

2020 Conference on Information Communications Technology and Society (ICTAS 2020)

**Durban, South Africa
11 – 12 March 2020**



**IEEE Catalog Number: CFP20G16-POD
ISBN: 978-1-7281-3771-1**

**Copyright © 2020 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:	CFP20G16-POD
ISBN (Print-On-Demand):	978-1-7281-3771-1
ISBN (Online):	978-1-7281-3770-4

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

TABLE OF CONTENTS

APPROPRIATE E-GOVERNMENT SERVICE SUPPORT AND INFLUENCES ON END-USERS	1
<i>Anass Bayaga</i>	
BIG DATA AND MACHINE LEARNING FOR FORESTALLING CUSTOMER CHURN USING HYBRID SOFTWARE.....	6
<i>Laurie Butgereit</i>	
CRITICISM OF THE ROLE OF TRUST IN E-GOVERNMENT SERVICES	10
<i>Anass Bayaga ; Michael Kyobe ; Jacques Ophoff</i>	
EXAMINING THE CHALLENGES OF INTEGRATION AND INTEROPERABILITY OF A SECURITY AND PRIVACY POLICY FRAMEWORK FOR E-GOVERNMENT SERVICES: THE CASE OF SOUTH AFRICA.....	16
<i>Anass Bayaga</i>	
IMPACT OF DEMOGRAPHICS ON PATIENTS' ACCEPTANCE OF ICT FOR DIABETES SELF-MANAGEMENT: APPLYING THE UTAUT MODEL IN LOW SOCIO-ECONOMIC AREAS	22
<i>Fazlyn Petersen ; Ziyaad Luckan ; Shaun Pather</i>	
THE ROLE OF ICTS IN THE PROVISION OF ENGINEERING EDUCATION TO VISUALLY IMPAIRED LEARNERS IN SOUTH AFRICA.....	28
<i>Sheethal Tom ; Noluntu Mpekoa ; James Swart</i>	
THE ADOPTION OF AUTOMATION IN CYBER FORENSICS	34
<i>Dean Hayes ; Michael Kyobe</i>	
MOBILE INFORMATION SECURITY AWARENESS AMONG STUDENTS IN HIGHER EDUCATION : AN EXPLORATORY STUDY.....	40
<i>Tankiso Moletsane ; Pitso Tsibolane</i>	
EMODERATION ADOPTION REQUIREMENTS FOR SECONDARY SCHOOL EDUCATION: A CRITICAL LITERATURE REVIEW.....	46
<i>Vanitha Rajamany ; Judy Van Biljon ; Corne Van Staden</i>	
A CONCEPTUAL MODEL FOR THE USE OF ARTIFICIAL INTELLIGENCE FOR CREDIT CARD FRAUD DETECTION IN BANKS	52
<i>Busisizwe Kelvin Nkomo ; Thayne Breetzke</i>	
MODELLING AND ANALYSIS OF INTERFERENCE DIFFUSION IN THE INTERNET OF THINGS: AN EPIDEMIC MODEL.....	58
<i>Emmanuel Tuyishimire ; B. Antoine Bagula</i>	
A NOVEL MANAGEMENT MODEL FOR DYNAMIC SENSOR NETWORKS USING DIFFUSION SETS	64
<i>Emmanuel Tuyishimire ; B. Antoine Bagula</i>	
PLANNING OF A SUSTAINABLE MICROGRID SYSTEM USING HOMER SOFTWARE.....	70
<i>Vinny Motjoadi ; Kayode E. Adetunji ; Prof Meera K. Joseph</i>	
A MULTIFACETED APPROACH FOR ORGANISING PATTERNS FOR THE INTERNET OF THINGS: A HIGH-LEVEL THEORETICAL DISCOURSE.....	75
<i>Vusi Sithole ; Linda Marshall</i>	
SCOPING THE ASPECTS AND CAPABILITIES OF SOUTH AFRICAN SCHOOL ADMINISTRATION AND MANAGEMENT SYSTEMS (SA-SAMS)	81
<i>Keneilwe Maremi ; Marlien Herselman ; Adele Botha</i>	
ON THE EFFICIENCY OF HETEROGENEOUS SYSTEM ARCHITECTURE FOR IMAGE PROCESSING	87
<i>Shaylin Chetty ; Simon Winberg</i>	
CIMGEN METHOD FOR GENERATING CROSS IMPACT MATRIX IN IMPACT FACTOR ANALYSIS	93
<i>Robyn C. Thompson ; Oludayo O. Olugbara ; Alveen Singh</i>	
STUDENTS' ATTITUDE TOWARDS USING A MOBILE LEARNING MANAGEMENT SYSTEM: : A LARGE, UNDERGRADUATE INFORMATION SYSTEMS CLASS.....	98
<i>Fazlyn Petersen</i>	
EXPLORING THE ROLE OF DIGITAL INNOVATION HUBS IN SOCIOECONOMIC DEVELOPMENT	104
<i>Tafara Vakirayi ; Jean-Paul Van Belle</i>	

ANTECEDENTS OF M-COMMERCE USER EXPERIENCE FROM A MILLENNIALS PERSPECTIVE IN A SOUTH AFRICAN FASHION RETAIL CONTEXT	109
<i>Shaygen Arumugam ; Jeanette Wing</i>	
ENERGY DEMAND AND TRADING OPTIMIZATION IN ISOLATED MICROGRIDS	115
<i>Richard Chidzonga ; Masimba Gomba ; Bakhe Nleya</i>	
A PRIVACY AND SECURITY PRESERVATION FRAMEWORK FOR D2D COMMUNICATION BASED SMART GRID SERVICES	120
<i>Lebogang P. Bopape ; Bakhe Nleya ; P. Khumalo</i>	
ENHANCED CONVOLUTIONAL NEURAL NETWORKS FOR SEGMENTATION OF RETINAL BLOOD VESSEL IMAGE	126
<i>Olubunmi Sule ; Serestina Viriri</i>	
CHALLENGES FACED BY EMPLOYERS WHEN USING SOCIAL MEDIA FOR RECRUITMENT AND SELECTION PURPOSES	132
<i>Obrain Murire ; Willie Chinyamurindi ; Liezel Cilliers</i>	
A FRAMEWORK FOR ADDRESSING YOUNG ADULTS' TRUST ISSUES CONCERNING MOBILE ACCESS TO ELECTRONIC HEALTH RECORDS	140
<i>Mbulelo Ngxabane ; Liezel Cilliers</i>	
ONLINE SIGNATURE VERIFICATION USING DEEP DESCRIPTORS	146
<i>Abigail Singh ; Serestina Viriri</i>	
IRENBUS: A REAL-TIME PUBLIC TRANSPORT MANAGEMENT SYSTEM	152
<i>Menzi Skhosana ; Absalom E Ezugwu</i>	
HYBRID SYMBIOTIC ORGANISM SEARCH ALGORITHMS FOR AUTOMATIC DATA CLUSTERING	159
<i>Vidushen Rajah ; Absalom E. Ezugwu</i>	
A FORMAL AND EFFICIENT ROUTING MODEL FOR PERSISTENT TRAFFICS IN THE INTERNET OF THINGS	168
<i>Emmanuel Tuyishimire ; B. Antoine Bagula</i>	
ANALYSIS OF LIMIT STATES AND TOLERANCE FIELD OF POLARIZATION MULTIPLEXING	174
<i>Martin Kyselak ; Cestmir Vlcek</i>	
DEEP LEARNING MODEL FOR FORECASTING INSTITUTIONAL BUILDING ENERGY CONSUMPTION	179
<i>Simangaliso Mlangeni ; Absalom E. Ezugwu ; Haruna Chiroma</i>	
A PROPOSED IOT BASED SMART WASTE BIN MANAGEMENT SYSTEM WITH AN OPTIMIZED ROUTE: A CASE STUDY OF GHANA	187
<i>Michael Christopher Xenya ; Emmanuel D'Souza ; Koffie-Ocloo D. Woelorm ; Robert Nii Adjei-Laryea ; Ekow Baah-Nyarkoh</i>	
EVIDENCE QUALITY ESTIMATION USING SELECTED MACHINE LEARNING APPROACHES	192
<i>Aleksandra Byczynska ; Maria Ganzha ; Marcin Paprzycki ; Mikolaj Kutka</i>	
Author Index	