

# **International Conference on Electronics and Devices, Computational Science (ICEDCS 2025)**

IET Conference Publications 945

Marseille, France and Online  
22-24 September 2025

Volume 1 of 2

ISBN: 979-8-3313-3295-2

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2025) by the Institution of Engineering and Technology  
All rights reserved.

Printed with permission by Curran Associates, Inc. (2026)

For permission requests, please contact the Institution of Engineering and Technology  
at the address below.

Institution of Engineering and Technology  
Futures Place, Kings Way  
Stevenage, Hertfordshire  
U.K. SG1 2UA  
United Kingdom

Phone: +44 (0)1438 313311

[www.theiet.org](http://www.theiet.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## VOLUME 1

Application and Performance Analysis of Multi-Objective Optimization Algorithm in Mechanical Manufacturing System.....	1
<i>Chunyan Huo, Tianshu Li, Xiaolan Liu, Juan Ding, Fanju Zeng</i>	
Structural Force Analysis and Design of Green New Building Materials Based on Topology Optimization Algorithm.....	6
<i>Bo Liu, Ning Liu, Li Chen, Bo Yi</i>	
Method of Tobacco Volume Measurement Based on Image Segmentation and Feature Extraction and Its Application.....	13
<i>Yonggang Liu, Hongliang Zhang, Ziyu Liu</i>	
Research on Multimodal Interaction of Deep Learning-Based Educational Robots in English Listening and Speaking Training .....	18
<i>Yongli Han</i>	
Deep Learning-Based Technological Innovation for Special Effects Generation and Image Processing in Film and Television.....	24
<i>Yu Wang, Fei Yan, Cheng Duan</i>	
Research on Stylization and Emotion Transfer Effect of Animated Images Based on Generative Adversarial Networks.....	30
<i>Yu Wang, Cheng Duan, Fei Yan</i>	
Analysis of the Influence of Organizational Network Structure on Information Flow and Decision-Making Behavior Based on Graph Algorithm .....	36
<i>Peiqi Xu</i>	
Study on High Performance Calculation Model of Seismic Wave Propagation Simulation in Civil Engineering .....	41
<i>Yuliang Chi, Chao Zhang, Yunpeng Gao, Zhengyun Zhao</i>	
Distributed Data Storage and Efficient Query Optimization Method for Tobacco Manufacturing Information System .....	47
<i>Bailin Pan, Xiaoshuang Xu, Huan Le, Xin Xu</i>	
Design of Financial Data Transparency and Audit Automation System Incorporating Blockchain Technology .....	54
<i>Jiarui Gou</i>	
Research on Economic Data Security and Privacy Protection in Cloud Computing Environment .....	60
<i>Wu Kun</i>	
Research on Automobile Welding Quality Inspection and Defect Identification Algorithm Based on Deep Learning .....	66
<i>Kunpeng Zhao, Dan Hou, Juan Ding, Yan Wang, Yuhang Teng</i>	
Numerical Simulation and Parameter Sensitivity Analysis of River Sediment Movement Based on Multi-Objective Optimization .....	71
<i>Wensheng Ge</i>	

Construction of Efficient Numerical Calculation and Analysis Model for Large-Scale Data Sets.....	77
<i>Wei Ge</i>	
Optimization and Application of Deep Learning Algorithm in Library Information Retrieval System.....	82
<i>Jinghan Zhang, Wen Ma, Ying Li</i>	
Algorithm Optimization and Application Analysis in Mineral Resource Exploration .....	87
<i>Yuxue Bao</i>	
Computer Model for Mechanical Properties of Lead-Zinc Tailings Sand Concrete.....	91
<i>Shuangyang Cai, Shun Li</i>	
Exploration of Convolutional Neural Networks in Automated Animation Scene Production.....	95
<i>Ming Chang</i>	
Research on Big Data Processing and Analysis Technology in Automation Systems.....	100
<i>Bohan Ma, Haipeng Luan</i>	
Reliability Evaluation and Optimization Design of Cutter Head Structure of Shield Machine Based on Algorithm.....	105
<i>Bo Ning</i>	
Physical Constraint-Based Animation Simulation and Optimization Algorithm in Computer Graphics .....	110
<i>Feng Wu, Rui Ma, Ruoyan Wan</i>	
Construction of Tertiary Oil Recovery Dynamic Analysis System Based on Numerical Simulation and Data Driving .....	116
<i>Lin Zhu</i>	
An Intelligent Optimization Model for Enterprise Resource Allocation Efficiency and Its Application to Networked Management.....	121
<i>Weixin Liu, Zhibin Ling, Yuhua Wei</i>	
Research on Optimization of Human-Computer Interaction Experience and Intelligent Feedback Algorithm in English Teaching Driven by Educational Robot.....	127
<i>Sang Li, Xuhan Chen</i>	
Research on Action Recognition and Intelligent Optimization of Armed Police Enemy Capture Based on Machine Learning.....	132
<i>Yi Yang, Ke Liu, Qin Zeng</i>	
Research on Spoken English Training and Real-Time Feedback Modeling by Integrating Visual-Speech Multimodal Learning .....	137
<i>Yu Zhou</i>	
Research and Implementation of Japanese Multimodal Translation System Based on Computer Vision .....	143
<i>Li Shan</i>	
Automatic Recognition and Generation Algorithm for Design Art Style Based on Deep Learning.....	149
<i>Ruiying Dong, Yiheng Dai, Yu Xie</i>	
Research and Implementation of Software Architecture Optimization Algorithm for High Concurrency Scenarios.....	154
<i>Zhen Fan, Rumeng Zhang, Qipeng Hu</i>	

Research on Three-Dimensional Imaging Technology of Underground Ore Body by Magnetic Method and Seismic Data Joint Inversion.....	159
<i>Qun Liang</i>	
Efficient Distributed Computing Framework and Algorithm Optimization for Big Data Processing .....	164
<i>Ying Sun</i>	
Research on Financial Data Security and Intelligent Compliance Management Based on Blockchain and Big Data.....	170
<i>Wanli Liu, Jianlin Li, Na Chen</i>	
Research on Construction Engineering Layout Algorithm Based on Action Space Optimization .....	175
<i>Benrui Gong</i>	
Research on Error Compensation and Trajectory Optimization of Underwater Inertial Odometer Based on Improved LSTM Network .....	180
<i>Shiyu Fang</i>	
Simulation of Cigarette Sales Forecasting Model Based on Deep Learning and Big Data Algorithm.....	185
<i>Sha Liu, Su Liu, Zhouliang Ye</i>	
Research on Personalized Music Education Audio Signal Processing Technology Based on Deep Learning .....	190
<i>Ying Liu</i>	
Trusted Sharing and Access Control Model of Medical Big Data Based on Privacy Computing .....	196
<i>Weidong Ning, Hongfeng Liu, Shiyang Sun, Xinyue Tao, Jingwen Yu</i>	
Research on Feature Extraction and Classification Algorithm of Large-Scale Psychological Evaluation Data in Universities.....	202
<i>Meiyi Xian</i>	
Optimization and Application of Efficient Multimodal Convolutional Neural Network Model for Big Data Analysis.....	208
<i>Wenge Yao, Xueqi He, Jiaying Wu</i>	
Research on the Optimization and Intelligent Assessment of Garden Landscape Ecology Driven by Big Data and Machine Learning.....	213
<i>Wenbo Zhou</i>	
Application and Optimization Algorithm of Multi-Source Remote Sensing Data Fusion in Water Resources Monitoring .....	219
<i>He Zhu, Jianwei Ma, Yayong Sun, Nan Li, Xinyu Chen</i>	
Parallel Algorithm Design and Performance Optimization in Computational Physics .....	224
<i>Xin Zhou</i>	
Exploration of High Performance Computing Model Acceleration and Tuning Methods for Domestic GPUs .....	229
<i>Apeng Gao, Min Cao, Qihao Liu, Demin Ma, Meiyu Chen</i>	
Research and Application of Fiber Optic Perimeter Vibration Monitoring Technology.....	236
<i>Wei Jiang, Quan Guo, Yaozong Yang, Entao Niu, Zhiwen Han</i>	
Research on Intelligent Construction-Oriented Civil Engineering Construction Resource Scheduling and Intelligent Optimization Algorithm.....	241
<i>Hai Xie, Yajie Liu</i>	

Risk Assessment and Early Warning System Design of Curtain Wall Glass Self-Explosion in 350km/H High-Speed Railway Station Building Based on Machine Learning.....	247
<i>Shun Li, Li Yang, Yanqiang Lan, Zhiliang Feng, Yao Li, Xiaolin Zhou</i>	
Advanced Radiation Resistant Packaging Technology and Reliability Prediction Model for Avionics Systems.....	253
<i>Haitao Ren, Bing Zhang, Shuo Li</i>	
Research on Data-Driven Optimization and Decision Support Algorithm for Building Design Parameters .....	259
<i>Changli Song</i>	
Research on Multi-Objective Optimization Algorithm for Structural Stiffness of Optoelectronic System and Mirror Quality of Optical Elements .....	266
<i>Fan Zhou, Mingchao Wang, Liang Lei, Gang Cheng</i>	
Design and Performance Analysis of Distributed Computing Optimization Algorithm for Big Data Environment .....	272
<i>Qi Yu</i>	
Research on Multi-Dimensional Data Mining and Economic Model Construction for Intelligent Decision-Making .....	277
<i>Li Wang, Hongwei Sun</i>	
Research on Intelligent Image Processing and Video Enhancement Algorithm for Film Post-Production .....	282
<i>Na Song</i>	
Algorithm Design and Safety Analysis of Artificial Intelligence-Driven Autonomous Driving System .....	287
<i>Jiahui Yu</i>	
Research on Defect Diagnosis and Fault Prediction Algorithm of Water Wall of Utility Boiler .....	293
<i>Jian Zhang, Jian Li, Hao Huang, Yonghua Yu</i>	
Modeling and Implementation of Intelligent Decision Support System for Ecological Law Enforcement Based on Multi-Source Environmental Data .....	298
<i>Chuanguo Nie</i>	
Adaptive Cutting Force Simulation and Intelligent Optimization Algorithm for Efficient NC Machining.....	304
<i>Yanlin Song, Xinjun He, Na Yu, Xiaoming Liu, Yuzhou Wang</i>	
Research on Intelligent Retrieval System of Wild Animal Protection Law by Integrating Knowledge Map and Natural Language Processing.....	309
<i>Siyu Yan</i>	
Research on Panoramic Visual Modeling and Automatic Layout Algorithm of Secondary Circuit for Substation .....	315
<i>Zutao Shen, Yuteng Wu, Xuehai Xiong, Yong Zhu, Wuzhi Zhao, Dan Luo</i>	
Research on Intelligent Slope Stability Assessment Algorithm by Integrating Multi-Source Data.....	321
<i>Xian Zhang, Shupu Liu</i>	
Research on Hospital Patient Classification and Disease Prediction Based on Data Mining.....	328
<i>Meili Liu</i>	

Application and Evaluation of Digital Drama Therapy Platform Based on Sensor Data in Psychological Intervention .....	334
<i>Yizhou Chang</i>	
Research on the Interaction System of English Education Robot Based on End-To-End Speech Recognition Modeling .....	340
<i>Wenjing Fu</i>	
Research on Multimodal Feature Alignment and Semantic Embedding Model for Cross-Modal Music Retrieval .....	346
<i>Chao Guo</i>	
Fine-Grained Feature Extraction Technology Innovation in the Process of Facial AU to Expression Mapping Based on Image Processing .....	352
<i>Hanyou Huang</i>	
Construction of User Behavior Prediction Model of Information Management System Based on Deep Learning .....	359
<i>Yuqi Jiang</i>	
Research on Motion Planning and Real-Time Obstacle Avoidance of Cooperative Robot Based on Model Predictive Control .....	365
<i>Keyuan Li, Yanyan Zhu, Sen Lin, Ye Qin, Liangliang Ning</i>	
Research on the Application of Multi-Objective Optimization Algorithm for Complex Scenes in Computer Vision.....	370
<i>Jiawang Liang, Yanjun Lin</i>	
Research on Multi-Source Data Fusion and Depth Analysis Method for Fine Management in Universities.....	375
<i>Yanjun Lin</i>	
Research on Intelligent Identification Algorithm of Digital Platform Practitioners Based on Multidimensional Feature Fusion.....	381
<i>Huan Liu</i>	
Design of 3D Printing Graphics Reconstruction and Data Processing Intelligent System for Personalized Manufacturing .....	387
<i>Haimei Luo, Yi Li</i>	
Research on Real-Time Guidance-Oriented Vision Tracking and Motion Prediction Algorithm of Sports Training Robot.....	392
<i>Jiming Ma, Lin Jiang, Kun Qian, Li Li, Yuxin Hong</i>	
Intelligent Evolution and Algorithm Realization Path of Decision Support Model in Information System .....	397
<i>Mingyan Wu</i>	
Construction and Performance Evaluation of AI Automatic Scheduling Algorithm for Multi-Task Collaboration .....	403
<i>Yanfeng Xu, Bowen Peng, Hao Zhang, Hongbo Piao</i>	
Real-Time Light Calculation and Optimization Model for Large-Scale Scene Rendering .....	408
<i>Yawen Yang, Shuai Fu, Wei Wu, Feng Wu, Bin Dong</i>	

Research on Deep Learning-Based Algorithms for Computational Graphics Generation and Optimization.....	414
<i>Hua Yi, Jiawang Liang</i>	
Construction and Optimization of Personalized Human-Computer Interaction System Based on Pre-Training Large Model.....	420
<i>Yang Zhang, Peng Ji, Xiaohui Yuan, Lei Zhao, Chuanzhe Qu</i>	
Dance Movement Style Recognition and Automatic Classification Technology Based on Artificial Intelligence.....	426
<i>Sha Zhu</i>	
Image Enhancement Algorithm in Digital Storage and Visual Inheritance of Intangible Cultural Heritage.....	432
<i>Ziye Zou</i>	
Research on Automatic Identification Method of Building Construction Defects Based on UAV Image and Convolutional Neural Network.....	437
<i>Huan Liu</i>	
An Automated Framework for Supply Chain Software Trustworthiness Assessment and Its Implementation.....	443
<i>Tao Dai, Jinran Du, Jiaxiao Meng, Boning La</i>	
Construction of Multi-Source Sensor Data Fusion and Construction State Recognition Model for Intelligent Construction.....	448
<i>Qing Dong, Qingsen Wei</i>	
Study on Seepage Characteristics and Dynamic Optimization Algorithm of Reservoir During Water Polymer Flooding.....	453
<i>Fengjiao Hu</i>	
Diagnosis and Operation Strategy of Submerged Oil Electric Pump Based on Intelligent Optimization Algorithm.....	458
<i>Liyang Jiao</i>	
Research on Parameter Prediction and Control Model of Intelligent Manufacturing Process Based on Adaptive Optimization Algorithm.....	465
<i>Yunyong Ma, Xu Wang</i>	
Research on Dynamic Monitoring and Prediction Method of Water Drive Reservoir Based on Big Data Analysis.....	471
<i>Ming Qin</i>	
Construction of Dynamic Simulation and Prediction Algorithm of Formation Fluid for Optimization of Static Pressure Measurement.....	476
<i>Jie Zhang</i>	
Design and Implementation of Intelligent Management System for Wharf Coal Yard Based on Big Data Analysis.....	482
<i>Hao Chen, Qianbin Zhao, Chunjuan Wang, Yupeng Du, Qingbin Zhang</i>	
Big Data Analysis and Prediction Model in Intelligent Dispatching System of Coal Yard.....	489
<i>Gang Li, Huashi Liu, Lei Meng, Chenxu Hao</i>	

Application and Optimization of Reinforcement Learning Algorithm for Coal Yard Transportation Scheduling.....	494
<i>Jinguang Liu, Haodong Li, Xinliang Ding, Yingkuan Sun, Yuntao Cui</i>	

Design and Implementation of Library Information Circulation Service Intelligent System Oriented to Personalized Recommendation .....	500
<i>Yan Liu</i>	

## VOLUME 2

Research on Multi-Source Information Fusion Perception and Path Optimization Algorithm of New Energy Vehicle-Intelligent Connected Vehicle .....	507
<i>Qing Lv</i>	

Research on Optimization of Big Data Processing and Analysis Algorithm Based on Deep Learning.....	513
<i>Yan Shao</i>	

Research on Structural Feature Learning and Fault Prediction Method of Communication Network Based on Graph Neural Network.....	519
<i>Jia Tang, Zejing Guang, Hanyu Zhao, Xiaoxi Guo, Yanyu Chen, Ping Jia</i>	

Research on Intelligent Scheduling Optimization and Prediction Model of Wharf Coal Yard Based on Deep Learning .....	524
<i>Xiao Wang, Zhiyuan Chen, Ruoyu Qi, Lin Li</i>	

Research on Automated Deployment and Management Model of Software Systems for Cloud Computing Platforms.....	529
<i>Cheng Wu</i>	

Research on Multi-Source Operation and Maintenance Data Fusion and Deep Residual Network Modeling for Aviation Equipment Fault Prediction.....	536
<i>Ming Xiao</i>	

Research on the Construction and System Optimization of Intelligent Logistics Environment Monitoring Visualization Platform Based on Internet of Things Data Driving .....	542
<i>Zhe Yang, Lili Yu, Ni Xiao, Dena Zhu, Ying Li</i>	

Research on Intelligent Maintenance and Energy Consumption Optimization of Green Highway Driven by Intelligent Perception and Big Data.....	548
<i>Ting Zuo, Rui Cui</i>	

Optimization of Consumer Data Protection Algorithms and Privacy Protection Technologies in the Digital Age .....	555
<i>Mengying Wang, Xiaohui Zhu</i>	

Study on Coupling of Gas Field Produced Water Treatment Process and Fracturing Fluid Performance Based on Multi-Parameter Algorithm Optimization .....	561
<i>Youliang Cen, Guofeng Li, Xinge Jiang, Xiaoqing Qiu, Na Fu, Song Chen, Jing Zhao</i>	

Fine-Grained Vascular Segmentation Model Driven by Self-Supervised Learning and Its Application in Fundus Image Analysis.....	567
<i>Yuqing Du, Qiang Yang, Haoqian Lv, Ming Yang</i>	

Morphological Analysis and Feature Extraction of Neurons Assisted by Artificial Intelligence .....	572
<i>Jiahong Li, Zhenshi Zhang</i>	

Construction and Verification of Adaptive Estimation Model of Fuel Pipeline Pressure Oriented to Flight State Coupling.....	579
<i>Quan Li</i>	
Research on Component Reuse and Integrated Scheduling Algorithm Based on Low Code Framework.....	585
<i>Shenzhang Li, Jun Yin, Zequan Zhang, Jing Wu</i>	
Research on Multi-Modal Target Recognition and Tracking Fusion Algorithm for Pod Vision System .....	591
<i>Fuqiang Sun, Yanping Li, Xiaolei Wang, Haitao Sun, Shengchao Wang</i>	
Building Fire Simulation and BIM Visual Emergency Response Model Combined with Deep Learning .....	596
<i>Yueqiang Wang</i>	
Automatic Filtering and Classification Model Construction of Multi-Beam Data Based on Improved Convolutional Neural Network .....	603
<i>Xiaobo Zhang</i>	
Demonstration of Visual Design of Plankton in VR Multi-Modal Interactive System.....	609
<i>Huanhuan Shi</i>	
Design of Intelligent Control Algorithm for Low-Altitude Aircraft Cluster Based on Virtual Reality Technology .....	615
<i>Xue Wang</i>	
Research on Multi-Source Data Fusion and Dynamic Modeling Technology for Industrial Production Processes Based on Digital Twins.....	621
<i>Yajie Zhao, Dongqing Sun, Xiaolei Xu</i>	
Deep Learning-Based Optimization Algorithm for Health Risk Behavior Identification and Intervention in Smart Communities .....	627
<i>Tianli Qu, Yanrong Jiao</i>	
Research on Multimodal Data Fusion and Intelligent Analysis Algorithm in Psychological State Recognition .....	633
<i>Xin Huang, Wanlu Li</i>	
Design and Application of a Psychological Prediction System for Depression Based on Artificial Intelligence Algorithms .....	639
<i>Lingyun Hu, Ying Wang</i>	
Modeling and Optimization of Computer Laboratory Automation Management System Based on Reinforcement Learning .....	645
<i>Enze Xiao</i>	
Research on Vehicle Brake Force Distribution Based on Brake-By-Wire Failure .....	651
<i>Dejie Deng, Zhuo Hu, Wenxi Chen, Guozheng Zhang</i>	
Computer Simulation-Based Evolution and Measurement of Quantum Mechanical Wave Functions .....	658
<i>Yi Wu, Hui Meng, Yi Wu</i>	
Research on Industrial Structural Design Methods Based on Parametric Modeling and Deep Learning Optimization Algorithms.....	663
<i>Zhen Li, Sheng Jin</i>	

Research on a Dynamic Data Security Risk Assessment Method Based on Behavioral Pattern Recognition .....	670
<i>Tao Dai, Hongliang Zheng, Boyu Lai, Zhijun Zhi</i>	
Optimization of Pattern Recognition Algorithm for Traffic Flow Prediction and Road Condition Recognition in Intelligent Transportation System .....	675
<i>Shanshan Sun, Xin Li</i>	
Research on Fault Location Model of Low-Voltage Distribution System Based on Deep Learning and Graph Neural Network .....	682
<i>Leiyang Zhao, Liying Liao, Simian Guo, Fengze Li, Xuan Kong</i>	
Research on Stability Analysis Method of Dynamic System Integrating Mathematical Modeling and Data-Driven Algorithm .....	688
<i>Jing Xia, Jun Shan</i>	
Automated Vulnerability Detection in Software Applications Using AI .....	694
<i>Bin Hu</i>	
Research on Network Security Based on Prefix Span Algorithm.....	698
<i>Xintong Liu</i>	
Reconstructing Building Surface Models with Enhanced Geometric Feature Constraints.....	703
<i>Huaizhu Wang</i>	
Blockchain-Based Secure Framework for Internet of Things (IoT) Networks: Enhancing Scalability, Privacy, and Integrity in Decentralized IoT Environments .....	709
<i>Lin Zhang</i>	
Data Privacy and Anonymization Techniques in Big Data.....	715
<i>Yueran Zhang</i>	
Artificial Intelligence Algorithms Improving Computing Efficiency and Precision .....	720
<i>Dongyuan Liu</i>	
Network Intrusion Detection Technology Based on Deep Learning .....	724
<i>Yikai Wang</i>	
Research on the Application of Computer Network Security Technology in Embedded Systems .....	728
<i>Xin Xiong, Yunlong Liu, Kui Wang, Yating Dai, Mingjing Guo</i>	
Research and Analysis of Relational Extraction Based on Bidirectional Long and Short-Term Memory Networks.....	734
<i>Chengshun Liu, Fuliang Lin</i>	
Research on Intelligent Decision Making Algorithms for Complex Scenes Incorporating Knowledge Retrieval and Generation Mechanisms.....	739
<i>Zhenming Deng, Maixin Xu, Wenbo Yang, Jiexiong Xu, Shuaishuai Chen, Yiming Li, Yuxuan Zou, Yi Zhang</i>	
Dynamic Monitoring and Intelligent Pre-Alarm Method for Urban Business Environment Based on Spatiotemporal Data Fusion .....	746
<i>Lingming Hong, Lingling Wang, Yaoping Kan</i>	
Integration and Response Optimization Algorithm of Real Time English Speech Translation System in Multimodal Interactive Environment .....	752
<i>Jie Huang</i>	

Research on High-Dimensional Abnormal Data Detection and Interpretable Algorithm Optimization Based on Self-Attention Mechanism.....	758
<i>Rui Ma, Ruoyan Wan, Feng Wu, Yun Zhang</i>	
Design of Data Security Check Mechanism and Research on Prevention and Control of Privacy Leakage Based on Federated Learning.....	765
<i>Yang Yang, Ying Xia, Bo Shi, Xiaoya Wang, Jing Zhao</i>	
Research on Database Architecture Optimization of Virtual Teaching and Research Office Based on Multi-Source Heterogeneous Data Fusion.....	771
<i>Minjue Peng, Wei Chen</i>	
Research on Intelligent Diagnosis System for City-Level Digital Operation Platform Integrating Artificial Intelligence and Time Series Modeling.....	778
<i>Yajing Chen</i>	
Research on Automatic Software Test Case Generation and Path Coverage Optimization Methods Incorporating Deep Reinforcement Learning.....	785
<i>Chang'An Pan</i>	
Digital Media Image Enhancement and Real-Time Rendering Algorithms for Virtual Reality Scenes .....	791
<i>Boya Sun</i>	
Research on Modeling and Application of Multi-Objective Evolutionary Algorithm for Optimal Well Network Placement.....	796
<i>Liu Yang</i>	
Research on Application of Mechanical Design Engineering Database Based on Intelligent Optimization Algorithm.....	803
<i>Xiangmei Li</i>	
Design and Performance Evaluation of Multi-Task Transfer Learning Model for Time Series Data.....	808
<i>Huili Mu</i>	
Research on Flood Early Warning System of Water Conservancy Project Based on Artificial Intelligence .....	814
<i>Zhenming Ni</i>	
Research on Multi-Source Data Fusion Algorithm and Optimization Application for Financial Risk Identification .....	820
<i>Jiixin Wang</i>	
Individualized Tourism Itinerary Planning and Route Optimization Method Integrating Spatio-Temporal Big Data .....	826
<i>Yali Wang</i>	
Research on Probiotic Activity Monitoring and Predictive Maintenance Algorithm Based on Industrial Big Data .....	831
<i>Wenjing Xu</i>	
Evaluation and Prediction of Flexible Resource Adjustment Capability Based on Big Data Analysis .....	838
<i>Xuezheng Ying, Wei Ye, Fengqiao Chen, Xingxing Zhou</i>	
Optimization and Application of Machine Learning Algorithms in Hotel Dynamic Revenue Management Systems.....	844
<i>Deng Han, Jian Lu</i>	

Study on Genetic Trait Prediction and Explanatory Model Based on Large-Scale Phenotype-Gene Association Data.....	851
<i>Bo Wang, Yuchun Wang, Xiaodi Ding, Lianguang Shang</i>	
Research on Intelligent Evaluation Algorithm of Genetic Variation Pathogenicity for Multiomics Data Fusion.....	857
<i>Bo Wang, Yuchun Wang, Xiaodi Ding, Lianguang Shang</i>	
Application and Optimization of Multimodal Translation Robots in Spanish Medical Literature .....	864
<i>Hong An, Zhijie Fang, Lu Yu</i>	
Research on Intelligent Detection Method of Construction Quality Based on UAV Image Recognition and Convolution Neural Network .....	871
<i>Ning Li, Dawei Shao, Zhen Yan, Yunchao You, Cheng Wang</i>	
Image Processing and Ink Diffusion Simulation Algorithms for Digital Painting on Heterogeneous Physical Media .....	877
<i>Yihua Wu, Qian Zhao</i>	
Optimization of Student Information Collection and Analysis Platform Based on Big Data and Robotics Technology .....	882
<i>Di Zhang</i>	
Research on the Construction Process Modeling and Dynamic Control Algorithm of Wear-Resistant Ground of Super-Large Workshop Based on Digital Twin.....	888
<i>Zongzhi Zhang, Fuzhao Ling, Ning Li, Lianjun Shao, Qiang Lan</i>	
Image Structure Analysis and Printing Path Generation Technology in the Conversion of Digital Painting to Solidization .....	894
<i>Qian Zhao, Yihua Wu</i>	
Design and Implementation of Interactive Intelligent System for Russian Learning Based on Augmented Reality and Speech Recognition .....	900
<i>Xuanhao Geng</i>	
Research on Modeling and Recognition Algorithm of Human-Computer Interaction Behavior in Cognitive Degeneration Process of Alzheimer's Disease .....	907
<i>Huixian Ti</i>	
Research on Network Attack Detection and Defense Based on Deep Learning Algorithm .....	914
<i>Xinguang Xiao, Weijie Chen, Linjie Xing, Zhongkang Du, Yu Zhang</i>	
Application and Optimization of Deep Learning Algorithms for Mechanistic Prediction of Physicochemical Reactions .....	920
<i>Biying Yan, Xiaowei Hou</i>	
Application and Optimization of Deep Learning Algorithms in Food Microbial Contamination Detection .....	926
<i>Xiaowei Hou, Biying Yan</i>	
Construction and Optimization of Cross-Industry Financial Anomaly Prediction Model Based on Transfer Learning .....	932
<i>Chunli Wang, Zhijiao Chu</i>	
Development of an Integrated and Visualized Platform for Railway Freight Information Management in Support of Intelligent Transportation Management .....	938
<i>Bingzhi Wu, Wenjuan An</i>	

A Real-Time Music Performance Emotion Recognition System Integrating Computer Vision and Audio Signal Processing.....	945
<i>Siheng Wu, Yu Zhou</i>	
Design and Implementation of an Intelligent Mindfulness Intervention Evaluation System Based on Affective Computing and Artificial Intelligence .....	951
<i>Yi Song, Xiaoxia Zhang</i>	
Research on Modeling Process and Optimization Algorithm of Three-Dimensional Collaborative Design of Pumped Storage Power Station Based on BIM and Rule Engine .....	957
<i>Yong Feng, Liu Yang, Lan Guan, Jianyong Ren, Feng Yao, Keyuan Wang, Zhenzhou Wang</i>	
Research on Multi-Source Data-Driven Modeling Method for Aero-Hydraulic System Parts Oriented to Adaptive Control .....	963
<i>Ziyang Liu, Zhihua Wang, Shaohua Ma</i>	
Optimization of Reservoir Well Network Deployment Strategy and Construction of Dynamic Adjustment Model Integrating Reinforcement Learning.....	970
<i>Xu Liu</i>	
Study on Numerical Simulation and Optimization Algorithm of Reservoir Dynamic Response Under Multi-Well Group Cooperative Development .....	976
<i>Jing Zhang</i>	
Intelligent Inspection of Agricultural Assets and Design of UAV Autonomous Path Planning System for Rural Revitalization .....	983
<i>Li Lin</i>	
Network-Structured Fault Location Algorithm for Distribution Networks Using Multi-Source Information.....	989
<i>Chaojiang Shu, Ning Li, Ming Duan, Zhao Li, Yali Yuan</i>	
Construction of Intelligent Prediction Model of Remaining Oil Distribution in Polymer Flooding Reservoir Under Complex Geological Conditions .....	995
<i>Xiaoyan Tian, Xuejiao Hao, Jinhua Wang</i>	
Capacity Evaluation and Prediction Method Based on Multi-Model Adaptation for Distributed Photovoltaic System .....	1000
<i>Li Hua, Gao Lei, Wang Runzhi, Chen Guobin, Ma Yinghui</i>	
Study on Intelligent Simulation and Prediction Algorithm of Oil-Water Phase Change During Polymer Flooding Development of Reservoir .....	1006
<i>Xiaoyan Tian</i>	

**Author Index**