

# **38th International Conference on Computers and Their Applications (CATA 2023)**

EPiC Series in Computing Volume 91

Online  
20-22 March 2023

## **Editors:**

**Ajay Bandi  
Mohammad Hossain  
Ying Jin**

ISBN: 978-1-7138-7188-0

**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© (2023) 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: 978-1-7138-7188-0  
ISSN: 2398-7340

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

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

AI Enabled SaaS Framework for Fashion Designing .....	1
<i>Debasis Chanda, Narayan C Debnath</i>	
Quality Assurance in BPMN Models in a Biodiesel Plant .....	8
<i>Narayan Debnath, Carlos Humberto Salgado, Mario Gabriel Peralta, Daniel Riesco, Lorena Baigorria, Germán Montejano</i>	
Viability of Machine Learning in Android Scareware Detection .....	19
<i>Aayush Gautam, Nick Rahimi</i>	
Mining for Conserved Constituents and Quantities.....	27
<i>Yusuke Yokota, James Hearne</i>	
3D Objects Detection and Recognition from Color and LiDAR Data for Autonomous Driving .....	42
<i>Lian Kang, Pierre Payeur</i>	
Learning Thresholds to Select Cooperative Partners by Applying Deep Reinforcement Learning in Distributed Traffic Signal Control.....	56
<i>Shinya Matsuta, Naoki Kodama, Taku Harada</i>	
Edge Networks the Future of Cloud Computing .....	66
<i>Sean McGrath, Colin Flanagan, Xiaoxiao Liu, Liam Quinn, Liaoyuan Zeng</i>	
Crawling Based Data Collection and Data Pre-Processing .....	76
<i>Alexander Morales, Jiang Guo</i>	
Design of a New Secured Hierarchical Peer-To-Peer Fog Architecture Based on Linear Diophantine Equation .....	86
<i>Saydul Akbar Murad, Nick Rahimi, Indranil Roy, Bidyut Gupta</i>	
Alternative Approach to Achieve a Solution of Derangement Problems by Dynamic Programming .....	98
<i>Thitivatr Patanasakpinyo, Adel Sulaiman</i>	
Adaptive Fair and Cost-Effective Load Balancing in Distributed Computing Systems.....	108
<i>Satish Penmatsa, Krishna Kanth Varma Penmatsa</i>	
Infrastructure Development of Non DHT-Based Pyramid Tree Network Architecture .....	116
<i>Indranil Roy, Nick Rahimi, Bidyut Gupta, Narayan Debnath</i>	
Fake News Detection System: An Implementation of BERT and Boosting Algorithm.....	124
<i>Raquiba Sultana, Tetsuro Nishino</i>	
Overlapping Communities Discovery and Improvement .....	138
<i>Rong Yang</i>	
Using Machine Learning to Predict Airport Passenger Throughput.....	146
<i>Samuel Yi, Jiang Guo</i>	
Real-Time Temperature Control of Shell and Tube Heat Exchanger by IMC Based PID Controller.....	155
<i>Pallavi Pudur, Pandu Vankunavath, Ilaiah Sadam, Prabhaker Reddy Ginuga</i>	
A Stock Recommendation System .....	164
<i>Jashanjit Singh, John Jenq</i>	

### Author Index