

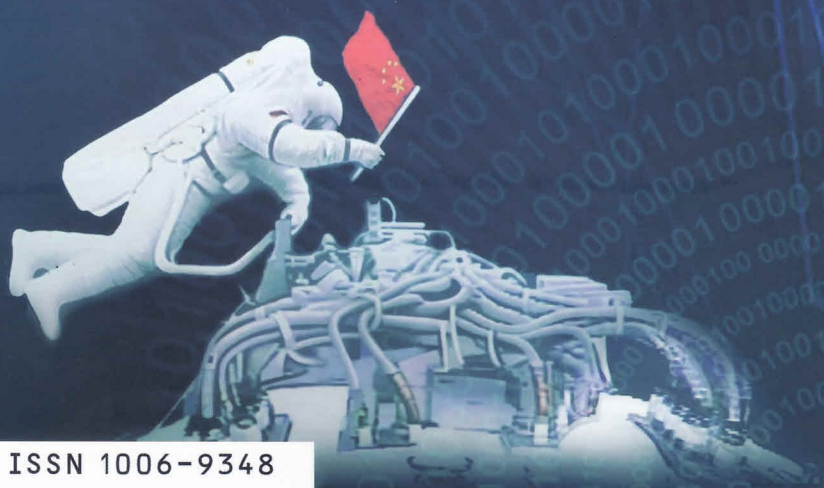


中文核心期刊
中国计算机用户协会会刊

ISSN 1006-9348

计算机仿真

Computer Simulation



ISSN 1006-9348



9 771006 934033



9 >

9
2023

目 次

航空航天领域仿真

无人飞艇纵向 L1 自适应控制	黄 金,陈纪旸,霍江航,马晓静(1)
基于 FGO 的 GNSS/INS 组合导航完好性监测算法	兰晓伟,许承东,赵 靖*(7)
一种基于灰色理论的制导系统评估方法研究	李迎博,谭黎立,梁 卓,胡 晓(13)
基于神经网络的飞机供水系统故障预测研究	吴 梅,陈思远,李超群(18)
电动飞机飞行品质快速评估与验证	张 磊,杨凤田,周文雅,黄 俊(23)
舰载基础能力训练动感模拟器设计与实现	周晓光,刘剑超,俞艺涵,穆 阳(29)
基于 ESO 的高超声速飞行器姿态鲁棒控制	李大华,张紫依,吉月辉,刘俊杰*(33)
基于垂直航迹的冲突解脱模型研究	赵浩迪,朱代武,刘 豪(37)
基于粒子群算法的无人机灭火路径规划仿真	李锐君,董素鸽(43)

能源领域仿真

基于分区匹配和 MBAS-RFR 的定位算法	陈平安,孙运全,张超虎(49)
液化天然气运输过程瞬态泄漏扩散仿真	李迺红,朱玉琴(54)
基于多源异构数据融合的短期电力负荷预测	宋晓华,汪 鹏,牛东晓(59)
改进 SPWM 脉冲技术的多电平逆变器功率控制仿真	孙树强,王来东(66)
超深井油管特殊螺纹密封性能评价研究	于 浩,王 昊*,练章华,丁亮亮(70)
改进加速因子的微电网运行模式切换控制仿真	张 晔,杜春晖*,陈学永,张晓峰(76)
基于改进 PP-YOLOv2 的红外图像电力设备检测	高 伟,郭美青,张兴忠,刘 军(81)

交通体系与工具仿真

车辆驾驶环形轨迹人机交互导航仿真模型研究	崔俊杰,张卫正(88)
多仓库物流周期联合配送粒子群择优算法仿真	龚艳茹,马立坤(92)
冲击载荷下有砟轨道动力学响应仿真研究	关会会,姜 毅,胡 东,苏子超(97)
基于改进 MMA-Net 的车道线检测算法	江 漫,张 乾,朱 瑜,张宇航(102)
基于载波高斯包络模型的精密单点定位保护级	王吉涛,许承东,赵 靖,兰晓伟(108)
钢桥桥面细小裂缝图像特征动态识别仿真	谢君利,郭魏源,张春生(115)
顾及路口压力的 A2C 交通信号调控	张 蕾,郭全盛,林建新,李建武*(120)
冲击载荷作用下高速机械传动误差测试仿真	周慧珍,王光泰(125)
基于经验模态分解的汽车轮速信号去噪算法	朱文燕,曾建谋(129)
面向高端装备智能研制的流场仿真平台开发	张欣超,彭 飞*,张洪辉(134)
结合卷积和自注意力机制的交通标志识别模型	周 峰,刘云翔,石艳娇(140)

信息仿真

基于轻量化 MU-Net 网络的混凝土缺陷分割	陈智丽,张士缘,王 冰,李宇鹏(146)
基于深度学习的紫外成像仪的图像配准与融合	崔宝京,程晓荣(151)
一种基于多天线测向的欺骗干扰抑制方法	范广伟,王永杰,王 飞(158)
遥感影像融合下自然资源地类特征提取仿真	蒙友波,廖艳梅,覃 锋,王晓红*(162)
深度学习下模糊高光谱图像复原数学模型仿真	苏乐辉(167)
电子通信低时延 IPSEC 安全加密传输仿真	覃 凤,任宝平,雷久淮*(171)
多物体遮挡下基于深度学习的目标跟踪仿真	王莉君*,唐 骞,李 鹏(176)
基于群智感知计算的多终端引擎任务分配仿真	王 琳,何 春(180)
基于顶点轮廓的鲁棒性抗前景干扰稳像算法	尹丽华,康 亮,刘士建(184)
基于 NALTDp 的肝脏 CT 图像分类	张惠惠,黄炜嘉,张正言,李 锋*(191)
基于 3D 模型的景观建筑物全景纹理映射仿真	张秋敏,曹 治(197)
结合多模态和注意力机制的人脸活体检测算法	周 航,蔡茂国,唐剑兰,徐 翔(202)
面向藏文临床病历的医学实体识别研究	卓玛措,桑杰端珠,才让加,羊毛卓么(208)
基于 Retina-Face 的人眼关键点检测算法研究	陈 亮,郑 伟(213)
基于相关滤波快速定位搜索水面目标跟踪方法	管凤旭,唐世文,丛浩东,胡秀武(217)
基于混合注意力机制的视频序列表情识别	李金海,李 俊(223)
基于局部色彩传递的多帧影视图像扭曲校正	刘珈吟,金 凤(228)
基于能量跨层优化的 MAC 协商策略	徐轩轩,杨彦红,曹少中(233)
考虑 Gabor 小波特征的 LBF1 识别仿真	王娟娟,宋三华,杜云明(237)

教学仿真

基于面部多特征融合的学生网课疲劳检测研究	黄丽凤,陈建华(242)
----------------------------	----------------

基于大数据的学生情绪异常波动风险评估仿真	何穆彬,万振凯*(247)
----------------------------	---------------

仿真应用研究

基于 CFD 仿真的冷却空调系统气流组织数值模拟	董凡,成永刚(251)
基于 DebtRank 算法的银行系统性风险仿真研究	范宏,庞琮远(256)
中子测量用慢化体及热中子转换层厚度优化	黄广伟,吴坤,周春芝*,张逸韵*(262)
Chebyshev-Padé 型极点降阶及传输线方程应用	刘萌,苗真,蒋耀林(268)
基于多目标调度的嵌入式可复用群控系统优化	蔚晨月,李雪莲(274)
基于多约束算法的建筑空间利用率优化仿真	肖晓芳,朱国华,刘丽雅(278)
建筑物地基二次沉降变形位移智能检测仿真	熊黎黎,贾璐(282)
北京生态文明建设有效路径的动力学仿真研究	杨艳红,董欣雨,曹海青,姚翠友*(286)
SAR 图像增强的建筑基坑底面下沉风险监测仿真	赵利芬,常晓通(291)
基于自适应邻域粒子群算法的 γ 谱定量分析	李林祥,曾国强,杨小峰,周春芝*(296)
自动电压调节系统的自抗扰控制	王梓鉴,谭文,邹雅蓉,靳兴康(303)
液滴撞击非疏水性运动壁面的分析与研究	夏悦然,刘彩霞*,张静,田颖哲(310)
基于 ANSYS 的耐热钢高温磨损性能研究	新巴雅尔,辛英臣,孙思意,卜凡(318)

仿真方法与算法

基于 Vanilla 算法的数字化资源在线推荐算法	程娟娟,宋彪,李微(324)
云计算虚拟资源差分进化分配方法仿真	高杨,马贺男,刘晓菲(328)
求解 TSP 问题的改进融合遗传灰狼优化算法	刘海龙,雷斌,王苑莹,柴获(333)
基于 LSTM 的 ZigBee 网络中通信信号识别算法	刘洪笑,向勉,谭建军,朱黎(339)
FPGA 中单指数核信号梯形形成形算法优化与实现	祝翔,何剑锋*,曾家骏,袁兆林(344)
基于神经网络的 OFDM 系统信道估计方法	陈佳勇,徐湛,职如昕,田露(350)
翻筋斗的改进麻雀搜索算法	欧阳城添,黄祖威,朱东林,闫少强(355)
基于精英反向学习和对数螺旋的 HHO 算法	唐剑兰,蔡茂国,徐翔(364)
海量文献数据无线传感 DV-Hop 定位算法设计	王超,宋荷庆(371)
融合蝠鲼旋风式觅食策略的灰狼特征选择算法	杨舒云,刘宏志,李海生(375)

仿真软件

软件可靠性耦合度量的测试用例约简优化	刘好斌,梁旗军,肖鹏(381)
--------------------------	-----------------

仿真网络化

开放网络中分布式隐私数据主动防御仿真分析	窦萌萌,程小辉(385)
药物靶标超网络建模及实证分析	胡枫,白立冰,朱祺航,刘闯(390)
模拟分解下的无线局域网室内全覆盖通信方法	冀松,刘永立*,卞雪梅(396)
社交网络中用户签到行为位置泄露风险预警	王晓丹,王子乔,金山海*(401)
网络实验室虚假数据注入攻击深度识别仿真	魏枫林,王凯(406)
开放实验室内部网络非法入侵准确检测仿真	吴延慧,杨凌凤(411)
启发式规划算法下云边缘节点均衡调度仿真	杨裴裴,黄燕,叶海智(416)
基于多任务深度学习的 WSN 级联故障识别研究	邱劲,吴宏杰(420)
基于窄带物联网的信息压缩存储方法	桑振,胡建(426)

仿真智能化

改进人工势场法机器人避障路径规划研究	高飞翔,郝万君,吴宇,孙诚(431)
基于 HJI 理论的移动机器人神经网络自适应控制	刘鑫,陈昌忠,罗洪,孙增诚(437)
基于变网格 A* 算法的机器人驾驶路径规划	任荣伦,卫沅,周志刚,李浩然(443)

仿真虚拟化

基于工业 AR 虚拟仿真的卷包装备人机交互应用	沈毅,周睿,李诚,吴罡(449)
基于混合层次包围盒的快速碰撞检测算法	林菲,邹玲,张聪(454)

仿真服务化

基于群体智能算法的混合属性大数据聚类仿真	古险峰,汤永利(458)
基于 PS 的电子病历管理模型的构建与推理	方婷,王晓华*,杨敏,冉梅梅(462)
最小二乘直线拟合的含噪声数据检测方法仿真	胡萍,崔建涛(467)
基于 GRU-CNN 模型的云南地区短期气温预测	刘家辉,梅平,刘长征,刘剑南(472)
多源异构数据边缘融合信息化监测仿真	盛丽华,沈晖(477)
基于 3D 关联规则深度学习的异构遥感数据检测	覃伟荣,劳燕玲(482)
基于 BIM 模型的公共建筑全寿命节能评估仿真	王蒙,姚彦娜*,张玉芝(487)
基于深度迁移的有向加权网络节点重叠检测	王小红,刘琴(492)
非显著特征数据挖掘中 SOM 聚类算法的优化	许丽娟,叶仕通(497)
基于改进 YOLOv4 的地板缺陷检测算法	陈浩栋,张弛,孙伟波,李红军(502)
电梯实验台的陪试电机加载算法研究与仿真	刘成源,韩震宇(509)
高压水泵主轴承压疲劳失效数值仿真	张孝元,王孝国,傅建平,马艳娥(514)
基于推荐区域的民国纸币冠字号码检测	杜欣,王笑梅*,沈成龙,王佳婧(519)

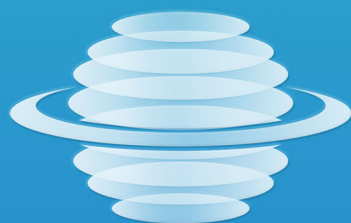
CONTENTS

Longitudinal Adaptive Control of Unmanned Airship	HUANG Jin, CHEN Ji-yang, et, al (1)
Integrity Monitoring for GNSS/INS Integration Based on Factor Graph Optimization	LAN Xiao-wei, XU Cheng-dong, et, al (7)
Research on Evaluation Method of Guidance System Based on Grey Theory	LI Ying-bo, TAN Li-li, et, al (13)
Fault Prediction for Aircraft Water Supply System Based on Neural Network	WU Mei, CHEN Si-yuan, et, al (18)
Rapid Evaluation and Verification of Flight Qualities of Electric Aircraft	ZHANG Lei, YANG Feng-tian, et, al (23)
Design and Implementation of a Dynamic Simulator for Shipborne Basic Ability Training	(ZHOU Xiao-guang, LIU Jian-chao, et, al (29)
Robust Control of Hypersonic Flight Vehicle Based On Extended State Observer	LI Da-hua, ZHANG Zi-yi, et, al (33)
Research on Conflict Resolution Model Based on Vertical Trajectory	ZHAO Hao-di, ZHU Dai-wu, et, al (37)
Simulation of UAV Fire Extinguishing Path Planning Based on Particle Swarm Optimization Algorithm	LI Rui-jun, DONG Su-ge (43)
Positioning Algorithm Based on Partition Matching and MBAS-RFR	CHEN Ping-an, SUN Yun-quan, et, al (49)
Simulation of Transient Leakage Diffusion in LNG Transportation Process	LI Ya-hong, ZHU Yu-qin (54)
Short-Term Power Load Forecasting Based on Heterogeneous Data from Multiple Sources	SONG Xiao-hua, WANG Peng, et, al (59)
Simulation of Power Control for Multilevel Inverters with Improved SPWM Pulse Technology	SUN Shu-qiang, WANG Lai-dong (66)
Research on Evaluation of Sealing Performance of Premium Threads for Ultra-Deep Well Tubing	YU Hao, WANG Hao *, et, al (70)
Simulation of Micro Grid Operation Mode Switching Control with Improved Acceleration Factor	ZHANG Ye, DU Chun-hui *, et, al (76)
Infrared Image Power Equipment Detection Based on Improved PP-YOLOv2	GAO Wei, GUO Mei-qing, et, al (81)
Research on Human-Computer Interactive Navigation Simulation Model of Vehicle Driving Circular Trajectory	CUi Jun-jie, ZHANG Wei-zheng (88)
Simulation of Particle Swarm Optimization Algorithm for Multi-Warehouse Logistics Cycle Joint Distribution	GONG Yan-ru, MA Li-kun (92)
Simulation Research on Dynamic Response of Ballasted Track under Impact Load	GUAN Hui-hui, JIANG Yi, et, al (97)
Lane Detection Algorithm Based on Improved MMA-Net	JIANG Man, ZHANG Qian, et, al (102)
Protection Level of Precise Point Positioning Based on Carrier Gaussian Envelop Model	WANG Ji-tao, XU Cheng-dong, et, al (108)
Dynamic Recognition Simulation of Image Features of Small Cracks on Steel Bridge Deck	XIE Jun-li, GUO Wei-yuan, et, al (115)
Multi-Agent Actor-Critic Algorithm Considering Intersection Pressure	ZHANG Lei, GUO Quan-sheng, et, al (120)
Testing and Simulation of Transmission Error of High Speed Mechanical under Impact Load	ZHOU Hui-zhen, WANG Guang-tai (125)
Denoising Algorithm of Vehicle Wheel Speed Signal Based on Empirical Mode Decomposition	ZHU Wen-yan, ZENG Jian-mou (129)
Development of a Flow Field Simulation Platform for Intelligent Development of High end Equipment	ZHANG Xin-chao, PENG Fei *, et, al (134)
Traffic Sign Recognition Model Combining Convolution and Self-Attention Mechanism	ZHOU Feng, LIU Yun-xiang, et, al (140)
Concrete Defect Segmentation Based on lightweight MU-Net Network	CHEN Zhi-li, ZHANG Shi-yuan, et, al (146)
Image Registration and Fusion of Ultraviolet Imager Based on Deep Learning	CUI Bao-jing, CHENG Xiao-rong (151)
A Method of Suppressing Spoofing Based on DOA	FAN Guang-wei, WANG Yong-jie, et, al (158)
Simulation of Natural Resource Land Feature Extraction Based on Remote Sensing Image Fusion	MENG You-bo, LIAO Yan-mei, et, al (162)
Simulation of Fuzzy Hyperspectral Image Restoration Mathematical Model under Deep Learning	SU Le-hui (167)
Simulation of IPSEC Secure Encrypted Transmission with Low Delay in Electronic Communications	QIN Feng, REN Bao-ping, et, al (171)
Target Tracking Simulation Based on Deep Learning under Multi-Object Occlusion	WANG Li-jun *, TANG Sai, et, al (176)
Simulation of Multi-Terminal Engine Task Allocation Based on Swarm Intelligence Aware Computing	WANG Lin, HE Chun (180)
Robust Image Stabilization Method Against Foreground Interference Based on Vertex Contour	YIN Li-hua, KANG Liang, et, al (184)
Liver CT Image Classification Based on Neighborhood Average Local Ternary Direction Pattern	ZHANG Hui-hui, HUANG Wei-jia, et, al (191)
Simulation of Panoramic Texture Mapping of Landscape Buildings Based on 3D Model	ZHANG Qiu-min, CAO Zhi (197)
Face Anti-Spoofing Algorithm Combined with Multi-Modal and Attention Mechanisms	ZHOU Hang, CAI Mao-guo, et, al (202)
Research on Medical Entity Recognition for Tibetan Clinical Medical Records	ZHUO Ma-cuo, SANGJIE Duan-zhu, et, al (208)
Research on Human Eye Key Point Detection Algorithm Based on Retina Face	CHEN Liang, ZHENG Wei (213)
Water Surface Target Tracking Method for Fast Positioning and Searching Based on Correlation Filtering	GUAN Feng-xu, TANG Shi-wen, et, al (217)
Facial Expression Recognition in Video Sequences Based on Hybrid Attention Mechanism	LI Jin-hai, LI Jun (223)
Distortion Correction of Multi Frame Video Image Based on Local Color Transfer	LIU Jia-yin, JIN Feng (228)
MAC Negotiation Strategy Based on Energy Cross-Layer Optimization	XU Xuan-xuan, YANG Yan-hong, et, al (233)
Simulation of Local Blur Face Image Recognition Considering Gabor Wavelet Features	WANG Juan-juan, SONG San-hua, et, al (237)
Research on Fatigue Detection of Students Online Course Based on Facial Multi-Feature Fusion	HUANG Li-feng, CHEN Jian-hua (242)
Simulation of Risk Assessment of Abnormal Emotional Fluctuation of Students Based on Big Data	HE Mu-bin, WAN Zhen-kai * (247)
Numerical Simulation of Air Distribution in Cooling Air Conditioning System Based on CFD Simulation	DONG Fan, CHENG Yong-gang (251)

Research on Bank Systemic Risk Simulation Based on DebtRank algorithm	FAN Hong,PANG Cong-yuan (256)
Optimization of Moderator and Thermal Neutron Converter's Thickness for Neutron Measurements	HUANG Guang-wei,WU Kun,et, al (262)
Chebyshev-Padé Type Pole Order Reduction and Application of Transmission Line Equation	LIU Meng,MIAO Zhen,et, al (268)
Optimization of Embedded Reusable Group Control System Based on Multi-Objective Scheduling	WEI Chen-yue,LI Xue-lian (274)
Optimization Simulation of Building Space Utilization Based on Multi Constraint Algorithm	XIAO Xiao-fang,ZHU Guo-hua,et, al (278)
Simulation of Intelligent Detection of Secondary Settlement Deformation and Displacement of Building Foundation	XIONG Li-li,JIA Lu (282)
Dynamic Simulation Study on Effective Path of Ecological Civilization Construction in Beijing	YANG Yan-hong,DONG Xin-yu,et, al (286)
Simulation of SAR Image Enhanced Risk Monitoring for Bottom Subsidence of Building Foundation Pit	ZHAO Li-fen,CHANG Xiao-tong (291)
Quantitative Analysis of γ Spectrum Based on Adaptive Neighborhood Particle Swarm Optimization	LI Lin-xiang,ZENG Guo-qiang,et, al (296)
Active Disturbance Rejection Control for Automatic Voltage Regulator System	WANG Zi-jian,TAN Wen,et, al (303)
Analysis of Impact of Liquid Droplets on Non-Hydrophobic Moving Wall	XIA Yue-ran,LIU Cai-xia,et, al (310)
Research on High Temperature Wear Performance of Heat-Resistant Steel Based on ANSYS	XINBA Yaer,XIN Ying-chen,et, al (318)
The Online Recommendation Algorithm of Digital Resources Based on Vanilla Algorithm	CHENG Juan-juan,SONG Biao,et, al (324)
Simulation of Differential Evolutionary Allocation of Virtual Resources in Cloud Computing	GAO Yang,MA He-nan,et, al (328)
Improved Fused Genetic Grey Wolf Optimization Algorithm for Solving TSP	LIU Hai-long,LEI Bin,et, al (333)
Communication Signal Recognition Algorithm in ZigBee Network Based on Long and Short-Term Memory	LIU Hong-xian,XIANG Mian,et, al (339)
Optimization and Implementation of Trapezoidal Shaping Algorithm for Single Exponential Core Signals in FPGA	ZHU Xiang,HE Jian-feng *,et, al (344)
Channel Estimation Method for OFDM System Based on Neural Network	CHEN Jia-yong,XU Zhan,et, al (350)
Somersault Improved Sparrow Search Algorithm	OUYANG Cheng-tian,HUANG Zu-wei,et, al (355)
Harris Hawks Optimization Algorithm Based on Elite Opposition Learning and Logarithmic Spiral	TANG Jian-lan,CAI Mao-guo,et, al (364)
Design of DV-Hop Positioning Algorithm for Wireless Sensing of Massive Literature Data	WANG Chao,SONG He-qing (371)
A Grey Wolf Feature Selection Algorithm Incorporating a Whirlwind Foraging Strategy for Manta Rays	YANG Shu-yun,LIU Hong-zhi,et, al (375)
Optimization of Test Case Reduction for Software Reliability Coupling Measurement	LIU Hao-bin,LIANG Qi-jun,et, al (381)
Simulation Analysis of Distributed Privacy Data In Open Network	DOU Meng-meng,CHENG Xiao-hui (385)
Modeling and Empirical Analysis of Drug Target Hypernetwork Models	HU Feng,BAI Li-bing,et, al (390)
Wireless LAN Indoor Full Coverage Communication Method under Analog Decomposition	JI Song,LIU Yong-li *,et, al (396)
Risk Warning for Location Leakage of User Check-in Behavior in Social Networks	WANG Xiao-dan,WANG Zi-qiao,et, al (401)
In-Depth Identification and Simulation of False Data Injection Attacks in Network Laboratories	WEI Feng-lin,WANG Kai (406)
Accurate Detection and Simulation of Illegal Intrusion in Open Laboratory Internal Network	WU Yan-hui,YANG Ling-feng (411)
Simulation of Cloud Edge Node Equilibrium Scheduling Based on Heuristic Programming Algorithm	YANG Pei-pei,HUANG Yan,et, al (416)
Cascaded Fault Identification in Wireless Sensor Networks Based on Multi-Task Deep Learning	QIU Jing,WU Hong-jie (420)
Information Compression Storage Method Based on Narrowband Internet of Things	SANG Zhen,HU Jian (426)
Research on Robot Obstacle Avoidance Path Planning Based on Improved Artificial Potential Field Method	GAO Fei-xiang,HAO Wan-jun,et, al (431)
Neural Network Adaptive Control of Mobile Robot Based on HJI Theory	LIU Xin,CHENG Chang-zhong,et, al (437)
Path Planning of Robot Driving Based on Variable Grid A * Algorithm	REN Rong-lun,WEI Yuan,et, al (443)
Human-Computer Interaction Application of Packaging Equipment Based on Industrial AR Virtual Simulation	SHEN Yi,ZHOU Rui,et, al (449)
Fast Collision Detection Algorithm Based on Hybrid Hierarchical Bounding Box	LING Fei,ZOU Ling,et, al (454)
Simulation of Mixed Attribute Big Data Clustering Based on Swarm Intelligence Algorithm	GU Xian-feng ,TANG yong-li (458)
Construction and Reasoning of Electronic Medical Records Management Model Based on Polychromatic Sets	FANG Ting,WANG Xiao-hua *,et, al (462)
Simulation of Noise Data Detection Method Based on Least Square Line Fitting	HU Ping,CUI Jian-tao (467)
Short-Term Temperature Prediction in Yunnan Region Based on GRU-CNN Model	LIU Jia-hui,MEI Ping,et, al (472)
Information Monitoring Simulation for Edge Fusion of Multi-Source Heterogeneous Data	SHENG Li-hua,SHEN Hui (477)
Detection of Heterogeneous Remote Sensing Data Based on Deep Learning of 3D Association Rules	QIN Wei-rong,LAO Yan-ling (482)
Simulation of Life Cycle Energy Saving Evaluation of Public Buildings Based on BIM Model	WANG Meng,YAO Yan-na *,et, al (487)
Node Overlap Detection in Directed Weighted Network Based on Deep Migration	WANG Xiao-hong,LIU Qin (492)
Optimization of SOM Neural Network Clustering algorithm In Non Significant Features Data Mining	XU Li-juan,YE Shi-tong (497)
Floor Defect Detection Algorithm Based on Improved YOLOv4	CHEN Hao-dong,ZHANG Chi,et, al (502)
Research and Simulation of Loading Algorithm for Accompanying Motor of Elevator Test Stand	LIU Cheng-yuan,HAN Zhen-yu (509)
Numerical Simulation of Bearing Fatigue Failure of High Pressure Water Pump Spindle	ZHANG Xiao-yuan,WANG Xiao-guo,et, al (514)
Detection of Crown Number of Republic of China Banknotes Based on Recommended Regions	DU Xin,WANG Xiao-mei *,et, al (519)

上海 | 2023.09
Shanghai | 20-22

上海颖奕皇冠假日酒店



WMC2023

第二届世界元宇宙大会

THE 2th WORLD METAVERSE CONFERENCE

由中国仿真学会、中国指挥与控制学会和北京理工大学共同主办的“2023第二届世界元宇宙大会”定于2023年9月20日至22日在上海安亭举行。本届大会以“虚实相生、产业赋能”为主题，聚焦元宇宙关键技术发展的关键共性问题，探讨元宇宙产业发展趋势和挑战，推进元宇宙关键技术和创新应用场景，搭建元宇宙技术创新合作、交流和展示平台，推动元宇宙产业健康有序发展。

平行论坛

汽车元宇宙论坛

游戏元宇宙论坛

医疗元宇宙论坛

数字人论坛

文旅元宇宙论坛

教育元宇宙论坛

人机交互论坛

算力网络论坛

组织机构

主办单位

中国仿真学会
中国指挥与控制学会
北京理工大学

承办单位

上海市嘉定区安亭镇人民政府
中国仿真学会元宇宙专业委员会
北京洞见未来会展有限公司



2023 世界元宇宙大会组委会

负责人：王浩

联系方式：18500816881

WORLD METAVERSE CONFERENCE