

32nd International Conference on Computer Applications in Industry and Engineering (CAINE 2019)

EPIc Series in Computing Volume 63

San Diego, California, USA
30 September – 2 October 2019

Editors:

**Quan Yuan
Yan Shi
Les Miller**

**Gordon Lee
Gongzhu Hu
Takaaki Goto**

ISBN: 978-1-7138-0317-1

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© (2019) by the International Society for Computers and Their Applications
All rights reserved. Reproduction in any form without the written consent of ISCA is prohibited.

ISBN: 978-1-7138-0317-1

Printed with permission by Curran Associates, Inc. (2020)

For permission requests, please contact the International Society for Computers and Their Applications
at the address below.

International Society for Computers and Their Applications
64 White Oak Court
Winona, MN 55987
USA

Phone: (507) 458-4517

isca@ipass.net

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

HIGH-DIMENSIONALITY GRAPH DATA REDUCTION BASED ON PROPOSING A NEW ALGORITHM.....	1
<i>Lamyaa Al-Omairi, Jemal Abawajy, Morshed Chowdhury, Tahsien Al-Quraishi</i>	
BIOMEDICAL APPLICATION OF THE EVOLUTIONARY HIGHER-ORDER SPECTRUM.....	11
<i>Abdullah Al-Shoshan, Abdulmalik Al-Shoshan</i>	
MACHINE LEARNING AS AN EFFICIENT DIAGNOSTIC TOOL FOR FAULT DETECTION AND LOCALIZATION IN SOLAR PHOTOVOLTAIC ARRAYS	21
<i>Masoud Alajmi, Sultan Aljahdali, Sultan Alsaheel, Mohammed Fattah, Mohammed Alshehri</i>	
BLOCKCHAIN TECHNOLOGY APPLIED TO ELECTRONIC HEALTH RECORDS	34
<i>Suboh Alkhushayni, Du'A Al-Zaleq, Nadine L Gadjou Kengne</i>	
CBR-ODAF: A CASE-BASED REASONING FOR THE ONLINE DIAGNOSIS OF ALL INTERNAL FAULTS IN AUTOMATED PRODUCTION SYSTEMS.....	43
<i>Nourhène Ben Rabah, Ines Ben Tekaya, Moncef Tagina</i>	
AI BASED DATA ARCHITECTURE IMPACT ANALYSIS	53
<i>Debasis Chanda</i>	
A BIOMETRIC FOR SHARK DORSAL FINS BASED ON BOUNDARY DESCRIPTOR MATCHING	63
<i>Taina Coleman, Jucheol Moon</i>	
INTERCROSS: A BREEDING APPLICATION FOR HIGH-THROUGHPUT PHENOTYPING	72
<i>Chaney Courtney, Mitchell Neilsen</i>	
A STRATEGY TO EVALUATE AND MEASURE THE DEGREE OF OPENNESS OF CLOUD SERVICES ENVIRONMENT.....	80
<i>Narayan Debnath, Mario Gabriel Peralta, Carlos Humberto Salgado, Lorena Baigorria, German Montejano, Daniel Riesco, Emdad Ahmed</i>	
A PURPOSEFUL SYSTEMS DESIGN APPROACH FOR CYBERSECURITY	90
<i>Maximilian Etschmaier</i>	
STOCK PRICE PREDICTION USING LSTM ON INDIAN SHARE MARKET	101
<i>Achyut Ghosh, Soumik Bose, Giridhar Maji, Narayan Debnath, Soumya Sen</i>	
EFFICIENT ALGORITHM FOR L(3,2,1)-LABELING OF CARTESIAN PRODUCT BETWEEN SOME GRAPHS.....	111
<i>Sumonta Ghosh, Prakhar Pogde, Narayan C. Debnath, Anita Pal</i>	
EFFICIENT CAPACITY-CONSTRAINED MULTICAST IN RC-BASED P2P NETWORKS.....	121
<i>Koushik Maddali, Banafsheh Rekabdar, Swathi Kaluvakuri, Bidyut Gupta</i>	
PROTOTYPE IMPLEMENTATION OF TEMPERATURE CONTROL SYSTEM WITH CAN AND FREERTOS ON STM32F407 DISCOVERY BOARDS.....	130
<i>Venkat Margapuri, Mitchell Neilsen</i>	
AN ALGORITHMIC APPROACH FOR FINDING MINIMUM SPANNING TREE IN A INTUITIONISTIC FUZZY GRAPH	140
<i>Kartick Mohanta, Arindam Dey, Narayan C. Debnath, Anita Pal</i>	
DESCENDING AUCTION MODEL USING MARI CONSIDERING THE CONSUMER MARKET	150
<i>Tomoki Morimoto, Satoshi Takahashi</i>	
ELEVATING BENEFICENCE IN CYBERSPACE WITH SITUATIONAL TRUST.....	160
<i>Kendall Nygard, Ahmed Bugalwi, Maryam Alruwaythi, Aakanksha Rastogi, Krishna Kambhampaty, Pratap Kotala</i>	
THE USE OF SOCIAL MEDIA BY LOCAL GOVERNMENTS: THE CASE OF MANABÍ'S CANTONS IN ECUADOR	170
<i>Gonçalo Paiva Dias, Mariuxi Bruzza, Manuel Tupia</i>	
A NOVEL APPROACH TOWARD DESIGNING A NON-DHT BASED STRUCTURED P2P NETWORK ARCHITECTURE.....	182
<i>Indranil Roy, Bidyut Gupta, Banafsheh Rekabdar, Henry Hexmoor</i>	
AUGMENTED REALITY APPLICATION TO ENHANCE TRAINING OF LUMBAR PUNCTURE PROCEDURE: PRELIMINARY RESULTS	189
<i>Nikolay Sargsyan, Robertson Bassy, Xin Wei, Sathish Akula, Jueting Liu, Cheryl Seals, Jeremy White</i>	
SAFEST: SECURE ACTIONS FOR FTP ENVIRONMENT WITH SMART TOKEN	197
<i>Tarek Sobh, Awad Khalil</i>	

AN ONLINE COMMUNITY SITE THAT INCORPORATES THE USE OF SOCIAL NETWORKS SOFTWARE: A CASE OF AN OPEN UNIVERSITY IN THAILAND	211
<i>Thitima Srivatanakul</i>	
THE DESIGN AND IMPLEMENTATION OF A CLOUD BASED PRESENTATION SYSTEM	221
<i>Abhijeet Ubale, Jiang Guo</i>	
A GENERIC MODEL OF THE WORLD AND INTELLIGENCE.....	231
<i>Harris Wang</i>	
TOWARDS A MICROSERVICE ARCHITECTURE FOR THE MANUFACTURING OPERATIONS LAYER	241
<i>Christoph Wunck</i>	
A SOFTWARE ARCHITECTURE FOR HANDLING COMPLEX CRITICAL SECTION CONSTRAINTS ON MULTIPROCESSORS IN A FAULT-TOLERANT REAL-TIME EMBEDDED SYSTEM.....	251
<i>Jia Xu</i>	
Author Index	