

2021 International Conference on Artificial Intelligence and Blockchain Technology (AIBT 2021)

**Beijing, China
4 – 6 December 2021**



**IEEE Catalog Number: CFP21AQ5-POD
ISBN: 978-1-6654-3268-9**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21AQ5-POD
ISBN (Print-On-Demand):	978-1-6654-3268-9
ISBN (Online):	978-1-6654-3267-2

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
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2021 International Conference on Artificial Intelligence and Blockchain Technology (AIBT) **AIBT 2021**

Table of Contents

Preface	ix
Organizing Committee	x

Intelligent Algorithm and Data Calculation

Picking Scheme Optimization Model and Algorithm Based on Random Storage of Goods in Batch	1
<i>Yan Chen (China Academy of Railway Sciences Corporation Limited, China), Zhikai Jia (China Academy of Railway Sciences Corporation Limited, China), Peng Sun (China Academy of Railway Sciences Corporation Limited, China), and Li Li (China Academy of Railway Sciences Corporation Limited, China)</i>	
Research on Web Log Data Mining Technology Based on Optimized Clustering Analysis Algorithm	6
<i>Xin Wang (Lanzhou University of Arts and Science, China) and Yujuan Xing (Lanzhou University of Arts and Science, China)</i>	
Improvement and Comparison of Traditional CNN and SVM Classification Based on Hog Descriptor in Pedestrian Detection	12
<i>Yusen Luo (Beijing Jiaotong University, China), Xin Liu (University of Electronic Science and Technology, China), and Xuhan Cao (Oberlin College, USA)</i>	
Research on Decision-Making of EMUs Maintenance Based on Triangular Fuzzy Multi-Attribute	17
<i>Li Li (Beijing Jingwei Information Technology Co., Ltd, China), Hui Wang (Institute of Computing Technologies of China Academy of Railway Science, China), Peng Sun (Institute of Computing Technologies of China Academy of Railway Science, China), and Yan Chen (Institute of Computing Technologies of China Academy of Railway Science, China)</i>	
Web Service Classification Based on Reinforcement Learning and Structured Representation Learning	21
<i>Hankang Sheng (Hunan University of Science & Technology, China), Zhangbing Li (Hunan University of Science & Technology, China), Jianxun Liu (Key Laboratory of Knowledge Processing & Networked Manufacturing Hunan University of Science & Technology, China), and Xiao Zhang (Hunan University of Science & Technology, China)</i>	

An Empirical Analysis and Research on the Prediction of Stock Trends Based on the MLP Neural Network Model	28
<i>Shibo Gong (Chongqing Metropolitan College of Science and Technology, China), Dingwen Zhang (Chongqing Metropolitan College of Science and Technology, China), Shiji Du (Chongqing Metropolitan College of Science and Technology, China), Haoyu Jiu (Chongqing Metropolitan College of Science and Technology, China), and Tong Zhou (Zhejiang University of Technology, China)</i>	

Modern Information Technology and Management

Utilizing Machine Learning to Reconnect Potential Customers of the E-Commerce Industry	34
<i>Nehrin Siddique Payel (Brac University, Bangladesh), Mohammad Shahriar Hossain (Brac University, Bangladesh), Shoumik Hossain (Brac University, Bangladesh), Quazi Fahmiduzzaman (Brac University, Bangladesh), Moin Mostakim (Brac University, Bangladesh), and Mahub Alam Majumdar (Brac University, Bangladesh)</i>	
Stochastic Simulation for Assessing DLT Application Design Quantitatively	40
<i>Thomas Osterland (Fraunhofer FIT, RWTH Aachen University, Germany) and Thomas Rose (Fraunhofer FIT, RWTH Aachen University, Germany)</i>	
A Hybrid Evolutionary Approach To Solve University Course Allocation Problem	48
<i>Diby Fabian Dofadar (BRAC University, Bangladesh), Riyo Hayat Khan (BRAC University, Bangladesh), Shafqat Hasan (BRAC University, Bangladesh), Towshik Anam Taj (BRAC University, Bangladesh), Arif Shakil (BRAC University, Bangladesh), and Mahub Majumdar (BRAC University, Bangladesh)</i>	
Research on the Configuration Management of Complex Equipment Based on Identity Resolution...	53
<i>Peng Sun (Institute of Computing Technology, China Academy of Railway Sciences, China), Weijiao Zhang (Institute of Computing Technology, China Academy of Railway Sciences, China), Yan Chen (Institute of Computing Technology, China Academy of Railway Sciences, China), and Li Li (Institute of Computing Technology, China Academy of Railway Sciences, China)</i>	
Applying Machine Learning to Improve Collection and to Reduce Write-Offs in Utilities	59
<i>Bruno S. Nascimento (Choice Technologies Holding Sàrl, Brazil), Denis Maia (Choice Technologies Holding Sàrl, Brazil), and Lucas Almada (Choice Technologies Holding Sàrl, Brazil)</i>	
Optimizing Water Resources Allocation and Hydropower Generation for Supporting Reservoir Management	64
<i>Y. X. Zhou (Beijing Normal University, China), G. H. Huang (Beijing Normal University, China; University of Regina, Canada), and Y. P. Li (Beijing Normal University, China; University of Regina, Canada)</i>	
Structural Equation Model on Attracting and Catching SCOTINOPHARA COARCTATA using an Alternative Light Trap via Light Emitting Diodes	70
<i>Dennis A. Martillano (Malayan Colleges Laguna, Philippines), Kimberly F. Catabui (Malayan Colleges Laguna, Philippines), and Genald Christian N. Manloctao (Malayan Colleges Laguna, Philippines)</i>	

Blockchain and Digital Economy

Blockchain Technology Applications in Retail and Insurance Sectors: Cases from Suning and PingAn	80
<i>Yuejun Cai (The Hong Kong Polytechnic University, China) and Cong Qi (The Hong Kong Polytechnic University, China)</i>	
Conception of Applying Sovereign Blockchain Technology to Improve Tax Credit Management in Guangdong Province, China	85
<i>Qingnian Wang (South China University of Technology, Guangzhou, P.R. China), Danxia Qiu (Guangdong Polytechnic College, Zhaoqing, China), Xinyi He (South China University of Technology, Guangzhou, P.R. China), Li Wu (South China University of Technology, Guangzhou, P.R. China), and Yanfei Zeng (South China University of Technology, Guangzhou, P.R. China)</i>	
The Implementation of Smart Contract via Blockchain Technology in Supply Chain Management: A Case Study from The Automotive Industry in Turkey	90
<i>Hasan Basri Yuksel (Doğuş Bilgi İşlem ve Teknoloji Hizmetleri A.Ş, Turkey), Serdar Bolat (Doğuş Bilgi İşlem ve Teknoloji Hizmetleri A.Ş, Turkey), Hayreddin Bozkurt (Doğuş Bilgi İşlem ve Teknoloji Hizmetleri A.Ş, Turkey), Ahmet Yucekaya (Kadir Has University, Turkey), and Mustafa Hekimoglu (Kadir Has University, Turkey)</i>	
Cross-Hospital Access of Electronic Medical Records on Blockchain Platform	95
<i>Hailong Yu (Nankai University, China), Chengju Jiao (Nankai University, China), Yutong Jin (Nankai University, China), Yajie Wen (Nankai University, China), and Wenchang Gao (Nankai University, China)</i>	
Lightning Insurance: A Fast Claim, High Accuracy Insurance Platform Based on Blockchain Technology and NASNET Algorithm	101
<i>Jiafeng Li (Carnegie Mellon University Silicon Valley Campus, USA), Qizhou Peng (Central University of Finance and Economics, China), Danqin Wu (Beijing University of Posts and Telecommunications, China), Yi Sun (Central University of Finance and Economics, China), and Wenyu Zhao (Central University of Finance and Economics, China)</i>	
Blockchain-Based Electronic Evidence Storage and Efficiency Optimization	109
<i>Zhikun Miao (Qinghai Normal University, China), Chengxu Ye (Qinghai Normal University, China), Ping Yang (Qinghai Normal University, China), Ying Chen (Qinghai Normal University, China), and Yutao Chen (Qinghai Normal University, China)</i>	
The Design of Reputation System for Blockchain-based Federated Learning	114
<i>Xinyan Chen (Shenzhen University, China), Taotao Wang (Shenzhen University, China), and Shengli Zhang (Shenzhen University, China)</i>	
Using Hyperledger Fabric to Reduce Fraud in International Trade	121
<i>Christopher G. Harris (University of Northern Colorado, USA)</i>	
Research on Blockchain Reshaping Integrated Enterprise Financial Information System in Digital Era	128
<i>Hui Wu (Shandong University of Finance and Economics, China) and Yu Wang (Shandong University of Finance and Economics, China)</i>	

Author Index 133