NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

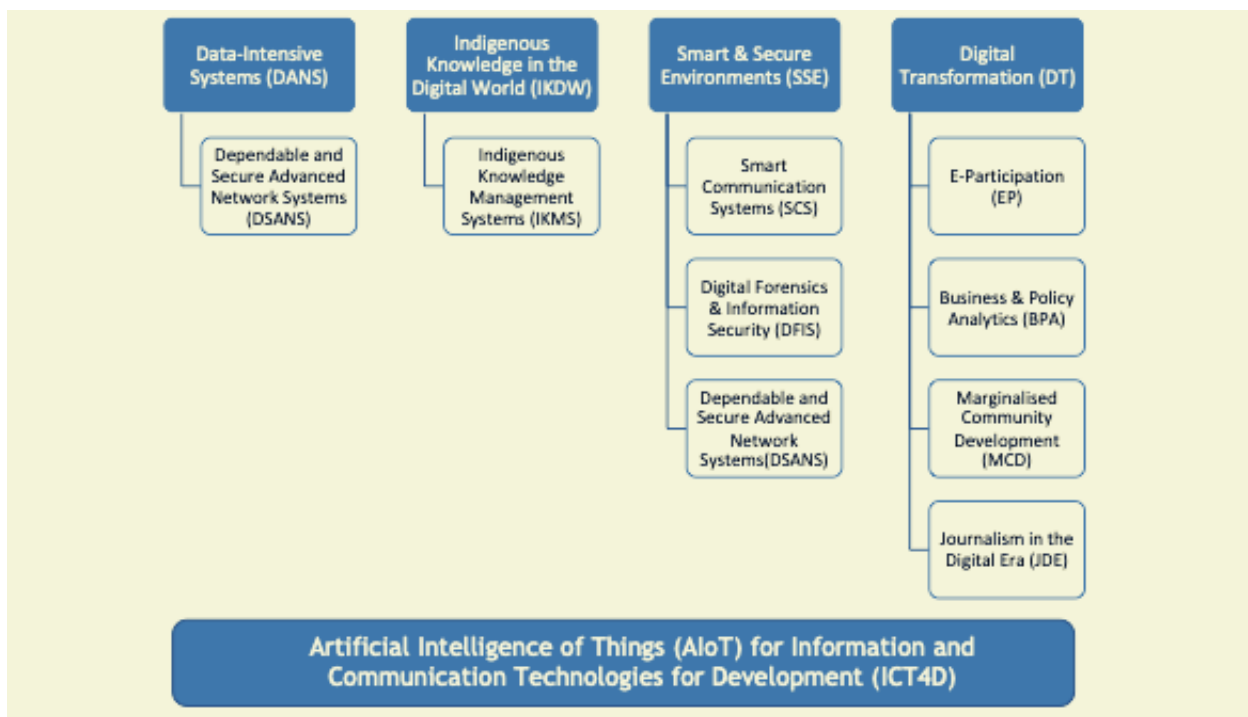## Faculty of Computing and Informatics

2022

RESEARCH REPORT

Proud hosts for the The International Conference on Information Systems and Emerging Technologies (ICISET) and International Conference on Data Science, Machine Learning and Artificial Intelligence (DSMLAI); 23 - 25 November 2022

01 Overview of FCI Research and Innovations

The Faculty of Computing and Informatics continues to excel in research, innovations and partnership at the Namibia University of Science and Technology (NUST). The Faculty has nine (9) active research clusters with several projects across the breadth of the Faculty's four (4) research niche areas: Digital Transformation, Smart and Secure Environments, Indigenous Knowledge in Digital World, and Big Data: Infrastructure & Analytics.

The faculty holds three prestigious awards of UNESCO Research Chairs, one in Digital Technologies for Gender and the other in Smart and Secure Environment covering areas of Smart Communication, Big Data: Infrastructure and Analytics and Cyber Security and a third prestigious award of UNESCO Research Chairs, in Technology Co-design with Indigenous and Marginalized Communities was secured. Staff accountable for research activities including supervision and publications are three (2) Full professors, three (5) Associate Professors and eleven (15) Senior Lecturers.

In the 2022 academic year, the FCI graduated, eight (8) Master of Computer Science and one (9) Master of Informatics students and fifteen (15) Master of Journalism and Media Technology. FCI recorded a total of 7 Journal publications and 37 conference papers, a total of six (6) peer reviewed journal publications, and 4 book chapters. The Faculty's publication output soared with support of sponsors such as the Google DARA who provided financial support, NCRST, SASSCAL and other international partners such as EU. The Computing discipline uses a conference-publishing model more compared to the journal model, and thus the high impact outlets are peer-reviewed conferences. Faculty members served as reviewers of prestigious journals and conferences such as: 2022 DSMLAI, ICISET, CHI 2022, IEEE Transactions on Industrial Informatics, Journal: African Journal of Science, Technology, Innovation and Development and Global Humanitarian Technology Conference (GHTC) 2021.

FCI Research Clusters

02 Research activities

The two flag ship research activities under the Faculty of Computing and Informatics are in: -

- Indigenous Knowledge in Digital World Research cluster and
- Cyber Security and Digital Forensics cluster

03 Brief profiles of key pacesetters

Prof. Fungai Bhunu Shava: is an Associate Professor in Cybersecurity within the Faculty of Computing and Informatics, Acting Executive Dean, and the leader of the Digital Forensics and Information Security Research Cluster. She is the founding and former chairperson of the Namibia National Cyber Security Competition and the coordinator of Africa Region to International Cybersecurity Competition (AFRICC). She supervises postgraduates and manages a few research projects in the areas of Information Security and Digital Forensics. She has published more than 50 papers in reputable journals and conference proceedings in her fields of specialisation namely Human Computer Interaction, User Experience, Network Security, Information Security in under-serviced communities.

Her work focuses on the secure use of ICTs as enabling tools for socio-economic development in developing economies and societies. She is also an International Visitors Leadership Program (IVLP) alumni and an Application Security Specialist with IBM Security AppScan v8.7. She is also responsible for other projects such as the Child Online Protection, Cisco Academy, and Instructor Training Centre at NUST. She has reviewed conference and journal papers in her areas of specialisation. She serves on the National cybersecurity stakeholder committees including the SADC Cyber-Infrastructure Technical Experts meetings, Africa to International Cybersecurity Competition and the International Cybersecurity Challenge. She has co-organised and spearheaded: Child Online Protection hackathons; WiSci STEAM Camp 2019 in collaboration with US Embassy and GirlUp; TechCamp Namibia: Cybersecurity for Everyone in collaboration with the USA government and Tech and Innovation Bazaars in collaboration with MTC. She participated in the Federal Department of Foreign Affairs, Switzerland (Geneva Dialogue on Responsible Behaviour in Cyberspace) as well as United Nations Institute for Disarmament Research (UNIDR) Cyber Stability Conferences. She actively contributes to Safety and Security Expo; Women in Computing Conferences, Google Developer's Circle, Namibia Internet Governance Forum (NamIGF), Child online Protection Taskforce, Namibia; IEEE and ACM chapters in Namibia.

Dr Attlee M. Gamundani is a Senior Lecturer in the Cybersecurity Department. He is the lead for the Artificial Intelligence of Things (AIoT) for Information and Communication Technologies for Development (ICT4D) Research cluster. He is an alumni of the United Nations University (UNU) Institute in Macau where is completed his PostDoc in 2021 focusing on AI ethics and Governance.

Dr. Gamundani is serving as the country (Namibia) representative for Responsible AI Network-Africa (RAIN-Africa). He was appointed as an Advisory Board Member and Operations- Fourth Industrial Revolution (4IR) committee for the Pan African Information Communication Technology Association (PAICTA) in 2020. Dr Gamundani's long CV consists among other publications, over 17 Journal publications, as well as over 50 Conference publications covering IoT Security, Cloud Computing Security, ICT4D, AI Security and Data Security. He delivered keynote addresses on security issues at national and international forums as well as co-authored junior level ICT Teacher's Textbooks (Grade 4, 5, 6 and 7) in Namibia. He was elevated to the Senior Member IEEE (SMIEEE) status as testimony of his wide contributions to the computer science domain. He is also a Check Point Certified Security Administrator (CCSA).

Among his main community engagement activities is the annual Namibia National Cyber Security Competition (NNCSC) which he currently chairs. He serves on the Africa Region to International Cybersecurity Competition (AFRICC) and the International Cybersecurity Competition committees.

DR GAMUNDANI'S 2022 RESEARCH PROFILE MILESTONES

Quarter 1 – 2022
- IoT Smart Gardening project (GIPE, Indonesia);
- IoT Smart Parking Project - CoW(MTC Funded);
- Visiting Faculty - Ashesi University, Ghana (Data Structures & Algorithms);
- Postgraduate Research Seminar Facilitator (Universität Leipzig, Germany).

Quarter 2 – 2022
- Personal Health Info System (GIPE, Peru);
- Cybersecurity Awareness Radio Shows (5 Shows at PAICTA & 1 Energy 100 FM -8th NNCSC Competition Overview);
- GIPE Spring School (Germany);
- Jury Member (ICC, Greece)
- 4IR AI Expo;
- 4IR RID Stream Report.

Quarter 4 – 2022
- Smart City Hunt (IoT Design);
- FinTech Digital Security Forum;
- TN Innovation Week (Hackathon);
- International Cybersecurity Webinar Hosting;
- Cybersecurity Capacity Building :The Global Constellation Annual Conference.

Quarter 3 – 2022
- Deep Learning Indaba X (Hackathon);
- IoT Innovation Challenge (Hackathon);
- NAMDEB AR/VR Challenge(Hackathon);
- SARFAI Ministerial round table Program Planning;
- SARFAI Forum Invited Speaker.
- Postgraduate Research Seminar - UNAM & Botho University , Lesotho.

Prof Jude Osakwe is an Associate Professor in the Department of Informatics. He is a member The Nigeria Computer Society and a member of the Digital transformation in the Department of Informatics. His research areas of interests are ICT in Education, Business Analytics and ICT for Development. Professor Osakwe is involved in various activities including being a Local Chair of the International Conference on Information Systems and Emerging Technology 2022 (ICISET).Together with the FCI team, he sourced conference material worth 2500USD, and 40 000ND sponsorship for the ICISET conference which will publish in the SSRN Elsevier proceedings.
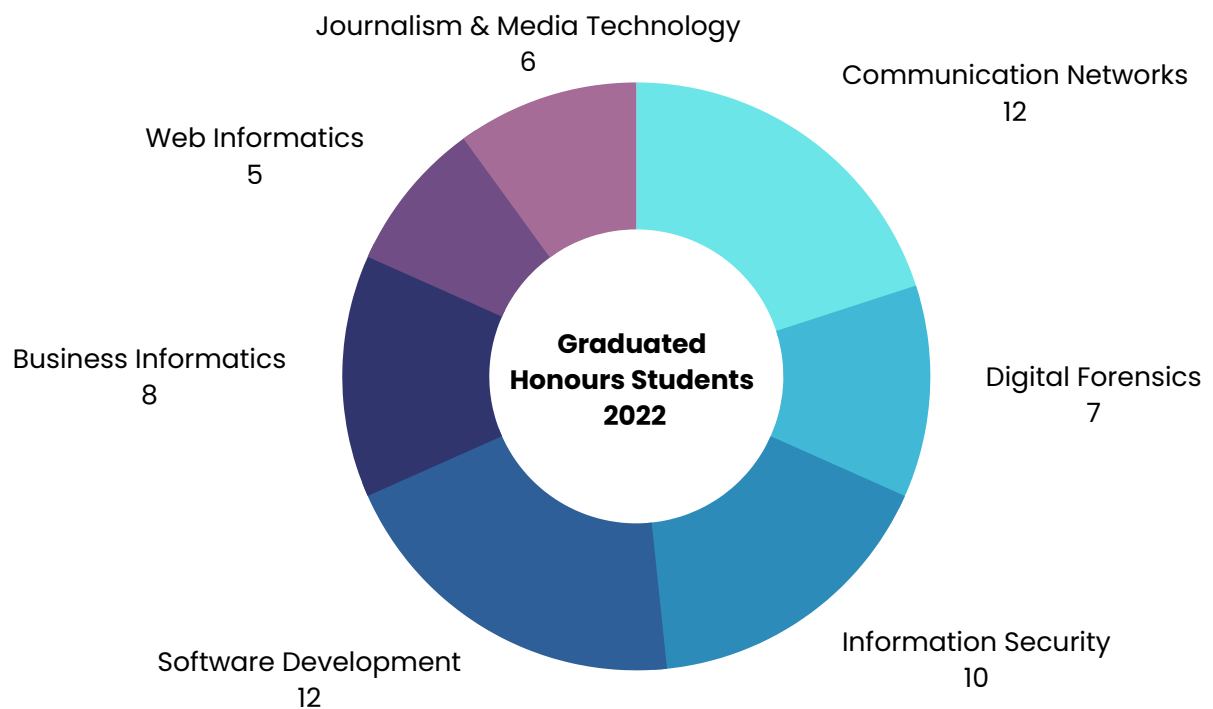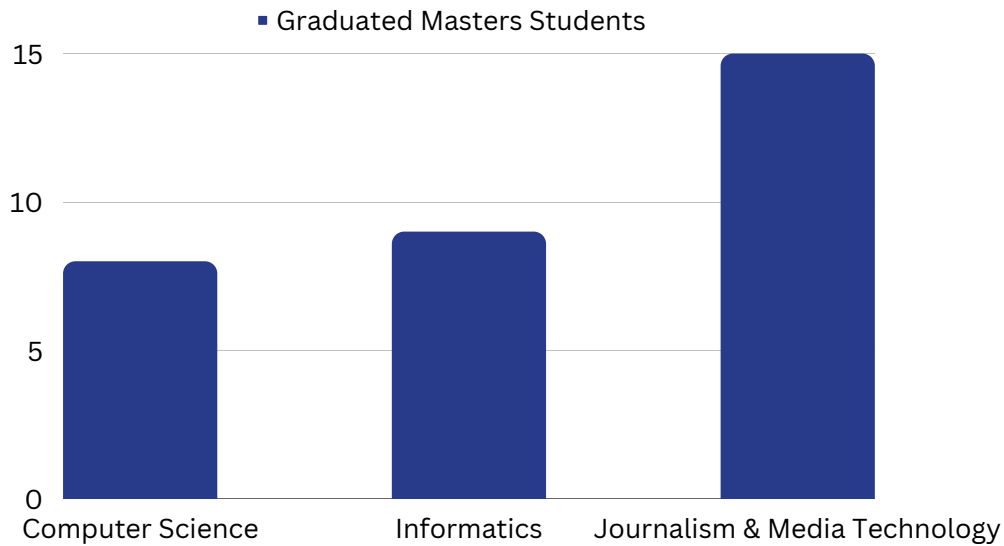

Dr Lameck Amugongo is a passionate Data Scientist. He the DARA Big Data project lead at FCI. The DARA Big Data Project provides intensive data science skills training to students from the 8 African countries who partnered to build the mid-frequency instrument of the Square Kilometre Array (SKA) telescope in Southern Africa.

Dr Amugongo holds a PhD in Cancer Science from Manchester University. His research involves investigating image-based data mining methods to analyse how lung tumors change during treatment. For the year 2022, Dr Amugongo presented at the following conferences. • Deep Learning Indaba 2022, Tunis (Tunisia). • UNESCO Southern Africa sub-regional forum on Artificial intelligence (SARFAI) 2022 (Windhoek). • Black in AI workshop co-located at Neural Information Processing Systems, New Orleans (Louisiana, US). Together with other data scientists in the Faculty, Dr Amugongo was awarded a grant (£ 8000) through DBD/OAD Infrastructure call and a DARA Big Data grant (£ 3500). The Dynamic Dr Amugongo organised the following workshops at NUST, HTTPS: • NUST-DARA Data science school 2022. • NAMDEB VR/AR Hackathon 2022 and Indaba X Namibia 2022. He is currently working on EU Horizon funded projects with collaborators at the Institute for Ethics in Artificial Intelligence at Technical University of Munich.

FCI Research Output (Publications) Jan 2022 – Nov 2022

7

Peer Reviewed Journal Articles

37

Peer Reviewed Conference Articles

11

Conference Presentations

6

Journal editing

4

Book Chapters

11

Others (Keynotes, Talks, Magazines, etc)

FCI Research Output (Graduations) Jan 2022 – Nov 2022

Graduated Masters Students

Bar chart showing Graduated Masters Students:
- Computer Science: 8
- Informatics: 9
- Journalism & Media Technology: 15

Donut chart — Graduated Honours Students 2022:
- Journalism & Media Technology: 6
- Communication Networks: 12
- Web Informatics: 5
- Digital Forensics: 7
- Business Informatics: 8
- Information Security: 10
- Software Development: 12

6 graduated with Postgraduate Certificates

04 Journal Articles

1. Ahmed Farouk, Shahid Mumtaz, Dharm Singh Jat, Heena Rathore, Zhe Li (Eds) (2022). Special Issue   Computation and Modelling of Economic and Financial Complex SystemsDiscrete Dynamics in Nature and Society, vol. 2022. https://www.hindawi.com/journals/ddns/si/705941/page/2/

2. Pietari Keskinen, Heike Winschiers-Theophilus, Shilumbe Chivuno-Kuria, Anna Müller, Marko Nieminen: Digital microwork as a livelihood strategy in a Namibian informal settlement. Electron. J. Inf. Syst. Dev. Ctries. 88(1) (2022)

3. Heike Winschiers-Theophilus, Naska Goagoses, Erkki Rötkönen, Tariq Zaman: Pushing political, cultural, and geographical boundaries: Distributed co-design with children from Namibia, Malaysia and Finland. Int. J. Child Comput. Interact. 31: 100439 (2022)

4. Heike Winschiers-Theophilus: Bridging worlds: indigenous knowledge in the digital world. JCDL 2022: 1

5. Blessing Guembe, Ambrose Azeta, Sanjay Misra, Victor Osamor, Luis Fernandez-Sanz and Vera Pospelova (2022), "The emerging Threat of AI-driven Attacks: A Review". An International Journal of Applied Artificial Intelligence. Vol 36 Issue 1. Published by Taylor & Francis Ltd. DOI10.1080/08839514.2022.2037254

6. Sitto, K., Lubinga, E., Chiumbu, S., Sobane , K. & Mpofu N. (2022). Evaluating government use of digital media during Covid-19 in Southern Africa. World Medical & Health Policy: 1-18

7. Amugongo, L. M., Green, A., Cobben, D., van Herk, M., McWilliam, A., & Osorio, E. V. (2022). Identification of modes of tumor regression in non-small cell lung cancer patients during radiotherapy. Medical Physics, 49(1), 370-381.

8. Khan, A., Milne-Ives, M., Meinert, E., Iyawa, G. E., Jones, R. B., & Josephraj, A. N. (2022). A scoping review of digital twins in the context of the Covid-19 pandemic. Biomedical Engineering and Computational Biology, 13, 11795972221102115.

05 Book Chapters

1. Jain, A., Jat, D.S. (2022). A Review on Consensus Protocol of Blockchain Technology. In: Nagar, A.K., Jat, D.S., Marín-Raventós, G., Mishra, D.K. (eds) Intelligent Sustainable Systems. Lecture Notes in Networks and Systems, vol 334. Springer, Singapore. https://doi.org/10.1007/978-981-16-6369-7_72. https://link.springer.com/chapter/10.1007/978-981-16-6369-7_72#citeas.

2.   Meyer, M., Gamundani, A. M., Becker, K., Malpartida, D., Nugroho, A., Ochoa-Luna, J., ... & Winschiers-Theophilus, H. GLOBAL INTERCULTURAL PROJECT EXPERIENCE (GIPE): A Distributed Interdisciplinary Project-Based Learning. Matalda Carmo (Ed.) Education Applications & Development VII, published by inScience Press, 2022

3.   Idemudia.E., Iyamu.T., Ndayizigamiye.P., Shaanika.I.(Eds.). (2021) Using Information Technology Advancements to Adapt to Global Pandemics (pp. 66-113). IGI Global

4. Chiumbu, S., Mpofu N. & Sobane, K. (2022). Framing COVID 19: Fear appeal messaging in the print media in Namibia & South Africa. In Dralega, C. A. & Napakol, A. (Eds). (2022). Covid-19 and the media in Sub-Saharan Africa: Media viability, framing and health communication. Emerald Publishing

06 Conference Proceedings

1. Jat, D.S., Jain, A. (2022). Implementation of Blockchain-Enabled Healthcare System using Hyperledger Fabric, DSMLAI '21': Proceedings of the International Conference on Data Science, Machine Learning and Artificial IntelligenceAugust 2021 Pages 37–47 https://doi.org/10.1145/3484824.3484914

2. Jat, D.S., Kamati, T. (2022). Honeypot Behaviour Patterns Learning for Mass Email Marketing Detection,DSMLAI '21': Proceedings of the International Conference on Data Science, Machine Learning and Artificial IntelligenceAugust 2021 Pages 48–52 https://doi.org/10.1145/3484824.3484891

3. Misra, A.K., Jat, D.S., Mishra D.K. (2022). Machine Intelligence for Predicting New Start-ups Success: A Survey, DSMLAI '21': Proceedings of the International Conference on Data Science, Machine Learning and Artificial IntelligenceAugust 2021 Pages 99 105 https://doi.org/10.1145/3484824.3484919

4. Singh, O., Yadav, M., Yadav, P., Rishiwal, V., Thakur, P., Jat, D.S. (2021). QoS-Attentive Learning-based Routing for Scalable WSNs, DSMLAI '21': Proceedings of the International Conference on Data Science, Machine Learning and Artificial IntelligenceAugust 2021 Pages 305–310 https://doi.org/10.1145/3484824.3484906

5. Jain, A., Jat, D.S. (2023). An Analysis of Supervised Machine Learning Algorithms for COVID-19 Diagnosis. In: Yang, XS., Sherratt, S., Dey, N., Joshi, A. (eds) Proceedings of Seventh International Congress on Information and Communication Technology. Lecture Notes in Networks and Systems, vol 465. Springer, Singapore. https://doi.org/10.1007/978-981-19-2397-5_71.

6. Rusere, K., Musarurwa, S., Bhunu Shava, F., Maravanyika, M. (2022). Security Concerns on Social Media Customer-to-Customer Online Transactions. A Case of Namibia Facebook Users. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022

7. Morolong M.P., Bhunu Shava F., Shilongo V.G. (2022) Designing an Email Security Awareness Program for State-Owned Enterprises in Namibia. In: Senjyu T., Mahalle P., Perumal T., Joshi A. (eds) IOT with Smart Systems. Smart Innovation, Systems and Technologies, vol 251. Springer, Singapore. https://doi.org/10.1007/978-981-16-3945-6_67 pp 679-688

8. Nelago E, Osakwe J, Iyawa G., Ujakpa M. (2022). Leveraging Technology to Enhance Effective Electronic Policing in Developing Countries. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022

9.   Osakwe J., Iyaloo N. W., Tarzoor T., Iyawa G., Ujakpa M. (2022). Determinants of Information Systems Resources for Business Organisations' Competitive Advantage: A Resource-Based View Approach. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022.

10. Osakwe J., Iyawa G., Ujakpa M. Mateus J. (2022). Gamifying Learning in High Schools: Perceptions of Students in Selected African Countries. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022.

11. Haixula P. H. Osakwe J. (2022). Effectiveness of Outsourced Information Systems in Public Sector. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022.

12. Osakwe J., Iyawa G., Ankome T. (2022). Learning Analytics Tools for Enhancing Students' Performance: A Global Perspective. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022 .

13. Shilamba M., Osakwe J., Iyawa G., Ujakpa M. (2022). The Use of Electronic Notification Systems (e-Notification system) for Registering Births and Deaths: Findings from a Developing Country. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022.

14. Ujakpa M., Osakwe J., Iyawa G., Iyaloo W., Hashiyana V., Simasiku G. (2022). Development of the Greenwell Matongo Community Library Management Information System (LMIS). Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022.

15. Ujakpa M., Iyawa G. Osakwe J. Mutasa S., Suresh N., Sakeus S. (2022). Maternity Management Information System for Katutura Hospital Maternity Department, Windhoek, Namibia. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022.

16. Ujakpa M., Mutayala M., Osakwe J., Iyawa G., Shililifa E. (2022). School Management Information System (SMIS) for the Elite College. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022.

17. Amunkete K. N., Osakwe J. (2022). Accessibility friendly? A case of Namibian online stores. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022.

18. U. Mbasuva and G. -A. L. Zodi, "Designing Ensemble Deep Learning Intrusion Detection System for DDoS attacks in Software Defined Networks," 2022 16th International Conference on Ubiquitous Information Management and Communication (IMCOM), 2022, pp. 1-8, doi: 10.1109/IMCOM53663.2022.9721785.

19. Marie Louise Juul Søndergaard, Gopinaath Kannabiran, Simran Chopra, Nadia Campo Woytuk, Dilrukshi Gamage, Ebtisam Alabdulqader, Heather McKinnon, Heike Winschiers-Theophilus, Shaowen Bardzell:Feminist Voices about Ecological Issues in HCI. CHI Extended Abstracts 2022: 90:1-90:7

20. Emilie Maria Nybo Arendttorp, Kasper Rodil, Heike Winschiers-Theophilus, Christof Magoath:Overcoming Legacy Bias: Re-Designing Gesture Interactions in Virtual Reality With a San Community in Namibia. CHI 2022: 555:1-555:18

21. Tariq Zaman, David Lim, Isaac Makosa, Naska Goagoses, Erkki Rötkönen, Helvi Itenge, Daniel Yong Wen Tan, Sydney Mutelo, Heike Winschiers-Theophilus:A Children-Created Virtual Learning Space Station. IMX 2022: 241-244

22. Nicolas Pope, Sebastian Hahta, Erkki Rötkönen, Naska Goagoses, Jason Mendes, Erkki Sutinen, Heike Winschiers-Theophilus: Remote Presence: Live Holograms for a Social Classroom. IMX 2022: 249-252

23. Winschiers-Theophilus, H. (2022, June). Bridging worlds: indigenous knowledge in the digital world. In Proceedings of the 22nd ACM/IEEE Joint Conference on Digital Libraries (pp. 1-2).

24. Winschiers-Theophilus, H., Zaman, T., Maasz, D., Muashekele, C., Mbinge, U., Jengan, G., ... & Ab Hamid, K. (2022, October). Indigenous Knowledge Fairs: a new approach to pluralistic knowledge dissemination in HCI. In Adjunct Proceedings of the 2022 Nordic Human-Computer Interaction Conference (pp. 1-5).

25. Muchinenyika, S.H., Gamundani, A.M. & Stanley C (2022). Conceptual Design of a Sensorless Smart Parking Payment Solution. 2022 IEEE 9th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications (SETIT). http://www.setit.rnu.tn/Final-Version2022/41.pdf

26. Shaanika, I. The Use of Mixed-Methods as a Research Strategy in Information Systems Studies. Proceedings of the 13th International Conference on Society and Information Technologies (ICSIT 2022), Iyamu, T., & Shaanika, I. (2022). Assessing Business Architecture Readiness in Organisations. In ICEIS (2) (pp. 506-514).

27. Nakasole, N., Chitauro, M., & Hamunyela, S. Analysing ICT initiatives towards Smart Policing to Assist African Law Enforcement in Combating Cybercrime. SETIT, Genoa-Italy & Sfax-Tunisia 28-30 May 2022. http://www.setit.rnu.tn/Final-Version2022/33.pdf

28. Simon Hlekisana Muchinenyika, Hippolyte N. Muyingi, "An Analysis of Screen Resolution Effects on Battery Endurance: A Case of Smartphones," in 2022 IEEE 9th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications (SETIT), 2022, pp 356-360

29. Ajayi, L.K., Azeta, A., Odun-Ayo, I., Aniemeka, E.T. (2022). Acoustic Nudging-Based Model for Vocabulary Reformulation in Continuous Yorùbá Speech Recognition. In: Gervasi, O., Murgante, B., Hendrix, E.M.T., Taniar, D., Apduhan, B.O. (eds). International Conference on Computational Science and Its Applications – ICCSA 2022. pp 494-508. Lecture Notes in Computer Science, vol 13375. Springer. Malaga, Spain, July 4-7, 2022. https://doi.org/10.1007/978-3-031-10522-7_34.

30. Blessing Guembe, Ambrose Azeta, Sanjay Misra, Ravin Ahuja (2022). "Trustworthy Machine Learning Approaches for Cyberattack Detection: A Review". International Conference on Computational Science and Its Applications – ICCSA 2022. pp 265-278. Lecture Notes in Computer Science, vol 13381. Springer. Malaga, Spain, July 4-7, 2022. Proceedings, Part V. https://doi.org/10.1007/978-3-031-10548-7_20

31. Chikohora, T. T., & Esiefarienrhe, B. M. (2022). A Hybrid Framework for The Implementation of Business Intelligence Systems in Small Scale Enterprises. Journal of Information Systems and Informatics, 4(1), 40. https://doi.org/10.51519/journalisi.v4i1.221

32. Shihepo, E., Bhunu Shava, F., & Chitauro, M. (2022). Review of BYOD security awareness within Namibian enterprises. Presented at the 1st Zimbabwe Conference on Information Communication & Technology (ZCICT) 2022 9th – 10th November 2022, Harare, Zimbabwe (Virtual)

33. Musa, G., Bhunu Shava, F. (2022). Feature selection for Evaluating Deep Reinforcement Learning DDoS attack Detection Mechanisms using CICIDS2017 Dataset 74, International Conference on Information Systems and Emerging Technologies, (ICISET 2022), 23- 25 November, Windhoek, Namibia.

34. Nawa, E.T., Bhunu Shava, F., & Chitauro, M. (2022). 	Developing a Cybersecurity Framework for the Namibian Banking Institutions 	69, International Conference on Information Systems and Emerging Technologies, (ICISET 2022), 23- 25 November, Windhoek, Namibia.

35. Gerson, N., & Bhunu Shava, F. (2022). Designing A Security Model for Ehealth System in Namibia 	70, International Conference on Information Systems and Emerging Technologies, (ICISET 2022), 23- 25 November, Windhoek, Namibia.

36. Rita, M., Bhunu Shava, F., & Chitauro, M. (2022). Tech4Good, an analysis on Artificial Intelligent Powered Chatbots with Child Online Protection in Mind 	3, International Conference on Information Systems and Emerging Technologies, (ICISET 2022), 23- 25 November, Windhoek, Namibia.

37. Kanyama, M. N., Bhunu Shava, F., Gamundani, A.M., & Hartmann, A. (2022). Machine Learning Anomaly Detection Techniques Applicable to Smart Water Metering Networks – A Systematic Review. 23WNSYMP (23rd WaterNet/WARFSA/GWPSA Symposium).

38. Kavikairua J., Bhunu Shava, F. (2022). Algorithm to Impact Children's Online Behaviour and Raise their Cyber Security Awareness. International Conference on Artificial Intelligence, Big Data, Computing and Data Communication Systems (icABCD), 2022, pp. 1-7, doi: 10.1109/icABCD54961.2022.9856017. https://ieeexplore.ieee.org/document/9856017

39. Rusere, K., Musarurwa, S., Bhunu Shava, F., Maravanyika, M. (2022). Security Concerns on Social Media Customer-to-Customer Online Transactions. A Case of Namibia Facebook Users. Presented at IST-Africa 2022. May 2022., www.IST-Africa.org/Conference2022

07 Books authored/Co-authored

1. Luhach A.K., Jat D.S., Bin Ghazali K.H., Gao XZ., Lingras P. (eds) (2022). Advanced Informatics for Computing Research. ICAICR 2021. Communications in Computer and Information Science, CCIS, volume 1575). Springer Nature Switzerland AG 2022. https://doi.org/10.1007/978-3-031-09469-9

2. Poonia, K. R., Singh, V., Jat, D.S., Diván, M. S., Khan, S. M. (2022). Proceedings of Third International Conference on Sustainable Computing, SUSCOM 2021 Book Title Proceedings of Third International Conference on Sustainable Computing: SUSCOM 2021, Series ISSN 2194-5357. https://link.springer.com/book/9789811645372.

3. Nagar, A.K, Jat, D.S., Marín-Raventós, G., Mishra, D.K. (Eds.2022), Intelligent Sustainable Systems, Selected Papers of WorldS4 2021, Volume 1, Springer. https://link.springer.com/book/10.1007/978-981-16-6309-3

4. Nagar, A.K, Jat, D.S., Marín-Raventós, G., Mishra, D.K. (Eds.2022), Intelligent Sustainable Systems, Selected Papers of WorldS4 2021, Volume 2, Springer. https://doi.org/10.1007/978-981-16-6369-7

08 Conference Presentations

1. Ajai Mishra, Dharm Singh Jat, and Durgesh Kumar Mishra; An Experimental Study of Machine Learning Algorithms for Predicting Startup Success 6th World Conference on Smart Trends in Systems Security and Sustainability organised by Global knowledge research foundation 24-27 August 2022

2. Arpit Jain, Dharm Singh Jat, Edge Enabled Prognosis using Cognitive Ensemble Machine Learning Model for Time Constraint Applications. 6th World Conference on Smart Trends in Systems Security and Sustainability organised by Global knowledge research foundation 24-27 August 2022.

3. Attlee M. Gamundani; Building Responsible AI for Africa by defining the Socio-technical Constructs. Southern Africa sub-Regional Forum on Artificial Intelligence, 7-9 September 2022, Safari Court Hotel and Conference Centre, Windhoek, Namibia

4. Lameck Amugongo; AI Ethics from an African Context - A Case Study in the Health Sector. Southern Africa sub-Regional Forum on Artificial Intelligence, 7-9 September 2022, Safari Court Hotel and Conference Centre, Windhoek, Namibia

5. *Jose Quenum; Session 1 Moderator - Status of AI development and utilisation in Southern Africa. Southern Africa sub-Regional Forum on Artificial Intelligence, 7-9 September 2022, Safari Court Hotel and Conference Centre, Windhoek, Namibia*

6. *Attlee M. Gamundani and Shakela Viktoria; Distilling the encounters towards building a Namibian cybersecurity awareness platform. Global Constellation Annual Conference: Linking Cybersecurity Capacity Research to development in Africa, 2-3 November 2022, Park Inn by Radisson, Newlands, Cape Town.*

7. *Gabriel T. Nhinda and Fungai Bhunu Shava; Using co-design to craft cybersecurity secure practices for rural communities in Africa: A case study from Northern Namibia. Global Constellation Annual Conference: Linking Cybersecurity Capacity Research to development in Africa, 2-3 November 2022, Park Inn by Radisson, Newlands, Cape Town.*

8. *Nobert R. Jere , Sonwabo Mdwaba and Attlee M. Gamundani ; Co-designing a cybersecurity citizen centric framework for South Africa. Global Constellation Annual Conference: Linking Cybersecurity Capacity Research to development in Africa, 2-3 November 2022, Park Inn by Radisson, Newlands, Cape Town.*

9. *Nobert R. Jere, Attlee M. Gamundani and Sonwabo Mdwaba; Cybersecurity a national pandemic: Who is safer from cyber-attacks? Global Constellation Annual Conference: Linking Cybersecurity Capacity Research to development in Africa, 2-3 November 2022, Park Inn by Radisson, Newlands, Cape Town.*

10. *Kanyama Maria N, Fungai Bhunu Shava, Attlee M. Gamundani and Andreas Hartman; Machine learning anomaly detection techniques applicable to smart water metering networks- A systematic review. Integrated Water Resource Management for Sustainable Development in Eastern and Southern Africa, 23rd WaterNet/WARFSA/GWP-SA Symposium, Rustenburg, South Africa, 19th -21st October 2022.*

11. *Manfred Meyer, Katja Becker, Attlee M. Gamundani and Colin Stanley; A Global Intercultural Project Experience (GIPE): Reflections on Combining Online and On-site Project-Based Learning across four Continents. International Conference on Transformative Teaching: Focus on Pedagogy 2022, 15-17 November 2022. A virtual conference: Florida State University, University of Dundee, Zayed University.*

08 Others (Keynotes, Talks, Magazines, e.t.c)

1.   *Prof Dharm Singh Jat, Session Chair and speaker, 7th International Conference on Information & Communication Technology (ICICT2022), 21-24 February 2022, London, UK*

2.   *Prof Dharm Singh Jat invited talk on Smart Computing and Communication: Enabling future IoTs, International Conference on "Empowering Smart Future through Scientific Development and Technology organized by The Research Committee & Department of Computer Applications (MCA), Patna Women's College (Autonomous), Patna University, 5TH MAY 2022.*

3.   *Prof Dharm Singh Jat contributed as Resource Person in AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Security in Blockchain and Cyber-Physical Systems Design" from 17/01/2022 to 21/01/2022 at Government Engineering College, Rajkot.*

4.   *Prof Dharm Singh Jat sharing knowledge as a Speaker for the Region 10 IEEE Computer Society Mega DVP Program on the topic "Smart Computing and Communication: Enabling Future Internet of Things" on May 14th, 2022*

5.   *Prof Dharm Singh Jat, Inaugural Speaker, 6th World Conference on Smart Trends in Systems Security and Sustainability organised by Global knowledge research foundation 24-27 August 2022.*

6.   *Prof Fungai Bhunu Shava - Empowering Women and Girls in Science - promoting gender equity in science for women and girls PAICTA. (https://www.youtube.com/watch?v=G64-_Cpkh_o&t=29s)*

7.   *Dr Attlee M. Gamundani -Tech Power Talk – Cybersecurity – February 15, 2022 (radio 78.5 Pan-African Voice) Radio Show (https://www.youtube.com/watch?v=p1OfnIZgKEs)*

8.   *Dr Attlee M. Gamundani -Tech Power Talk – Cybersecurity – March 8, 2022 (radio 78.5 Pan-African Voice) Radio Show (https://www.youtube.com/watch?v=hbF5JqsUOUo)*

9.   *Dr Attlee M. Gamundani -Tech Power Talk – Cybersecurity – April 5, 2022 (radio 78.5 Pan-African Voice) Radio Show (https://www.youtube.com/watch?v=y-eNLz3pdQw)*

10. *Dr Attlee M. Gamundani -Tech Power Talk – Cybersecurity – May 17, 2022 (radio 78.5 Pan-African Voice) Radio Show (https://www.youtube.com/watch?v=FcuQ2tFBwGU)*

11. *Hickok, M., Dorsey, C., O'Brien, T., Baur, D., Ingram, K., Chauhan, C., & Gamundani, A. (2022). Case Study: The Distilling of a Biased Algorithmic Decision System through a Business Lens. Available at SSRN. (https://ssrn.com/abstract=4019672)*

09 Postgraduate Thesis Outputs 2022
Master of Computer Science (NQF-9) -[8]

Graduate Name	Thesis Title
MUSA Gabriel P	Efficient Hybrid Deep Reinforcement Learning Mechanism for Distributed Denial of Service Attack Detection in Software Defined Networks
GERSON Naemi	Designing a Security Model for Ehealth System in Namibia
JONAS Josua	Multi-Cloud Serverless Function Composition using a Hierarchical Task Network Planner
KORUHAMA Kahuhu A	A Genealogy Tool to Account for the Dual Descent Kinship among Ovaherero Descents
MATSA Lonnie S	Design of an Intrusion Detection System for Distributed Denial of Service Attacks in Software Defined Networks Using Hybrid Deep Learning
SHEHU Yakubu	An Optimized Neural-Network Based Algorithm for Semi-Automated Identification and Quantification of Wildlife on High Resolution Drone
SHINEDIMA Gabriel N	Development of an Interactive World Map Game Co-Designed by Primary School Learners in Namibia
SIBANDA Blessing K	Mobile Application for Plant Leaf Disease Classification in a Resource-Constrained Environment

Master of Informatics (NQF-9) -[9]

Graduate Name	Thesis Title
GABRIEL Emeritha N	A Conceptual model for the adoption of an online program recommender system for the Namibian Higher Educational Institutions.
MARTHIN Alfriede N	A Model for Teaching Physical Science in Namibian High Schools through the Use of ICT Platforms
NAHOLE Lukas	A Strategy for Consumer Adoption and Usage of Point-of-Sale E-Payment System in Namibia Payment System in Namibia.
KUBERSKY Brandon R	Machine Learning Model to Analyse Cattle Movement with GPS-Enabled Device Tracking in Namibia-Hardap Communal Lands
SHIPULWA Fillipus S	An Automated Adaptive Risk Management System for Public Financial Information Systems: A Case Study of the Ministry of Finance in Namibia
NAKASOLE Naftali	Developing a Smart Policing Model to Assist Namibian Law Enforcement Agencies in Combating Cybercrimes
NABOTH Rosalia N N	Developing an Enterprise Resource Planning System Conversion Model: A Case Study of the Namibia Power Corporation (PTY)
NAWA Eva-Lisa T	Developing A Cybersecurity Framework for the Banking Sector of Namibia
SHALUMBU Iyaloo S	Towards the Development of an Adaptive Strategic Framework for Digital Transformation. A Case Study of Namibia Statistics Agency

Master of Journalism and Media Technology (NQF-9) -[15]

Graduate Name	Thesis Title
NTEMWA Angela K	An exploration into the perceptions of the public relations profession among selected corporate organisations in Windhoek, Namibia. NUST
MUSHAYAVANHU Kudakwashe	Framing of the COVID-19 pandemic in Namibian National Newspapers: An analysis of The Namibian, Namibian Sun and New Era. NUST
MATSI Fransina A	Investigating the effectiveness of NAMCOL's corporate communication strategy in changing brand perceptions among selected stakeholders in Windhoek, Namibia. NUST
KOOPER Immanuel	Is Language a Barrier to Public's Participation in the Law-making Process?
MATUNDU Marina	A Reception Analysis of Omurari FM's Okaruveze Kovaremane Radio Programme for People with Disabilities
TJITUKA Floyd P	The Role of Oral Media and Radio in Promoting and Preserving Indigenous Knowledge Systems: A Case Study of Otjiherero-Speaking Communities in Kunene Region
MATTY Fidel	Examining stakeholders' views on the implications of delayed enactments of the access to information bill on media reporting in Namibia
MUNDODZI Faith	A Reception Analysis of Selected Cartoon Messages on COVID-19 by Upper Primary School Learners at Highlands Christian School in Windhoek
SHIHEPO Timoteus N	An investigation into how the Namibian print media industry is coping with contemporary economic conditions
ZVIYITA Itai	An examination of ethical issues confronting the operations of selected hybrid media organisations in the digital age in Namibia

MARE Hilary	Investigating the Implications of COVID-19 on the Sustainability of the Print Media in Namibia: A Case Study of the Namibian, Confidente and New Era
KAPENDA Jairus J J	Assessing the use of social media in the Public Relations Practices of the Government Institution Pension Fund (GIPF) of Namibia
HAMBUREE Belinda	An Evaluation of Print Media Campaigns for Promoting Road Safety in Namibia from January to December 2019
IITA Ndamonako A	Investigating Stakeholder Engagement in Public Relations Practices of two Namibian Universities. (The International University of Management and Namibia University of Science and Technology
ADETONA David A	An investigation into how newspapers adhere to copyright regulations in Namibia