC system based on driving characteristics .....	SHI Wei, WAN Guangxuan, LIU Bin (156)
Warpage optimization analysis of chip packaging process .....	LUO Cheng, WU Wenyun, LIAO Qihui, HUANG Tao (161)
Web data mining technology in cloud computing environment .....	ZENG Zhanting (167)
Design and implementation of an automatic hyper–parameter tuning algorithm based on quantum genetics .....	WU Haonan, GAO Hong (170)