



NAMIBIA
UNIVERSITY
OF SCIENCE AND
TECHNOLOGY

Faculty of Computing and Informatics
Faculty of Engineering



IEEE
COMPUTER
SOCIETY



IEEE Technical Committee
on Data Engineering

3rd International Multidisciplinary Information Technology and Engineering Conference [IMITEC]

Date: Tuesday, 23 - Thursday, 25 November 2021
Venue: Zoom
Livestream: NUST YouTube Channel
Time zone: Central Africa Time [CAT] (UTC/GMT +02:00)



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Day 1: Opening

Date: Tuesday, 23 November 2021

Time: 09:00 - 10:30

Venues

Zoom: [Click Here](#)

Meeting ID: 837 6314 1278

Passcode: @J#53D

Youtube: [Click Here](#)

Director of Ceremonies

Dr Suama Hamunyela

Acting Associate Dean: Research and Innovation,

Faculty of Computing and Informatics (FCI), NUST, Namibia

Time	Activity	Presenter/ Speaker
08:40	Joining Online Session	
09:00	Welcoming Remarks	Dr Andrew Niikondo <i>Acting Vice-Chancellor: NUST</i>
09:10	Conference Overview	Dr Edmore Chikohora <i>Senior Lecturer: FCI, NUST</i> <i>Technical Chair: 3rd IMITEC Conference</i>
09:15	Keynote Address	Prof Rajarathnam Chandramouli <i>Department: Electrical and Computer Engineering, Stevens Institute of Technology, USA</i>
09:35	Remarks: Developing a Cyber Security for Situational Awareness	Dr Stanley Shanapinda <i>CEO: Telecom Namibia</i>
09:50	Remarks	Dr Michael Sony <i>Lecturer: Mechanical and Marine Engineering, Faculty of Engineering, NUST</i>
10:05	Opening Address	Debmarine, Namibia
10:15	Vote of Thanks	Dr Colin Stanley <i>Acting DVC: Research, Innovation and Partnerships</i>
10:25	Interlude	Dr Irja Shaanika <i>Senior Lecturer: FCI, NUST</i>

Day 1: Workshops

Date: Tuesday, 23 November 2021

Time: 10:30 - 16:35

Session Chairs

Dr Attlee Gamundani

Senior Lecturer: FCI, NUST

Dr Edmore Chikohora

Senior Lecturer: FCI, NUST

Time	Activity	Presenters
10:30	Workshop 1: Data Visualization using Python	Dr Juan Klopper Stellenbosch University, SA
12:30	Lunch break	
13:30	Workshop 2: Towards Statistical Thinking and Data Science	Dr Albert Whata Sol Plaatje University, SA
15:05	Workshop 3: 3D Graphic Design/ Virtual Reality	Dr Kasper Rodil Aalborg University, Denmark
16:35	End of Workshops	

Day 2: Programme

Date: Wednesday, 24 November 2021

Time: 08:15 - 09:15

Venue

Zoom: [Click Here](#)

Meeting ID: 837 6314 1278,

Passcode: @J#53D

Youtube: [Click Here](#)

Director of Ceremonies

Prof Michael Mutingi

Associate Professor: Industrial Engineering, Faculty of Engineering, NUST, Namibia

Time	Activity	Presenter/ Speaker
08:00	Joining Online Session	
08:30	Welcoming Remarks	Prof Guy-Alain Zodi <i>HoD / Associate Professor : Computer Science, NUST, Namibia</i>
08:40	Keynote Address ICTs Impact on Media Industry, Future Research Focus	Mr Gary Stroebel <i>CEO: Future Media, Namibia</i>
09:00	Remarks	Mr Leo Maruwasa <i>Business Intelligence and Data Analytics Manager: Telecom Namibia</i>
09:15	Tea Break	
09:20 - 17:00	Oral presentations/ Parallel Sessions	

Day 2: Group A -Artificial Intelligence

Date: Wednesday, 24 November 2021

Time: 09:20 - 12:30

Session Chair

Dr Lameck Amugongo

Lecturer: Computer Science, FCI, NUST, Namibia

Session Moderator

Ms Ndinelago Nashandi

Lecturer: FCI, NUST, Namibia

Paper ID	Authors	Title of Paper
3001	Joel Madlazi, Ashwini Jadhav, Ritesh Ajoodha	Educational Data Mining: Using Knowledge Tracing as a Tool for Student Success
3007	Manuel Fakom	Influence of Contrastive Learning on Source Code Plagiarism Detection Through Recursive Neural Networks
3009	Priyank Parsotam, Tinofreyi Museba	A Heterogeneous Online Ensemble Classifier for Bankruptcy Prediction
3026	Takalani Mufamadi	Crop Recommendation using Machine Learning Algorithms and Soil Attributes Data
3030	Blessing Sibanda, Gloria Iyawa, Attlee Gamundani	Mobile Apps Utilising AI for Plant Disease Identification: A Systematic Review of User Reviews
3032	Christine Asaju, Hilma Vadapalli	Affects Analysis: A Temporal Approach to Estimate Student's Learning
3041	Andisani Nemavhola, Colin Chibaya Nixon M. Ochara	Application of the LSTM - Deep Neural Networks - in Forecasting Foreign Currency Exchange Rates
3069	Colin Chibaya Tariro Mugari	An Ants Swarm Control Ontology for Simulated Packet Switching
3031	Lonnie Matsa Guy-Alain Zodi Lusilao Fungai Bhunu Shava	Forward Feature Selection for DDoS Detection on Cross-Plane of Software Defined Network Using Hybrid Deep Learning

Group B: Digital Engineering and Applications

Date: Wednesday, 24 November 2021

Time: Time: 09:20 - 12:30

Session Chair

Mr Lawrence Madziwa

Lecturer: Mining and Process Engineering, Faculty of Engineering [FE] NUST, Namibia

Session Moderator

Mr Gabriel Nhinda

Lecturer: Informatics, FCI, NUST, Namibia

Paper ID	Authors	Title of Paper
3005	Samuel Adebusola Pius Owolawi Joseph Ojo Gbolahan Aiyetoro	Assessment of Atmospheric Turbulence Effect on the Free Space Optical Communications Links for Optimum Performance, over Western Cape, South Africa
3019	Francis Katende	The Case for Bifacial Photovoltaics in the Southern African Development Community
3074	Sastry Musti Johannes van der Walt	Accuracy Analysis of Wind Estimation for Paramotors Using Only a Smartphone
3013	Lawrence Madziwa, Mallikarjun Pillalamarry	Assessing the Performance of Machine Learning Methods in Forecasting Gold Prices
3010	Olatomiwa Akinlaja Moeketsi Mosia	Using Deep Learning and Sentiment Analysis to Identify Mismatches between Online Courses' Reviews and Ratings
3070	Dakalo Ramalivhana, Colin Chibaya, Kudakwashe Madzima	Trends Matching as a Dataset Attack Detection Strategy During Machine Learning
3043	Mukondeleli Nengwani, Colin Chibaya, Kudakwashe Madzima	Save-Points Detection for Machine Unlearning in Multiple Linear Regression Models
3006	Samuel Adebusola Pius Owolawi Joseph Ojo Gbolahan Aiyetoro	The Variation and Prediction of Visibility using Some Meteorological Parameters Over a Few Selected Stations, South Africa

Group C: ICT Development and Society

Date: Wednesday, 24 November 2021

Time: Time: 13:30 - 17:00

Session Chair

Mr Isaac Nhamu

Lecturer: Computer Science, FCI, NUST, Namibia

Session Moderator

Ms Jovita Mateus

Lecturer: Computer Science, FCI, NUST, Namibia

Paper ID	Authors	Title of Paper
3002	Paulas Kautima	Leveraging Technological Innovation and Creativity in Music Industry in Windhoek 'Backyards
3011	Israel Magodi, Khulekani Sibanda	A Framework for Using Geographic Information System and Sensor Networks in Transformation of Water Scarce Communities into Water Secure Communities: Case of Masvingo City
3014	Israel Magodi	An Analysis on Implementation of Electronic Tollgate and Once Off Toll-Billing in Zimbabwe
3015	Xolani Mti, Shalini Dukhan, Ritesh Ajoodha	The Influence of Clarity on Career Choice and Academic Success in First Year
3016	Shalini Dukhan, Ritesh Ajoodha, Siyabonga Hlomuka	To What Extent do Mark Expectations of First Years Align with their Academic Achievement within Biology-Based Degrees at a South African University?
3017	Munyaradzi Maravanyika, Rebekka Shikongo	Using the DeLone and McLean Success Model to Assess the Namibia Integrated Employment Information System (NIEIS): A Job-seeker's Perspective
3020	Irja Shaanika, Katazo Amunkete	A Critical Review of the Namibian Government IS/T Projects Assessments for Readiness Before Deployment – A STOPE View
3021	Frieda Nanyeni- Kanyemba	Integration of ICTs in the Training of English Student-Teachers in Times of Covid-19
3028	Plaxcedes Gundidza, Tichaona Munemo	ICT for Development and Society: Online Learning a Rude Wake-Up call on inclusive Education in Zimbabwean University Context

Group D: ICT Development and Society

Date: Wednesday, 24 November 2021

Time: Time: 13:30 - 17:00

Session Chair:

Dr Irja Shaanika

Senior Lecturer: Informatics, FCI, NUST, Namibia

Session Moderator:

Ms Sinte Mutelo

Lecturer: Informatics, FCI, NUST, Namibia

Paper ID	Authors	Title of Paper
3034	Tobi John	Investigation and Development of a Mobile Based Livestock Breeding Management System for Communal Farmers in Eastern Cape, South Africa.
3035	Clemensia Ganes, Gabriel Nhinda, Josephina Muntuumo	Challenges of E-commerce Adoption within a Namibian Conglomerate
3044	Ophelia Ntelamo Edmore Chikohora	Assessing Enterprise Resource Planning Implementation Challenges in Namibian Industries: A Survey
3054	Fillipus Shipulwa Suama Hamunyela	An Automated Adaptive Risk Management System for Public Financial Information Systems: A Case Study of XYZ agency
3055	Paulus Shigweda Fungai Bhunu-Shava	Designing A Secure Integration Model for E-Governance Platforms
3056	Josephina Muntuumo Anicia Peters	Designing an Interactive Game for Preventing Online Child Abuse in Namibia
3049	Raimbert Namukuwa Mercy Chitauro Fungai Bhunu Shava	Evaluation of Security Techniques used to Secure Current Optimised Water Network
3059	Rebaone Mkandla	An Evaluation of Data Consistency Models in Geo-Replicated Cloud Storage

Day 3: Opening

Date: Thursday, 25 November 2021

Time: 08:15 - 14:30

Venue

Zoom: [Click Here](#)

Meeting ID: 837 6314 1278,

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Youtube: [Click Here](#)

Director of Ceremonies

Dr Samuel Akinsola

Senior Lecturer: FCI, NUST, Namibia

Time	Activity	Presenter/ Speaker
08:00	Joining Online Session	
08:30	Welcoming Remarks	Dr Munyaradzi Maravanyika <i>Acting Associate Dean: Teaching and Learning, NUST, Namibia</i>
08:40	Keynote Address	Prof Meera Joseph <i>Department of Engineering and the Built Environment, University of Johannesburg Academic Institute of Excellence, IEEE Computer Society, South Africa</i>
09:00	Remarks	Dr Mooloki Mangwala <i>Acting Director: Technology Transfer, Botswana International, University of Science and Technology, Botswana</i>
09:15	Tea Break	
09:20 - 17:00	Oral Presentations/ Parallel Sessions	

Group E: Artificial Intelligence

Date: Thursday, 25 November 2021

Time: 09:20 - 12:30

Session Chair

Dr Innocent Njini

*Senior Lecturer: School of Computer Science and Information Systems
Botswana Accounting College, Botswana*

Session Moderator

Ms Mbasuva Uakomba

Junior Lecturer: Computer Science, FCI, NUST, Namibia

Paper ID	Authors	Title of Paper
3042	Promise Mangoma, Colin Chibaya, Dephney Mathebula	Towards a CIA Vompliant RSA Hybrid Built on an Artificial Neural Network
3051	Sinte Mutelo	Artificial Intelligence: A Veritable Tool for Governance in Developing Countries
3052	Mukhethwa Mulangaphuma, Colin Chibaya, Kudakwashe Madzima	A Dynamic nDES Sequence Generator for Hiding Datasets for Machine Learning
3053	Alice Benhura, Colin Chibaya Kudakwashe Madzima	Enhancing RSA Model Using DH Principles Towards More CIA Compliant
3058	Bright Charamba Edmore Chikohora	Towards a Cost-Effective Predictive Mammogram Classification Model for Breast Cancer Diagnosis.
3060	Tokolo Kashupi Edmore Chikohora	Using NLP to Bridge Data Science Skills Gap in Namibia. A Survey
3067	Colin Chibaya, Christopher Tsakira	A Hill-Playfair Product Cipher Based on High Order Hill Matrices and 16 x 16 Playfair Tables
3068	Ntshuxeko Shirindi, Kudakwashe Madzima, Colin Chibaya	A PCA Based Biometric PIM for Access Control into Venues

Group F: Network, Information and Cyber Security

Date: Thursday, 25 November 2021

Time: 09:25 - 12:30

Session Chair

Mr Kudakwashe Madzima

Lecturer: Computer Science and Information Technology, Sol Plaatje University, SA

Session Moderator

Ms Teresa Chikohora

Lecturer: Informatics, FCI, NUST, Namibia

Paper ID	Authors	Title of Paper
3003	Paulas Kautima	Information security services, mechanisms and ICT policy in practice: a case of the University of Namibia
3012	Eva-lisa Nawa Mercy Chitauru Fungai Bhunu Shava	Assessing Patterns of Cybercrimes Associated with Online transactions in Namibia Banking institutions' cyberspace
3022	Isaac Nhamu Marsela Rita John Katanga Anéne Abigail Hoff	Conducting Effective Digital Forensics Investigations in the COVID-19 Era
3029	Gabriel Nhinda Fungai Bhunu Shava	Towards the use of Participatory Methods in Cybersecurity Research in Rural Africa: A Grassroots Approach
3045	Rodney Sebopelo	A Review of Intrusion Detection Techniques in the SDN Environment
3047	Ednard Toivo, Alicia Kambrude, Attlee Gamundani	Packet Forensic Analysis in Intrusion Detection Systems
3062	Lerako Mogomeli	A Study on the Impact of Network Vulnerability Scanners on Network Security
3061	Teresa Chikohora Edmore Chikohora	An Algorithm for Selecting a Data Mining Technique
3038	Nkosinathi Mpofu Ronald Chikati	Operational Framework for Enhancing Trust in Identity Management as-a-Service (IdMaaS)

Group G: Computer Systems, Networks & Applications

Date: Thursday, 25 November 2021

Time: 13:00 - 14:30

Session Chair

Mr Julius Silaa

Lecturer: Computer Science, FCI, NUST, Namibia

Session Moderator

Mr Edward Nepolo

Lecturer: Computer Science, FCI, NUST, Namibia

Paper ID	Authors	Title of Paper
3024	Zibuyisile Mugubane, Paul Tarwireyi, Adnan Abu-Mahfouz, Mathew Adegun	Extended Context-Aware and Load Balancing Routing Protocol for Low Power and Lossy Networks in IoT Networks (ECLRPL)
3025	Banele Simelane, Isaiah Adebayo, Mathew Adigun	Evaluating the Effect of Mobile Applications on Cloudlet Placement
3033	Tobi John	Investigation and Development of a Mobile Based Livestock Breeding Management System for Communal Farmers in Eastern Cape, South Africa
3037	Junias Uushona, Ednard Toivo, Victor Ndevaetela, Attlee Gamundani	Network Forensics in a BYOD Environment
3040	Christopher Makhoere, Osden Jokonya, Koga Gorejena	Evaluating SDN Adoption Benefits: Case Northern Cape Higher Institutions

Group H: Multimedia Computing and Technologies

Date: Thursday, 25 November 2021

Time: 13:00 - 14:30

Session Chair

Dr Nkosinathi Mpfu

*Lecturer: School of Computer Science and Information Systems
Botswana Accounting College, Botswana*

Session Moderator

Mr Simon Muchinenyika

Lecturer: Computer Science, FCI, NUST, Namibia

Paper ID	Authors	Title of Paper
3023	Kgaotsang Thamoethata, Bassey Isong, Nosipho Dladlu, Adnan Abu-Mahfouz	Analysis of IoT-based Vehicle Anti-Theft Security Systems
3008	Raoul Kientegua	Towards an Improved Tool for Internet Exchange Points
3046	Tebogo Kgogo	A Survey of Resource Allocation and Controller Placement Problem in SDN-SDWSN
3048	Mabedi Motimedi Edmore Chikohora	Location Privacy Protection Techniques for Mobile Location-based Services. A Survey
3059	Rebaone Mkandla	An Evaluation of Data Consistency Models in Geo-Replicated Cloud Storage
3063	Olorato Bafithile	An Evaluation of Current Researches Aimed at Enhancing Handwritten Signature Recognition and Verification System

Valedictory Session

Date: Thursday, 25 November 2021

Time: 14:40 - 15:00

Venue

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Director of Ceremonies

Dr Mercy Chitauru

Senior Lecturer: Computer Science, FCI

NUST, Namibia

Time	Activity	Presenter/ Speaker
14:40	Concluding Remarks	Dr Samuel Akinsola <i>Senior Lecturer: Informatics, NUST</i> <i>Local Technical Chair: 3rd IMITEC Conference</i>
14:50	Remarks	Dr Colin Stanley <i>Acting DVC: Research, Innovation and Partnerships</i> <i>General Chair: 3rd IMITEC Conference</i>
15:00	Vote of Thanks	Prof Fungai Bhunu Shava <i>Acting Dean: FCI</i> <i>NUST, Namibia</i>



NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

IMITEC Conference

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