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UNIVERSITY
OF SCIENCE AND
TECHNOLOGY

UNESCO Chair on Secure
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Computing for Higher
Education Research



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Chair

Programme

The IEEE Sponsored 2024 International Conference on Emerging Trends in Networks and Computer Communications (ETNCC)

Date: Tuesday, 23 July - Thursday, 25 July 2024

Time: Central Africa Time (CAT) (UTC/GMT +02:00)

Link: <https://etncc.nust.na>



INDIA - NAMIBIA CENTRE OF EXCELLENCE IN INFORMATION TECHNOLOGY



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IEEE
South Africa Section

Opening of International Conference on 2024 Emerging Trends in Networks and Computer Communications (ETNCC)

Date: Tuesday, 23 July 2024,

Time: 09:00 - 11:00 (CAT)

Venue: Zoom (Online) and HTTPS NUST (In person)

Ms Kuda Brandt

Director of Ceremonies

Science and Innovation Communication Specialist

Directorate: Research, Innovation and Partnerships, NUST

Time (CAT)	Activity	Presenter/Speaker
09:00	National and AU Anthems	
09:05	Welcoming Remarks	Dr Eroid Naomab <i>Vice-Chancellor: NUST</i>
09:15	Overview of the Conference	Prof Dharm Singh Jat <i>TPC Chair</i> <i>UNESCO Chairholder</i> <i>Chairman: ACM Windhoek Chapter</i>
09:20	Remarks	Mr Ferdinand Katire <i>Acting Deputy Secretary-General:</i> <i>Namibia National Commission for UNESCO</i> <i>Secretariat, Ministry of Higher Education,</i> <i>Technology and Innovation</i>
09:30	Remarks	Mr Riaan Burger <i>Chief Executive Officer</i> <i>Namdeb Diamond Corporation</i>
09:40	Remarks	Dr Licky Erastus <i>Managing Director: Mobile</i> <i>Telecommunications Limited, Namibia</i>
09:50	Remarks	Dr Udochukwu Akuru <i>Chair: IEEE South Africa Section</i>
10:00	Remarks	Prof Anicia Peters <i>Chief Executive Officer (CEO)</i> <i>National Commission on Research, Science</i> <i>and Technology (NCRST), Namibia</i>
10:15	Remarks	Prof Michael G. Hinchey <i>Director-Elect: IEEE Region 8 University of</i> <i>Limerick, Limerick, Ireland</i>



10:35	Official Opening Remarks	Dr Itah Kandjii-Murangi <i>Honourable Minister: Ministry of Higher Education, Technology and Innovation, Namibia</i>
10:55	Vote of Thanks	Prof Andrew Niikondo <i>Deputy Vice-Chancellor: Teaching, Learning and Technology, NUST</i>
11:00	AU and National Anthems	
11:05	Tea Break/Entertainment	
11:20	Keynote Speaker's Session Chair 1: Prof Clement Temaneh Nyah, UNAM Chair 2: Mr Gabriel Nhinda, NUST Moderator: Mr Steven Tjiraso, NUST	
11:20	An Architecture for Open Datasets of Southern Africa Towards Machine Learning Algorithms	Prof Nobert Rangarirai Jere <i>Associate Professor: Walter Sisulu University & University of Fort Hare</i>
11:40	Machine Learning Made Easy: A Case Study on Computer Vision in AWS	Prof Durgesh Kumar Mishra <i>Professor and Director: Symbiosis University of Applied Sciences, Indore, India, Director of Computer Science and Information Technology</i>
12:00	Detecting Sybil Attacks in VANETs: Advanced Techniques and Approaches	Prof Meenakshi Tripathi <i>Associate Professor: Malaviya National Institute of Technology Jaipur</i>
12:20	Emerging Metaverse Opportunities and Cybersecurity Challenges	Prof. Dr Noor Zaman Jhanjhi <i>Professor: School of Computer Science SCS, Taylor's University, Subang Jaya Malaysia</i>
12:40	Connected vehicles - Technologies beyond Electrification	Prof Akshay Kumar Rathore <i>Professor: Department of Electrical and Computer Engineering, Singapore Institute of Technology, Singapore</i>
13:00	Lunch Break	
14:00	Technical Session – D1-T1-A Chair 1: Prof Sanjay Shah, Government Engineering College, Rajkot Chair 2: Prof Jude Osakwe, NUST Moderator: Ms Ruusa lipinge, NUST	

Paper ID	Authors	Title of Paper
250	Sudhir Kumar,Vaneet Kour,Rupesh Kumar Sah,Rajiv Misra	Scalable and Accurate Anomaly Detection in 5G Networks with ConvLSTM
254	Md Al Amin, Rushabh Shah, Hemanth Tummala, Indrajit Ray	Utilizing Blockchain and Smart Contracts for Enhanced Fraud Prevention and Minimization in Health Insurance through Multi-Signature Claim Processing
51	Rakesh Podder, Sudipto Ghosh	Impact of White-Box Adversarial Attacks on Convolutional Neural Networks
290	Aidan T. Cao	SeaSense: Pioneering AI-Based Vision Integration with a GPS Drone and a Multi-function Boat for Shallow Ocean Ecosystem Study
133	Venkata Lakshmi Namburi, Srinivasa Rao Adapa, Shanti Swaroop Kumar Chamala, Manish Yerram, Pranjal Gupta, Kamal Upreti	Integrating AI and Cybersecurity: Advancing Autonomous Vehicle Security and Response Mechanisms
77	Oleksandr Veligorskyi, Roustiam Chakirov1, Maksym Khomenko	IIoT Monitoring System for Injection Plastic Molding Controllers
14:00	Technical Session – D1-T1-B Chair 1: Prof Kamal Upreti, <i>CHRIST, Ghaziabad, India</i> Chair 2: Ms Loini Iiyambo, <i>NUST</i> Moderator: Mr Eliazer Mbaeva, <i>NUST</i>	
Paper ID	Authors	Title of Paper
20	Nayeem Ahmed	Accurate Angle Detection of Rotated Rectangles Using Hybrid Architecture of Convolutional Neural Networks with Multi-Layer Perceptron and SVR
212	Prajwal Kumar, Ankur Laroia, Mehul Kumar, Avi Laroia, Kamal Upreti, Jyoti Parashar	Advancing Image Security through Deep Learning and Cryptography in Healthcare and Industry
144	Javier Montero Mart´ın,Primo Ź Podr ˇzaj,Toma Ź Po ˇzrl	Basic Implementation of a Speed-limit Traffic-sign Recognition Algorithm via PyTesseract
78	Moseli Mots’oehli	Assistive Image Annotation Systems with Deep Learning and Natural Language Capabilities: A Review

196	Saweera Tariq, Madiha Qadeer, Atique Ur Rehman, Sabeen Javed, Tahir Mohammad Ali, Azka Mir, Mariam Muzzamil	An Intelligent Technique for The Effective Prediction of Parkinson Disease
309	Prajwal Kumbar, Shamneesh Sharma, Isha Batra, Arun Malik, Farzeen Ashfaq	StorySpinner: AI Based Technique to Narrate the Web Links
14:00	Technical Session – D1-T1-C Speaker and Chair 1: Prof Shailendra Singh, <i>PEC, Chandigarh, India.</i> Chair 2: Dr Simon Munchinenyika, <i>NUST</i> Moderator: Mr Naftali Indongo, <i>NUST</i>	
Paper ID	Authors	Title of Paper
161	Srividhya B Murali, S.R.Raja, E. kanimozhi, Abdul Azeem Khan, D. Akila, Samah H. Alajmani	Cross-layer framework for IoT Data Protection using Blockchain based Federated Learning model (BCFL)
162	D. Akila, S.R.Raja, Jeyalakshmi S, M.Revathi, Farzeen Ashfaq, A. A Khan	Text Clustering on CCSI system using Canopy and K-Means Algorithm
169	CAI YICHENG, Humaira Ashraf, Uswa Ihsan, NZ Jhanjhi, Sayan Kumar Ray, A. A Khan	Prediction of health indicators based on exercise, sleep and water intake: data-based machine learning approach
175	Wan Chee Tin, Uswa Ihsan, Humaira Ashraf, Sayan Kumar Ray, Mehndi Masud, A. A Khan	Advance Facial Expression Detection Mechanism using single shot detection
181	Wan Chee Tin, Uswa Ihsan, Humaira Ashraf, Mehndi Masud, Sayan Kumar Ray, A. A Khan	Exploring an Alternative Approach: RCNN-SVM for Weed Identification in Aerial Images Captured by UAS
192	Hassan Ali, Hussain Imtiaz, Attique Ur Rehman, Sabeen Javaid, Tahir Muhammad Ali, Menwa Alshammeri Azka Mir	An Applied Artificial Intelligence Technique for Early-Stage Alzheimer's Disease Prediction
197	Amara Aslam, Arooj Ashraf, Attique Ur Rehman, Sabeen Javaid, Azka Mir, A. A Khan	Beyond Glucose Levels: A Machine Learning Perspective on Type 2 Diabetes Prediction

14:00	Technical Session – D1-T1-D Chair 1: Dr Preeti Yadav, <i>MJP Rohilkhand University, Bareilly</i> Chair 2: Ms Loini Iyambo, <i>NUST</i> Moderator: Mr Luciano Haingura, <i>NUST</i>	
Paper ID	Authors	Title of Paper
203	Irsa Imtiaz, Attique Ur Rehman, Sabeen Javaid, Tahir Muhammad Ali, Azka Mir, Mehndi Masud	Hemochromatosis Pathogenesis and Its Association with Liver Disease: An Analysis Through Machine Learning
205	Ahmed Baber, Faizan Ahmed, Attique Ur Rehman, Sabeen Javaid, Menwa Alshammeri, Azka Mir	Optimizing Heart Failure Predictive Accuracy: An Effective Approach Using SMOTE Techniques
206	Hassan Ali, M. Hamza Amin, Attique Ur Rehman, Sabeen Javed, Rafeef Tareh Suliman Alshammari Tahir Muhammad Ali	Predictive Modeling of Students' Stress Levels Using Machine Learning Algorithms
224	F Zahra, NZ Jhanjhi, Sayan Kumar Ray Tayyab, Mariam Muzzamil, Saira Muzaffar	Decreased Rank Attack Detection in IoT Networks using Machine Learning
225	Souvik Pal, NZ Jhanjhi, D. Akila, Mehndi Masud, Saira Muzaffar	Data optimization in cloud-IOT environment with enhanced SVM technique
226	Souvik Pal, NZ Jhanjhi, D. Akila, Monir Abdullah, Mamona Humayun	A Hybrid Approach towards Data optimization for cloud based IoT Environment
227	Hira Waseem, Syeda Mariam Muzammal, Ruqia Bibi, NZ Jhanjhi, Mohammad Tayyab, Saira Muzaffar	Improved Text and Structure Preserving Image Retargeting Technique
15:30	Tea Break	
15:45	Technical Session – D1-T2-A Chair 1: Prof Ramesh Chandra Poonia, <i>CHRIST, Ghaziabad, India</i> Chair 2: Mr Eliazer Mbaeva, <i>NUST</i> Moderator: Ms Sinte Mutelo, <i>NUST</i>	

Paper ID	Authors	Title of Paper
83	Devendra Chapagain, Naresh Kshetri, Bindu Aryal	Deepfake Disasters: A comprehensive review of Technology, Ethical concerns, Countermeasures, and Societal implications
237	Naresh Kshetri, Irin Sultana, Mir Mehedi Rahman, Darshana Shah	DefTesPY: Cyber defense model with enhanced data modeling and analysis for Tesla company via Python Language
126	Jatin Chopra, Priyanka Avhad, Shubham Rajendra Ekatpure, Monesh Rallapalli, Supriya Kumari, Kamal Upreti	Multi-Agent Deep Reinforcement Learning for Hybrid Motion Planning in Dynamic Environment
333	Amanda K. Newendorp, Stephen B. Gilbert, Michael C. Dorneich	User's AI Expertise (AIX): Measuring One's Mental Model of an AI System
218	Binita Saha, Utsha Saha	Cyber Resilience Calculator: A Game-Changer for Small to Mid-Sized Businesses in Allocating Information Technology Security Budgets Effectively
258	Ghazia Qaiser, Siva Chandrasekaran, Rifai Chai, Jinchuan Zheng	Deep Learning-Based Hybrid Algorithm For Detecting Cyber-Attacks
284	Shivani Modi, Saloni Ajay Gupta, Samir Char, Ved Prakash Upadhyay	Exploring Few-Shot Performance of Self-Supervised Visual Representations
15:45	Technical Session – D1-T2-B Chair 1: Dr Rashmi Chaudhry, <i>Netaji Subhash University of Technology, Delhi</i> Chair 2: Mr Edward Nepolo, <i>NUST</i> Moderator: Mr Shadreck Chitauro, <i>NUST</i>	
Paper ID	Authors	Title of Paper
229	Anum Khalid, Amber Sarwar Hashmi, Azaz Ahmed Kiani, Syeda Mariam Muzammal, Ruqia Bibi, Saira Muzaffar	Integrating Design Thinking into Software Process Improvement
233	Sami Ullah, Abdul Rehman, Attique ur rehman, Sabeen Javed, Tahir Muhammad Ali, Azka Mir, Saira Muzaffar	The Sophisticated Prognostication of Migraine Aura using Machine Learning
234	Irsa Imtiaz, Attique ur rehman, Sabeen Javaid, Tahir Muhammad Ali, Azka Mir, Mehndi Masud	The Future of Differentiated Thyroid Cancer Recurrence Prediction using a Machine Learning Framework

260	Avinash Jha, Shresthi Singh, Shamneesh Sharma, Isha Batra, Arun Malik, Saira Muzaffar	Beyond Traditional Methods: Exploring Deep Learning Techniques for Accurate Traffic Projection
261	Faisal Fayyaz Kiyani, Bushra Hamid, Mamona Humayun, Junaid M. Shaikh., Siva Raja A/L Sindiramutty	Discovery of Influential Publications using Research Article's Usage Context
263	Khalid Hussain, Md Amin Ullah Sheikh, Husin Bin Jazri, Saira Muzaffar	An Artificial Intelligence (AI) Based X-AODV Routing Protocol in Wireless Networks
264	Akibu Mahmoud Abdullahi, Muhammad Hamza Usmani, Md Amin Ullah Sheikh, David A/L Asirvatham, Saira Muzaffar	An Efficient AI Based Approach for Multimedia Traffic Management in Wireless Network
15:45	<p>Technical Session – D1-T2-C</p> <p>Chair 1: Dr Adesola Muritala Falade, <i>McPherson University, Nigeria</i></p> <p>Chair 2: Mr Julius Silaa, <i>NUST</i></p> <p>Moderator: Mr Francois Andreas, <i>NUST</i></p>	
Paper ID	Authors	Title of Paper
265	Basheer Riskhan, Muhammad Hamza Usmani, Md Amin Ullah Sheikh, Husin Bin Jazri, Navid Ali Khan	Detection of SYN Flood Attack Based on Bays Estimator (DsFaBe) in MANET
267	Halawati Abd Jalil Fufan, Basheer Riskhan, Khlaid Hussain, Husin Bin Jazri, Samah H. Alajmani	SYN Flood Attack Detection and Prevention Technique (SFADMT) in Distributed Environment
269	Ahmed Zafran Bin Ahmed Sharizan, Mohsen Marjani, NZ Jhanjhi, David A/L Asirvatham	Breast Cancer Prediction Models: A Comparative Study, limitations, and future directions using Logistic Regression, Random Forest, and K- Nearest Neighbor
270	Muhammad Dilshad, Bushra Almas, Noshina Tariq, Husin Bin Jazri, Ghadah Naif Alwakid, Jan Sher Khan	IoT Cyber Defense: Advancing DDoS Attack Detection with Gini Index in Tree Models

277	Talha Ramzan, Noshina Tariq, Umer Farooq, Husin Bin Jazri, Humaira Ashraf, Jan Sher Khan	An ANN-based Resampling Approach for Handling Imbalance and Overlapped Data
280	Sajid Khan, Bushra Almas, Noshina Tariq, Fakhreldin Saeed, Amna Faisal, Farman Ul Haq	Emotion Recognition of Human Speech using Different Optimizer Techniques
281	Timothy Louis Scott, Wei Wei Goh, Ganesh Sritheran, Sumathi Balakrishnan, Pei Pei Chong, Samah H. Alajmani, Yeong Tsann Phua	SafeMeds - Revolutionising Medication Reconciliation for Elderly Care with Digital Innovation
15:45	<p>Technical Session – D1-T2-D</p> <p>Chair 1: Dr Clement Nyirenda, <i>University of the Western Cape</i></p> <p>Chair 2: Dr Chudey Pride, <i>NUST</i></p> <p>Moderator: Ms Jordaania Andima, <i>NUST</i></p>	
Paper ID	Authors	Title of Paper
295	Di Siyu, Teoh Chee Hooi, Sayan Kumar Ray, Wei Wei Goh, Junaid M.Shaikh	Research and application of commodity recognition algorithm based on machine learning
298	YOU LINQIANG, Siva Raja A/L Sindiramutty, Humaira Ashraf, Mariam Muzzamil, Sumathi Balakrishnan	Intelligent household waste classification System based on machine learning
300	Surface Anamoly Detection using machine learning technique	Xiao weiqi, Steve Teoh Chee Hooi, Siva Raja A/L Sindiramutty, David A/L Asirvatham, Abdul Hadi Bin Mohamad
302	Paul Yong Ka Ming, Navid Ali Khan, David A/L Asirvatham, Abdul Hadi Bin Mohamad, Mohammad Tayyab, Sumathi Balakrishnan	Detecting Street Parking Occupancy Using Image Recognition with Yolo
305	Xin Ying, Raja Kumar Murugesan, Siva Raja A/L Sindiramutty, Wei Wei Goh, Sumathi Balakrishnan	Scene Text Recognition using Deep Learning Techniques
307	Lin tiang sheng, Afizan Bin Azman, Navid Ali Khan, Siva Raja A/L Sindiramutty	Reinforcement learning-based traffic signal control
308	Danish Javed, NZ Jhanjhi, Navid Ali Khan, Farzeen Ashfaq, Shampa Rani Das, Junaid M.Shaikh	Student Performance Analysis to Identify the Students at Risk of Failure

310	Piyush Singh Bora, Shamneesh Sharma, Isha Batra, Arun Malik, Farzeen Ashfaq	Identification and Classification of Rare Medicinal Plant
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Research Day (Day 2)

Theme: Societal Development through Sustainable Research and Innovation in the Digital Age.

Date: Wednesday, 24 July 2024,

Time: 08:45 - 10:30 (CAT)

Venue: Zoom (Online) and HTTPS NUST (In person)

Director of Ceremonies: Ms Rennie Munyayi

Manager: Postgraduate Development, NUST

Time (CAT)	Activity	Presenter/Speaker
08:45	Welcoming Remarks	Prof Fungai Bhunu Shava <i>Acting Executives Dean: FCI</i>
09:00	Research and Innovation Support	Dr Anna Matros-Goreses <i>Director: Project Services Unit</i>
09:20	Keynote Speaker	Stephen B. Gilbert, Ph.D. <i>Director: Human Computer Interaction, Iowa State University, USA</i>
09:40	Opening Remarks	Dr Colin Stanley <i>Acting DVC Research, Innovation and Partnerships: NUST</i>
09:50	Closing Remarks	Prof Guy-Alain Zodi <i>Associate Dean Local Chair 2024 ETNCC</i>
10:00	Tea Break	

10:15	African Research Symposium: Technical Session – -D2-T1-A Chair 1: Dr Clement Nyirenda, University of the Western Cape Chair 2: Prof Iyawa Gloria, NUST Moderator: Ms Albertina Shilongo, NUST	
Paper ID	Authors	Title of Paper
115	Mamoqenelo Morolong, Fungai Bhunu Shava, Attlee Gamundani	Investigation of Machine Learning-Inspired Security Controls Used in Protecting Health Critical Infrastructure from Advanced Persistent Threat Attacks: Review
134	Gloria Iyawa, Fungai Bhunu Shava, Suama Hamunyela, Gabriel Nhinda, Edward Chisala, Sinte Mutelo	Social media gender-based violence: Definition, classification and taxonomy from a systematic review
137	Sakaria lindombo, Mercy Chitauro	Enhancing Blockchain Layer In Smart Grid Edge IoT Devices to Improve Data Security
211	Kondjeni Ndakeva, Richard Maliwatu	Towards Predictive Modelling of Recidivism: A Case of Namibia Correctional Services
238	Ndeshihafela Kakwambi, Guy Alain Lusilao, Samuel Akinsola	A Predictive Mobility Model based on Crocodile Mobility Data for Human-Crocodile Conflict Management in Namibia
334	Ambrose Azeta, Edward Chimba, Henshaw Ekpo	Interactive Machine Learning Framework for Predicting Asthma Health Conditions Using XGBoost
337	Shivani Pandey, Vinay Rishiwal, Dharm Singh Jat, Preeti Yadav, Arpit Jain, Mano Yadav	Towards Securing the Digital Document Using Blockchain Technology with Off-chain Attribute-Based Encryption Framework

10:15	African Research Symposium: Technical Session – -D2-T1-B Chair 1: Prof Chirag S Thaker, <i>L. D. College of Engineering Ahmedabad</i> Chair 2: Ms Shilumbe Chivuno-Kuria, <i>NUST</i> Moderator: Mr Nasimane Ekandjo, <i>NUST</i>	
Paper ID	Authors	Title of Paper
113	Christine Asaju, Christine Asaju, Pius Owolawi, Chunling Tu, Etienne Van Wyk	Optimizing Access Control Systems with Automatic Plate Number Recognition: A YOLOv9 Deep Learning Approach
119	Yves Matanga, Pius Owolawi, Chunling Tu, Etienne van Wyk	Enhancing FIR Filter design with sequential niching metaheuristics: an optimal approach
209	Ntombenhle Mazibuko, Timothy Kayode, Katleho Moloji	The application of Machine learning techniques to evaluate the impact of Transmission Line compensation on fault Classification
242	Oluwaseun Tooki, Olawale Popoola	Application of Cyber-Physical System Models in Detection and Mitigation of Cyberattacks in a Transactive Energy System: A Review
244	Taahir A. Patel, Clement N. Nyirenda	Particle Swarm Optimization of Deep Learning Models for the Determination of Vehicle Hijacking Tweets
252	Takudzwa Mzembegwa, Clement N Nyirenda	Real-time Pipe Burst Localization in Water Distribution Networks Using Change Point Detection Algorithms
11:45	African Research Symposium: Technical Session – D2-T2-A Chair 1: Prof Vinay Rishiwal, <i>MJP Rohilkhand University, Bareilly</i> Chair 2: Ms Victoria Shakela, <i>NUST</i> Moderator: Mr Steven Tjiraso, <i>NUST</i>	
Paper ID	Authors	Title of Paper
256	Erica Ashipala, Jacob Ongala, Suama Hamunyela	A Customer Churn Prediction Model for Hartlief Shop & Bistro, Namibia
331	Sarina Till, Taryn Wilson, Rikurora Karamata, Metaramuje Kaundje, Franco Beukes, Shorty Kandjengo, Heike Winschiers-Theophilus	General or Specific? Retrofitting AI and IoT enabled Hydroponic grow tents for use in different climates across rural Africa



332	Angeline Mukamana, Shwele, Phulu, Metumo Shifidi, Mateus Natanael, Joseph Musenge, Naftali Indongo	A System for Early Detection of Foot and Mouth Disease in Cattle using Machine Learning
335	Ambrose Azeta, Muyideen Adewale, Patrick Omote, Funmi Onaolapo, Idowo Bakare, Steven Tjiraso	Comparative Analysis of Random Forest and Multilayer Perceptron Algorithms for Predicting Gross Domestic Product
80	Vinay Maurya, Vinay Rishiwal, Dharm Singh Jat, Mano Yadav, Preeti Yadav, Arpit Jain, Brijesh Chaurasia	Blockchain- Enabled Defence Strategy for Attacks Prevention and Detection in IoT Ecosystem
118	Hina Singh, Preeti Yadav, Vinay Rishiwal, Dharm Singh Jat, Mano Yadav, Sushil Gangwar	Reptile Search and LLE-based Node Localization in WSN-assisted IoT.
216	Olugbenga Oluwagbemi, Emebo Onyeka, Ikashi Ishieka, Anna Wieclaw, Ambrose Azeta	Design and Implementation of a Web-based Application for Managing Agricultural Health Products
11:45	African Research Symposium: Technical Session – D2-T2-B Chair 1: Prof Navneet Agrawal, <i>MPUAT, Udaipur</i> Chair 2: Mr Julius Silaa, <i>NUST</i> Moderator: Mr Johnson Billawer, <i>NUST</i>	
Paper ID	Authors	Title of Paper
76	Yuri Njathi, Ciira wa Maina	Impact of Background on Classification Performance of Camera Trap Images
243	Richard Chilipa, Clement Nyirenda	Evolving Neuro-Fuzzy Systems for Real-Time Data Processing in Internet of Medical Things
247	Thandile Nododile, Clement N Nyirenda	Advancing Blockchain-Enabled Inter Planetary File System with Substrate for Distributed Data Storage
253	Emmanuel Adetiba, obiseye Obiyemi, Jamiu Olasina	RadioModRec-1: A Large Scale Radio Frequency Dataset for Automatic Modulation Recognition Research

287	Emmanuel Adetiba, Uche Nnaji, John S. Wejin, Festus Ojesanmi, Matthew B. Akanle, Priscilla O. Ajayi, Faith O. Sweetwilliams, Surendra C. Thakur	FedMonitor:An Implementation Architecture for Monitoring of Resources and Events' Notifications on Federated Cloud Computing Infrastructures
47	Francis Canice Tochukwu Mezue, Olayinka Agboola Taofeek, Adinife Patrick Azodo`	Developing a security framework for converged OT/IT systems in USA: A risk mitigation with operational efficiency (SDG 9), and economic Policy
13:00	Lunch Break	
14:00	FCI Research Seminar D2-RS-1 Chair 1: Dr Gereon Koch Kapuire, NUST Chair 2: Mr Mike Kale, NUST Moderator: Mr Naftali Indongo, NUST	
Time (CAT)	Title	Keynote Speaker
14:00	The Imperatives for Human-centric and Explanation-aware Decision Support Systems	Prof Olawande Daramola <i>Professor: University of Pretoria, South Africa</i>
Abstract ID	Authors	Title of Abstract
A1	Katja Becker, Helvi Itenge, Selma Auuala, Joseph-David Isaacs, Heike Winschiers-Theophilus	Co-design of an Extended Reality Escape Room with Primary School Students
A2	Jason Mendes, Selma Auuala, Heike Winschiers-Theophilus, Tomi "bgt" Suovuo, Erkki Sutinen, Calkin Suero Montero, and Naska Goagoses	Bridging Spaces: A Student Perspective on Designing for Remote Presence with 3D Holograms
A3	Selma Auuala, Nestor Nathingo, Brave Kahweka, Kaulyaalalwa Peter, Isaac Makosa	Non-Player Characters (NPCs) for a more immersive HimbaVerse
A4	Rikurora Karamata, Franco Beukes, Edilson Zau, Vetumbuavi Ndjavera, Metaramuje Kaundje	Smart Agriculture In Namibia: Deploying AI And IOT For Hydroponic Farming Aimed At Rural Community Subsistence
A5	Revaldo Gertze, Shaun Kamesiepo, Erastus Matheus, Jimmy Sergio Damiao, Ernst Kandombo	Revolutionising Physiotherapy through Augmented Reality: A HoloLens 2-Based Remote Rehabilitation System



A6	Shilumbe Chivuno-Kuria	Live Design, Transform Life: Using Participatory design to co-design digital services with Havana unemployed youth.
A7	Ernst Qualify Ndangi Kandombo, Ms Ndinelago T. Nashandi	Leveraging Social Media Sentiment Analysis for Strategic Decision-Making in Broadband Services: A Case Study of Telecom Namibia.
A8	Iyaloo Haitula-Waiganjo, Jude Osakwe, Ambrose Azeta	The Four Processes of an Effective Cyber Security Policy
15:30	Tea Break	
15:45	FCI Research Seminar D2-RS-2 Chair 1: Mr Sebastian Mukumbira, <i>NUST</i> Chair 2: Ms Ruusa lipinge, <i>NUST</i> Moderator: Mr Frans Haingura, <i>NUST</i>	
Abstract ID	Authors	Title of Abstract
A9	Akot Benjamin Awanda, Dr. Simon Muchinenyika, Prof Hippolyte N. Muyingi	Designing an automated API tool for repairing API Compatibility Issues in Android Kotlin M-apps
A10	Erastus Taapopi Matheus, Gereon Koch Kapuire	Emotional Analysis in Co-Design with Ovahimba Communities using AI
A11	Uandjemwene Florence Kamukuju, Gereon Koch Kapuire	AI-Driven Content Retrieval: Exploring the OvaHimba Repository (OMU-REP)
A12	Laurinda Ndjao, Gereon Koch Kapuire	Utilising Virtual Reality to Co-Design an Educational Game Promoting Traditional Attire among OvaHimba Youth
A13	Revaldo Gertze, Gereon Koch Kapuire	Automating Ethical Engagement Protocols for the Ovahimba Indigenous Community
A14	Vetumbuavi Ndjavera, Gereon Koch Kapuire	Enhancing Livestock Marketing through the use of Mobile Applications for the Eiseb Community
A15	Albano dos Santos, Ambrose Azeta, Steven Tjiraso	Machine Learning Model for Management of Water and Natural Resources
A16	Andreas Nghikeno Kalimbo, Isaac Nhamu	A Designing an e-learning network to optimise the network performance during downtime and high load at NUST

A17	Verry Tangeni Ndasilohenda Awene, Isaac Nhamu	Assessing The Need For Cyber Threat Intelligence Communities In Higher Learning Institutions: A Case Study Of The Namibia University Of Science (NUST) and Technology and The University Of Namibia (UNAM)
14:30	Workshop on High Performance Computing for Coastal Modelling Chair: Prof Jose Quenum, <i>NUST</i> Chair: Dr Gert Cloete (Pr. Eng), <i>NUST</i> Moderator: Mr Arpit Jain	
Paper ID	Authors	Title of Paper
246	Abubakar Kamagata, Dharm Singh Jat, Attlee Gamundani, Zahir Ramli, Saravanakumar Paramasivam	Simulation and Prediction of machine learning-based storm surge forecasting model
288	Om Jadhav, Sabbi Vamshi Krishna, Prashant Dinde, Sanjay Wandhekar, Dharm Singh Jat	Analysing SpecFEM-3D's Performance on ARM A64FX Architecture with Compiler Variations
Sp-4	Prof Zahir Ramli International Islamic University Malaysia	Innovative Approaches to Coastal Beach Modelling through Advanced Techniques
15:30	Tea Break	
15:45	Workshop on High Performance Computing for Coastal Modelling Chair: Prof Jose Quenum, <i>NUST</i> Chair: Dr Gert Cloete (Pr. Eng), <i>NUST</i> Moderator: Mr Arpit Jain	
Paper ID	Authors	Title of Paper
SP-1	Gert Jacobs, Shivaan Anashpaul, Geoffrey Smith. WSP Maritime, Wezi Kasumba, Neil Andrews and Heinrich Sauerwein, Mark Bock and Paramasivam Saravanakumar, NAMDEB	Coastal Process Computational Modelling to aid Coastal Mining Operations
Sp-2	Gert Jacobs, Bindiya Ravjee, Shivaan Anashpaul, Geoffrey Smith. WSP Maritime, Wezi Kasumba, Paramasivam Saravanakumar, NAMDEB	Development of a Storm Warning System for Coastal Mining Operations

Sp-3	Gert Jacobs, Bindiya Ravjee, Shivaan Anashpaul, Geoffrey Smith. WSP Maritime and Paramasivam Saravanakumar, NAMDEB	Computational Modelling of Shoreline Evolution to aid Coastal Mining Operations
Sp-5	Dr Pravir Malik QIQuantum, Chief Technologist, USA	Quaternary Interpretation of Quantum Dynamics & Its Technological Implication
	Prof Jose Quenum, Prof Dharm Singh Jat and Paramasivam Saravanakumar	Workshop Recommendation and Way Forward
17:35	Research Day Valedictory Session	
Time	Activity	Presenter/Speaker
17:35	Feedback	From Researchers
17:50	Concluding Remarks	Prof Suama Hamunyela <i>Associate Dean</i>
17:55	Vote of Thanks	Dr Ambrose Azeta <i>Department of Software Engineering, NUST</i>
DAY 3		
Date: Thursday, 25 July 2023		
Time: 08:30 - 1:00 (CAT)		
8:30	Technical Session D3-T1-A Chair 1: Dr Satya Narayan Tazi, <i>Engineering College Ajmer</i> Chair 2: Mr Peter Gallert, <i>NUST</i> Moderator: Ms Jordaania Andima, <i>NUST</i>	
Time	Activity	Presenter/Speaker
8:30	A Proactive Scheme for Averting Deepfakes from Online Platforms	Dr Vivian Ogochukwu Nwaocha Associate Professor National Open University of Nigeria (NOUN)
Paper ID	Authors	Title of Paper
37	Syed Imran Ali, Muhammad Khurram, Subham Kumar Gupta	From Data Exploration to Classification: A Framework for EEG-Based Emotion Detection

43	Rakshit Kothari, Kalpana Jain, Naveen Choudhary	Integration of Cross-Chain Technology-Based High-Performance Blockchain Network for Industrial Internet of Things
48	Boomika A, Divyapriya E, Vanathi K, Vidhya N, Parameswaran Ramesh, Bhuvaneshwari P.T.V	Empowering Women Safety: A GPS-Enabled IoT Tracking System
81	Karthick K, Karthikeyan B, Harshan R V, Parameswaran Ramesh, Vidhya N, Shabana Parveen M, P.T.V. Bhuvaneshwari	IoT Enabled Fingerprint Based Healthcare Database Management System
49	Nidhi Sinha, Deepika S., Paras Nath Singh	Refining Lazy Learners of Machine Learning Algorithms Facing Concept Drift
8:50	Technical Session D3-T1-B Chair 1: Dr Jyoti Gajrani, <i>Engineering College Ajmer</i> Chair 2: Prof Samuel Akinsola, <i>NUST</i> Moderator: Ms Jovita Mateus, <i>NUST</i>	
Paper ID	Authors	Title of Paper
297	Saloni Garg, Ukant Jadia, Amit Sagtani, Kamal Hiran	ECG-Lense: Benchmarking ML & DL Models on PTB-XL Dataset
63	Inayatulloh, Ahmad Fathurrozi, R. Wisnu Prio Pamungkas, Fried Sinlae, Wowon Priatna, Tyastuti Sri Lestari, Muhammad Yasir, Achmad Noe'man	Building Travel Agent Partnerships in Tourism Industry Using Blockchain Technology to Increase Customer Satisfaction
72	Nazhifah Elqolby, Ntivuguruzwa Jean De La Croix, Tohari Ahmad	Reversible Data Hiding Approach in Images using Converted Secret Bits and Difference Amidst Pixels
219	Manish Verma, Pradipta Dutta, Arindam Basak, Ramesh Meena	A Comparative Study of Material Impact on Tunnel Field-Effect Transistor (TFET) Performance
160	T.Nathiya, B. Mahalakshmi, K.K. Savitha, Souvik Pal, Abdul Azeem Khan	A Comprehensive Approach to Cryptography and Security Testing in Network Defense
8:50	Technical Session D3-T1-C Chair 1: Dr Vinesh Jain, <i>Engineering College, Ajmer</i> Chair 2: Mr Isaac Nhamu, <i>NUST</i> Moderator: Ms Sinte Mutelo, <i>NUST</i>	

Paper ID	Authors	Title of Paper
56	Md. Mehedi Hassain, Jannatul Huria, Emon Barua, Humaira Delower, Md Reyad Arefin	IoT Based Smart Economic Zone Weather Monitoring System
112	Yoggy Harisusilo Putra, Ntivuguruzwa Jean De La Croix, Tohari Ahmad	Improving Secret Data Detection Using CNN via a Mixed Pooling within Images of Arbitrary Size
114	Erick Delenia, Ntivuguruzwa Jean De La Croix, Tohari Ahmad	Enhancing Steganography in Digital Images Through Neighboring Pixel Differences Expansion
176	Lit Yang Tan, Charis Kwan, Samuel Ajibade, Athirah Mohd Ramly	Artificial Intelligence Models in Power Generation for Energy Consumption Prediction
60	Md Mehedi Hassain, Md. Ariful Islam, Arif Ahamed, Kazi Mohammed Abdullah, Md. Fakwer Uddin Mazumder, Mohammed Hossain	Low Power Consumption Smart Irrigation System Using IoT
318	Sehrish Tariq, Shilpee Srivastava	Harnessing Big Data to Revolutionize Urban Public Transit
10:15	Technical Session D3-T2-A Speaker and Chair 1: Prof Husin Jazri, <i>Taylor's University, Malaysia</i> Chair 2: Dr Wanja Njuguna, <i>NUST</i> Moderator: Ms Rosetha Kays, <i>NUST</i>	
Paper ID	Authors	Title of Paper
145	Abdullah, Mahfuzul Huda, Mohammed Ayad Alkhafaji, Raaid Alubady, Ghassan Ahmed Ali	Access Controls and Privacy Measures for Electronic Health Records: Security Perspective
146	Abdullah, Mahfuzul Huda, Mohammed Brayyich, Noor Hanoon Haroon, Abdul Azeem Khan	An Exploratory Investigation into Sustaining Cybersecurity Protection through the Implementation of SETA
155	Abdullah, Anil Kumar, Kadim A. Jabbar, Mohammed Yousif Oudah, Abdul Azeem Khan	Applying a Machine Learning Framework to Improve the Efficacy of Network Intrusion Detection Systems
157	Kiruthiga R, Jeyalakshmi S., V. Vanitha, Abdul Azeem Khan, Souvik Pal	Optimization model for Machine Learning based Intrusion Detection System (OML-IDS) in Mobile-Edge computing

158	V.R.Elangovan, S.Revathi, Nusrat Jabeen T, Ahmed J. Obaid, Junaid M.Shaikh	Block Chain Technology: Anomaly Detection in Bitcoin Using RFMLP Algorithm
159	R.Priya, R.Anandha Lakshmi, C.Sudha, Souvik Pal, Ghassan Ahmed Ali, Samah H. Alajmani	Integrating IoT in Transportation for Smart City Development for Secured Data Processing
10:00	Tea Break	
10:15	Technical Session D3-T2-B Chair 1: Dr Bhavna Sharma, <i>JECRC University, Jaipur</i> Chair 2: Dr Hugh Ellis, <i>NUST</i> Moderator: Ms Katazo N Amunkete, <i>NUST</i>	
Paper ID	Authors	Title of Paper
58	Monalisa Meena, Jyoti Gajrani	Improved Malware Detection in Android through Ensemble Modeling
62	Nilesh Bahadure, Pramod Pandey, Aryan Bhutda, Rishikesh Kumbhalkar, Aditya Nittala, Jagdish Patni, Md. Khaja Mohiddin	Comparative Analysis of Workforce Adaptation and Job Evolution in the Age of Automation using Machine Learning
66	Santhi Venkatraman, Diyaa Santhosh, Samyuktha N, Sachitha C	Blockchain - Enhanced Secure and Efficient IPFS -based EHR Management: A Decentralized Approach
87	Nidhi Kundu, Sonam Chhikara, Geeta Rani, Vijaypal Singh Dhaka	A Deep Learning Based System for Automatic Sorting and Quality Grading of Citrus Fruits
90	Soumya Vaidya, Anushka Bhatnagar, Shobhit Patel, Manisha Tiwari, Pragati Khare	Emotion Analysis in Smart Journals: Bridging ML and NLP for Holistic Mental Health Monitoring
64	Inayatulloh, Ahmad Fathurroz, Aida Fitriyani, Rakhmi Khalida, Dwi Budi Srisulistiowat, Dian Hartanti, Dwi Swasono Rachmad	Blockchain Model Adoption to Improve Transaction Transparency in Claim and Refunds the General Insurance Industry
10:15	Technical Session D3-T2-C Chair 1: Dr Vishal Goar, <i>Engineering College Bikaner</i> Chair 2: Dr Richard Maliwatu, <i>NUST</i> Moderator: Mr Shoopala Nambahu, <i>NUST</i>	

Paper ID	Authors	Title of Paper
189	Ravpreet Kaur, Sarbjeet Singh	Efficient Fusion of Multi-focus images Using DeepLabv3
239	Swati Saigaonkar, Vaibhav Narawade	Classifying Temporomandibular Disorder and Trigeminal Neuralgia using Self-Supervised and Deep Learning Approach
251	Lav Upadhyay, Meenakshi Tripathi, Jyoti Grover	Performance Analysis of Ensemble Feature Selection based Network Intrusion Detection System using Ensemble Machine Learning
282	Deepak Jha, Kamal Hiran, Varnika Gupta, Sandeep Bhargava, Tarkeshwar Barua	Empowering Renewable Energy: A Comprehensive Analysis of Big Data Analytics in Innovation, Efficiency, and Sustainability
338	Palak Kaushal, Shailendra Singh, Dharam Vir	Heart-Disease Survival Analysis using Statistical and Machine Learning Approaches: A Comparison of Technique
97	Prasidhi Nandwani, Garima Jain, Sanat Jain, Ajay Kumar Phulre, Suneet Joshi, Rupayali Swaroop	Speech-Based Visual Aid for the Blind Eye using Deep Convolution Neural Network
11:45	Technical Session -D3-T3-A Chair 1: Geeta Rani, Manipal University Jaipur Chair 2: Mr Admire Kachepa, NUST Moderator: Mr Sebastian Mukumbira, NUST	
Paper ID	Authors	Title of Paper
93	Sonu, Nisha, Satya Narayan, Vinesh Jain	Enhanced Hand Gesture Recognition using Image Transformer Model and Particle Swarm Optimization
74	Indu Chandran, Kizheppatt Vipin	Multi-Hop Data Offloading in Heterogeneous Ad-hoc UAV Networks with Deep Reinforcement Learning
99	Shakshi Kattna, Abhishek Kumar, Paurav Goe	Blockchain-Enabled Thread Optimization In Cloud Environment: a Comprehensive Analysis and implementation

109	Hlrallal Solunke, Pawan Bhaladhare	An In-depth Investigation of Machine Learning Powered Blockchain Approached for Privacy Preservation
198	Priyadarshni Gupta, Praveen Kumar, Praveen Kumar, Akshun Pratap Dubey, Rajiv Misra	MEC- Assisted Task offloading using Meta-Reinforcement Learning for B5G/6G Network
11:45	Technical Session -D3-T3-B Chair 1: Dr Kamal Kant Hiran, <i>Sir Padampat Singhania University, Udaipur</i> Chair 2: Dr Phillip Santos, <i>NUST</i> Moderator: Mr Nkululeko Mthembo	
Paper ID	Authors	Title of Paper
122	Nilesh Bahadure, Neelam Singh, Saumya Deshmukh, Rutuja Durge, Shailaja Pipalatkhar, Ramdas Khomane, Tanupriya Choudhury, Jagdish Patni	Enhancing Decision-Making and Operational Efficiency through Demand Prediction using Machine Learning
214	Srinivasa Rao Adapa, Himanshu Gupta, Susmoy Mukherje, Praneeth Reddy Mallupalli, Priyanka Avhad, Kamal Upreti	Reinforcement Learning for Language Grounding: Mapping Words to Actions in Human-Robot Interaction
131	Nitin Pandey, Suresh Chandra Wariyal, Bhupesh Rawat, Deepak Negi	Analysis of Image's De-noising Techniques for Linear Imaging and Self Scanning Sensor
132	Ankita Gangwar, Geeta Rani, Vijaypal Singh Dhaka, Shrey Khandelwal	Selecting a Base Deep Learning Model for Tomato Leaf Disease Classification
213	Vinod Kumar, Priyanka S. Chauhan, Jai Advitheeya Lella, Midhilesh Momidi, Pranjal Gupta, Kamal Upreti	Advanced Sentiment Analysis: From Lexicon-Enhanced BERT to Dimensionality Reduction using NLP
141	Manas Patil, Rena Shah, Suraj Shinde, Jatin Pareek, Dhruv Chauhan, Narendra Shekokar	DocVault – A blockchain and lattice-cryptography based secure document storage platform

Valedictory Session		
Time (CAT)	Activity	Presenter / Speaker
13:00	Welcoming Remarks	Dr Colin Stanley <i>Acting DVC Research, Innovation and Partnerships</i>
13:10	Recommendations of the Conferences	Prof Dharm Singh Jat <i>Professor and UNESCO Chairholder</i>
13:20	Remarks	Prof A K Nayak <i>Pro-Chancellor: Global Open University, Nagaland</i>
13:30	Vote of Thanks	Dr Munyaradzi Maravanyika <i>Head of Department: Informatics</i>
13:40	Lunch	



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