

International Conference on Computer Science, Information Engineering and Digital Economy (CSIEDE 2022)

Advances in Computer Science Research Volume 103

Guangzhou, China
28 - 30 October 2022

Part 1 of 2

Editors:

**Haocun Wu
Tapas Mishra
Vasilii Erokhin**

ISBN: 978-1-7138-7061-6

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.

Print copyright© (2022) by Atlantis Press (part of Springer Nature)
All rights reserved.
Copyright for individual electronic papers remains with the authors.

For permission requests, please contact the publisher:

Atlantis Press
Van Godewijkstraat 30
3311GX Dordrecht
The Netherlands

contact@atlantis-press.com

Printed with permission by Curran Associates, Inc. (2023)

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
Web: www.proceedings.com

TABLE OF CONTENTS

PART 1

The Impact of Trade Agreements on Exports in the Context of Big Data Japanese Digital Products as An Example.....	1
<i>Xi Yang, Tingting Zheng</i>	
Design and Research on Virtual Reality Roaming System of "Tongguanshan 1978" Cultural and Creative Park in Tongling City.....	7
<i>Biqing Wang, Xiaoyong Yuan</i>	
Evaluation and Analysis of Shandong Digital Economy Construction	16
<i>Mingjun Zhang, Yanqing Zhao, Statyvka Yurii Ivanovych, Dmytro Lande, Shiwei Zhu, Junfeng Yu, Beibei Xu, Sisi Li</i>	
Predicting Accounting Fraud in Publicly Traded Chinese Firms via A PCA-RF Method	27
<i>Donger Chen</i>	
Current Situation and Future Development of Smart Home Chips	37
<i>Yuhan Luo</i>	
Virtual Simulation Project Analysis of Shandong Traditional Handicraft Manufacturing “Jinan Black Pottery” Based on “Ideavr” Platform	44
<i>Bei Han, Yu Niu, Jing Yang, Jilin Qin</i>	
Research on RCEP Countries’ Role in the Global Value Chain Concurrently on RECP Dividend to E-commerce in China.....	58
<i>Xiaofei Luo, Jiahao Lai</i>	
Sentiment Analysis of Microblog During the COVID-19 Pandemic Based on NEZHA Model	68
<i>Fan Yang</i>	
Incentive Based on Video Quality Impacts on Revenue, Video Quantity and Average Video Quality.....	75
<i>Mengyang Li</i>	
A Resource Efficient Decoder for Polar Code Based on FPGA	86
<i>Chenguang Yang, Huibin Zhang</i>	
Exploration and Application of Information Technology in Quality Control over the Development of Spacecraft.....	94
<i>Yuxue Qiu, Jingjing Zhao, Ming Shan, Dawei Lin, Yu Zhang, Dongqi Chu</i>	
Peer-Review Statements	101
<i>Haocun Wu, Tapas Mishra, Vasilii Erokhin</i>	
Research on the Influence and Countermeasures of Cross-Border E-Commerce on the Development of Service Trade.....	103
<i>Yan Qu</i>	
Application of Micro Control Unit Technology in Intelligent Electronic Products.....	112
<i>Yifan Hu</i>	

Analysis of the Investment Value of Chinese DigitalBanking—on DuPont Analysis	124
<i>Junyi He, Feng He, Weida He</i>	
Prediction of Large-Scale Instrument Usage Based on Catboost Algorithm for Science and Education Integration in Local Universities	134
<i>Lin Tao, Jiading Bao, Bao Zhu</i>	
Impact of Enterprise Size on Enterprise Investment and Its Difference in Life Cycle Stages under the Background of Big Data — Analysis Based on Multiple Linear Regression Model of the Econometric Analysis Software STATA	145
<i>Yanni Fu, Baofeng Li</i>	
On ISO 26262 Compliance and Safety Assurance for Autonomous Vehicles using STPA: ISO 26262 Compliance and Safety Assurance using STPA.....	153
<i>Changsheng Gao, Xuezhu Yang, Chengrui Sun</i>	
Construction of Social Governance Data Integration Model and Decision Analysis Method in Big Data Era.....	163
<i>Yuchun Li</i>	
Research on Potential Risk Prediction Method of Manufacturing Industry Based on Global Value Chain	175
<i>Shuguang Liu, Hongwei Zhou, Shan Feng, Yawen Kong</i>	
Intelligent Robot Design to Assistance the Elderly in Toilet	183
<i>Li Zhang, Yiqiao Yang, Yanhang Yang, Weijie Chen</i>	
Research on Entropy-Weighting TOPSIS Method Basedon Shanghai Digital Economy Index System	189
<i>Juanjuan Qi, Wei Li, Xiaofang Li, Ling Yuan</i>	
Digital Inclusive Finance, Application Ability of Digital Technology and Consumption Upgrade.....	196
<i>Yijie Jiang</i>	
The Design and Application of Network Democratic Survey System under the Background of internet plus Democracy	203
<i>Yangmei Cheng</i>	
Multiple Similar Groups Based Information Technology for POI Recommendation in LBSNs.....	211
<i>Yibo Ding, Jinyu Bai, Yiqing Dai, Jinshuo Zhang, Yixuan Zheng, Qitai Xu, Shengwen Yu</i>	
Prediction of Outfit Compatibility Based on Weighted Multimodal Fusion	219
<i>Yan Li, Xiaobao Fu, You Du</i>	
Research on Security Evaluation Index System for Video Surveillance Network	231
<i>Jinping Cao, Tao Chen, Jiao Wan, Simin He, Elken Guriz hot</i>	
Optimization of Pumping Station Energy ConsumptionModel Based on Improved PSO Algorithm	240
<i>Bangrong Hu, Xiaoguang Xu, Xin Zhang</i>	
Research on A Brain Computer Interface for Population	247
<i>Lili Zhou, Zhichao Zhang, Tongjun Liu</i>	
Privacy-Preserving Attribute-Based Educational Service Recommendation in Online Education System	254
<i>Lijuan Huan, Xueyan Liu, Ruirui Sun, Linpeng Li</i>	

Artificial Intelligence Machine Learning Technology Is A Double-Edged Sword	267
<i>Ying Wu</i>	
On the Criteria for Cybersecurity and Risk Assessment Based on ISO/SAE 21434 for the Application of Autonomous Vehicle: Cybersecurity for the Application of Autonomous Vehicle	276
<i>Yi Liu, Xuezhu Yang, Muxi Li, Miao Wu, Chengrui Sun, Shiyong Zhou</i>	
Feasibility Study of Intelligent Cafeteria Peak Efficiency Management.....	286
<i>Yimeng Li, Tianyu Han, Lianwu Yu, Jingjing Liu</i>	
Research on Irrigation Data of Agricultural Greenhouse by Big Data Analysis Technology	294
<i>Youhua Xu, Chuanyu Xiong</i>	
The Construction of University Professional Enrollment Plan Allocation Model Based on Big Data Analysis Model and Multi Factor Analysis Method.....	301
<i>Xin Zhao, Wenlong Wang, Yiyu Chen</i>	
Detection Method of Conductor Strand Defects Based on Multi-modal Data Fusion.....	308
<i>Jiehui Wu, Jianrong Zhang, Liang Fan, Lei Zhang, Huafeng Su, Jinduo Zhou, Guanke Liu, Zhongyu Li, Jianzhong Li, Zhibin He</i>	
Revocable Attribute-Based Data Integrity Auditing Scheme on Lattices.....	320
<i>Xiaoyan Zhang, Xueyan Liu, Qiong Liu, Jing Wang</i>	
Information Technology, Digital Economic Development and Land Price Distortions - An Empirical Examination of Chinese Cities.....	334
<i>Yihe Chu</i>	
Research on Low Code Development Platform Based on Business Middle Platform Technology.....	341
<i>Gangqiang Wang, Fan Yang, Kun Feng, Xia Li, Xiang Zhe</i>	
The Orthogonal Analysis of Tensor Decomposition for Multisubject FMRI Analysis.....	349
<i>Biao Wang, Bingjing Cui, Yipu Zhang</i>	
Density and Dispersion Based Radar Signal Denoising Presorting Algorithm	359
<i>Zhiyu Qu, Xinyue Li</i>	
Analysis and Comparison of Technological Innovation in New Energy Vehicle Battery Industry	367
<i>Muxun Bao, Qinghui zhang</i>	
Development of ISO 26262 and ISO 21448 Concept Design Process Integration: ISO 26262 and ISO/PAS 21448 Design Process Integration.....	376
<i>Xuezhu Yang, Muxi Li, Yi Liu, Chengrui Sun, Miao Wu, Shiyong Zhou</i>	
Research on Influencing Factors of Consumers' Satisfaction with Online Shopping of Fresh Agricultural Products.....	389
<i>Xuan Wang</i>	
Historical and Cultural Exhibition of Shaanxi Museum Based on Virtual Reality Technology	397
<i>Zhongjie Shen</i>	
Analysis and Research of Computer Network Reliability Based on Intelligent Computing	406
<i>Zhe Wang, Yun Wu, Qiandi Cheng, Hui Zhang</i>	
A Study of Dynamic Heterogeneous Network Prediction based on DyHATR-Skip Embedding Fusion.....	413
<i>Zhaoke Li, Shuwei Xu, Gaofei Si, Jingyun Zhang</i>	

Application of BIM+ Smart Site Integrated Construction Technology in Large Medical Building Construction	419
<i>Xiwei Li</i>	
Rec-GNN: Research on Social Recommendation based on Graph Neural Networks	426
<i>Gaofei Si, Shuwei Xu, Zhaoke Li, Jingyun Zhang</i>	
Multi-Source and Multi-Dimensional Data Fusion of Magnetic Levitation Track Transportation Based on Digital Twin	434
<i>Yuxin Zhang, Lei Zhang, Guochen Shen</i>	
Design and Implementation of Digital Twin System for Underwater Equipment	450
<i>Guo Huai, Gao Xiang, Yang Ziheng, Wang Min</i>	

PART 2

Research on Course Sharing Technology Based on IPFS and Blockchain	458
<i>Wenzhi Wu, Ruizhe Ye, Feng Sha, Chao Lin</i>	
Application of Fintech in Supply Chain Financial Risk Control	469
<i>Feng Chen</i>	
Research on The Sustainable Development Matrix of Home-Based Elderly Care Services in Free Trade Ports from The Perspective of Artificial Intelligence	478
<i>Huan Zhou, Guoqiang Zeng, Ziyi Ren, Xuemin Han, Jianrong Tang</i>	
Research on Online Marketing Strategy of Tibetan Incense Pork Under the Background of “Internet +”	485
<i>Zhao Xiao, Liu Li, Ming Zhu, Duan KaiBo, Entao Lin, Xuemei Liu, Baimazhuoga</i>	
Research on the Influence of Cuteness Design of Service Robot on Hotel Customer Tolerance	494
<i>Ling Chen, Baichun Ma, Xi Lu</i>	
A Study of the Effect of Service Recovery Method on Purchase Intention Service Recovery Timing as a Moderating Variable	502
<i>Chiawei Chao, Haimei Xu</i>	
Design of Brain Computer Interface Based on Steady-State Visual Evoked Potential	509
<i>Li-li Zhou, Yin-fu Du, Tong-Jun Liu</i>	
Data Services Pricing Method Based on Cost and Premium	516
<i>Jing Su, Hongyan Yan, Yuan Liu, Yaqing Si, Zhe Chen, Yanbin Hu</i>	
Energy Blockchain Business Model Considering Physical-Information-Value	526
<i>Huojing Guo, Yaheng Su, Yujia Li, Yongli Wang, Wenqiang Miao, Miaomiao Xu, Xiao Meng</i>	
Auto Sales Forecasting Model Based on Target Customer Satisfaction Theory	537
<i>Siyun He</i>	
Thinking About the Intelligent System of Ideological and Political Education in The Era of Artificial Intelligence	548
<i>Xiaoying Ma</i>	
Establishment and Analysis of University Enrollment Promotion Strategy Prediction Model Based on Big Data Analysis Model and Market Response Prediction	556
<i>Xin Zhao, Yiyu Chen, Wenlong Wang</i>	

Regional Differences of Internet Technology Diffusion in China: A Case Study of Shaanxi and Tibet.....	563
<i>Juan Chen, Thelma Domingo Palaoag</i>	
The Application Research of Computer Security Technology in E-commerce	572
<i>Mei Zhao</i>	
Research on Consumer Behavior of Local Life App Under O2O Model	580
<i>Mimi Shao, Fangli Chen, Shihuang Chen</i>	
Cloud-Edge Joint Inference Algorithm for Target Recognition in Cloud-Edge Collaborative Intelligence	594
<i>Gongyi Xiao, Jing Chen, Wen Li, Hao Sun, Chuanfu Zhang, Yudong Geng</i>	
Research on the Impact of Fintech on China’s Banking Industry.....	601
<i>Zhibin Tao, Jiaxiao Chao</i>	
Research on Geological Data Security Governance System	617
<i>Xiaohong Wu, Yi Yue, Renbing Gao</i>	
Design and Implementation of College Physical Fitness Test Management System based on the Identification of Key Points of the Human Body	625
<i>Yujia Cao, Xiaohui Guan, Fenghao Chen, Yuanxia He</i>	
BIM Based Construction Project Budget Management.....	636
<i>Shu Zong, Peng Liu, Minze Li</i>	
Research on the Driving Mechanism of Digital Economy on Industrial Upgrading: Empirical analysis based on Provincial Panel Data in China	645
<i>Dan Hu, Du Lv</i>	
Design and Implementation of Protocol Conversion Server Based on GB/T 28181 and WebRTC.....	655
<i>Shuming Jiang, Jun Liu</i>	
A Blockchain-based Data Sharing Platform for Smart Cities.....	664
<i>Wenqi Zheng</i>	
Research on Interactive Design of Virtual Museum Based on VR Technology	675
<i>Ming Zhaoa, Ying Bao, Hongming Biana</i>	
Impact of Digital Finance on Large-Scale Farmers’ Agricultural Productivity in China	683
<i>Yu Tang</i>	
Why pay attention to the data security of digital media platform in the context of big data analysis ?	689
<i>Jiayi Cui</i>	
Application of Computer Technology in College Students’ Mental Health Education	695
<i>Yu Zhang, Fang Liu</i>	
An Improved Ant Colony Algorithm Based Cluster Control Method for Hybrid Networking of UAV Communication	705
<i>Hanjie Yuan, Yong He, Yaohua Zheng, Limeng Dong, Jianan Yao, Yu Zhang, Lin Lu, Qi Tan, Tianhang Jiang, Haiiao Tan</i>	

Construction of Big Data Analysis Model for High School Students' Career Planning Interest Events Based on Weight Algorithm.....	713
<i>Xin Zhao, Lunjun Cheng</i>	
Risk Identification Method of Enterprise Accounting Information Fraud Based on Weighted Association Rule Algorithm	720
<i>Jianhong Li, Tong Yao</i>	
Development of Three-dimensional Human Motion Modeling Framework and Its Computational Techniques.....	729
<i>Chenyu Li</i>	
Construction of An Audit Platform for Vehicles with Unusual Driving Behavior.....	738
<i>Jinsong Ye, Tiannan Li, Jiahao Feng, Lei Zhou</i>	
Research on the Inheritance and Application of Virtual Digital Simulation Technology in the Custom-made Garments of Guang Embroidery	746
<i>Xiaopu Zhang, Pei Cai, Mo Lan</i>	
Fiscal Decentralization, Economic Policy Uncertainty and High-Quality Economic Development An Empirical Study Based on Systematic GMM	754
<i>Qifang Xiao, Tong Lin, Yuhua Ma</i>	
Research on Wellbore Instability Prediction Method Based on The Fuzzy Evaluation.....	765
<i>Pin Wang, Xinghua Su, Sheng Zhan, Min Wang</i>	
Can CNY Internationalization Eliminate Overcapacity of Steel? ——Research Based on Data Mining	772
<i>Shizhen Hua</i>	
Visual Application of Fitness Concept Infused in Cigarette Package.....	780
<i>Jian Rao, Zequn Lib</i>	
Spacecraft Sun Acquisition Software Component Identification and Description	788
<i>Xingsong Zhao, Bin Gu, Xiaogang Dong, Xiaofeng Li, Ruiming Zhong</i>	
Research on the Construction of University Innovation and Entrepreneurship Information Sharing Platform Based on Big Data Analysis	799
<i>Jin Peng</i>	
Design and Implementation of WebRTC Video Conference System Structure Compatible with GB/T28181 Devices*	807
<i>Shuming Jiang, Nengwu Liu, Guoli Yang</i>	
A Multi-Focus Image Fusion Method Based on Brushlet and CNN	817
<i>Haonan Yu</i>	
Reliable Data Transmission for Smart Substations Based on Blockchain.....	829
<i>Weilun Lao, Haoxin Wang, Rui Zhang</i>	
Development of Harmony-SE Internalization Methodology for Automobile Functional Safety and Cyber Security Process: ISO 26262, ISO/SAE 21434, and Harmony-SE Integration Process Model	837
<i>Xuezhu Yang, Muxi Li, Yi Liu, Chengrui Sun, Miao Wu, Shiyong Zhou</i>	
Research on intelligent learning platform system based on Spring Boot	847
<i>Li Gan, Yong Huang, Yunli Cheng</i>	

Exploration on Informationization of Central Financial Special Project Declaration	859
<i>Peng Luan, Gang Li</i>	
Identification Model for Gambling and Fraud in Bank Personal Settlement Accounts Based on XGBoost Algorithm.....	868
<i>Xin Li, Yan Ke, Jianbin Yu, Yao Zhang</i>	
Competitive Evaluation Index of Chinese Fast-Food Enterprises Based on Feature Weighting Techniques.....	876
<i>Siliang Liu, Chuanjun Tian</i>	
Research on Grid Investment Effectiveness Assessment Methodology and Investment Strategy Optimization of Power Grid Companies	885
<i>Shengwei Lu, Jiong Yan, Zixia Sang, Sha Jin</i>	
Evaluation of Agricultural Science and Technology Talents Competitiveness Based on Analytic Hierarchy Process.....	895
<i>Qi Wang</i>	
Energy Consumption Structure and ESG Performance of Listed Companies: An Empirical Study Based on Chinese A-Share Listed Companies.....	904
<i>Chenhong Zheng, Mengqian Zhang, Cong Zeng, Fangshun Xiao, Mengzhe Liu</i>	
A Comparative Study on Machine Learning Based Type 2 Diabetes Mellitus Prediction	913
<i>Weiyi Zhan</i>	

Author Index