



# ARTIFICIAL INTELLIGENCE SYMPOSIUM 2023

*Speakers*

# *Sponsors*

## ARTIFICIAL INTELLIGENCE

We would like to express our heartfelt gratitude and appreciation to the following partners for their support:



IFLA Special Interest Group  
**Artificial Intelligence**



IFLA Section  
**Information Technology**

**Booktalk**

Authorised Reseller of *OverDrive*® in S.Africa

**ExLibris**®

Part of **Clarivate**

**EBSCO**

**WWIS**   
WORLDWIDE INFORMATION SERVICES



# Speakers

## AI Symposium 2023

### 1 Prof. Daryl Balia, Deputy Vice-Chancellor Information Technology and Potchefstroom Campus Operations



Prof Daryl Balia, former executive dean of the NWU's faculty of Theology, was appointed as Deputy Vice-Chancellor: Information Technology and Potchefstroom Campus Operations in 2019 for a fixed term of five years. Prof Balia, a seasoned church historian, was appointed executive dean at the NWU in 2018. His illustrious career includes, among others, working as dean of the faculty of Theology at the University of Durban-Westville (where he started the Centre for Constructive Theology); international director at the University of Edinburgh and director of institutional planning, transformation, and quality assurance of the Central University of Technology in the Free State.

He also served as division head for governance at the Institute for Security Studies in Cape Town, general secretary for the International Association for Religious Freedom in the United Kingdom, and chief director for the Public Service Commission. Prof Balia has extensive experience in project management which includes being at the centre of organising national and international events. He has published several books and reports and has contributed to numerous articles and book chapters in other publications. He gained extensive experience working with academics, teachers, researchers, and students while developing and maintaining global networks for research, and teaching students (including providing Master's degree supervision), combined with periods of work and study in Germany, France, the United States, England, Scotland and South Africa.

Working cross-culturally has been integral to all the positions he held over the past two decades and he also shares wide-ranging experiences of interacting with the scientific community in all the continents of the world. His most critical strength is 'to inspire and unite staff and students in educational settings and other contexts as well, coupled with his global connections, government and civil society work experiences, and his personal and professional standing in the academy of learning. To lead in digital business and information technology innovation is one of his key goals for the NWU to set as a goal for itself. The critical matter of making the unitary structure work in actual practice across all our campuses in line with the national imperatives of social cohesion and diversity planning is paramount in my position as DVC Information Technology and Potchefstroom Campus Operations.

**Title: Welcoming Address.**

### 2 Dr. Edmund Balnaves IFLA Divisional Chair



Dr. Edmund Balnaves the CEO of Prosentient Systems (Australia) and an active technologist in the library field. He is the Chair of the Information Technology (IFLA) Section in the International Federation of Library Associations and is an incoming Divisional Chair of IFLA.

He is actively engaged in the software development of open-source systems, AI, and discovery for libraries. His doctoral research was in systematic content reuse and metadata. His business provides hosted open-source library services, AI-enabled discovery, and multi-network library resource-sharing systems.

His Inter-Search™ hosted services are used by over 500 libraries in Australia and the Asia Pacific region.





### **Title: AI on the move: From the Skynet to ChatGPT**

**Abstract:** This presentation explores Artificial Intelligence services relevant to libraries, including the role of Artificial Intelligence in library service delivery. The presentation provides an overview of the different ways AI can be applied in the library context, including machine learning, GPT-enhanced chat, integration with building services and facilities, fully automated services, and Robotic-based service delivery. ChatGPT is only one dimension of Artificial Intelligence, and the tool kits for AI are accessible and allow libraries of many types to explore the new technologies.

### **3 Ms. May Chang Library Chief Technology Officer, University of Cincinnati, USA**



May Chang is the Library Chief Technology Officer at the University of Cincinnati, USA, with more than 15 years of work experience in ICT and libraries. Her professional and research interests include digital transformation of organizations, digital equity and literacy, and IoT and smart and connected communities.

She is an active member of IFLA as an IT Section Mentor, AI SIG Committee Member, and Library Buildings & Equipment Section Committee Member. She also serves on the Editorial Advisory Board of Library Hi Tech.

### **4 Ms. Iman Magdy Khamis MLIS, MSDS, Library Director, Northwestern University Qatar.**



Northwestern University Qatar library director and a data scientist recently graduated from Northwestern University. Iman has been working in libraries since 2005, where she started her career in Bibliotheca Alexandrina before moving to Northwestern University Qatar. Iman's research interests are Machine Learning and Artificial Intelligence in Libraries. She is the author of two chapters in the recently published Handbook of Research on Advancements of Contactless Technology and Service Innovation in Library and Information Science. The chapters' titles are Chatbot for Libraries and Book Recommender System. In these two chapters, Iman explained in detail the concepts used by data scientists to build chatbots and Book Recommender Systems.

#### **Title: Generative AI and Libraries: Challenges and Opportunities**

**Abstract:** With the rise of generative artificial intelligence (AI), everyone is trying to imagine the future of most professions with incredible technological advances. Machine learning and Artificial intelligence have transformed library services drastically in the past few years. We have seen most Public and Academic libraries embracing AI in their daily service in a manner that enhanced the user experience overall. The question that is rising now is whether Generative AI such as ChatGPT and similar software will improve library services and librarianship or will be the enemy of our profession.

We can explain Generative AI as a tool that allows computers to process vast amounts of data and make accurate predictions in a form that is understandable to humans. Open AI's ChatGPT-3 is a language model trained on extensive data since June 2021. When ChatGPT-4 was released, it required a subscription for this research, so we chose to use ChatGPT-3. This exploratory study will determine whether libraries should be concerned with their future in the presence of generative AI technologies. We will do that by evaluating ChatGPT-3 potential to predict the future of libraries and library services. In this research, we analysed ChatGPT-3 predicted future scenarios by examining the prediction consistency and evaluating the results based on criteria. According to the results,



ChatGPT-3 was able to accurately predict different scenarios for the library's future, enabling the researchers to identify areas that will require development soon.

However, it is essential to mention that ChatGPT-3 predictive power was constrained, and the predicted scenarios may be improved. Noting that the researcher looked for qualifiable indicators to examine the probability of predicted scenarios being true. In conclusion, the investigation showed that ChatGPT-3 has excellent power for altering the library's future in a better direction.

## 5 Ms. Susan Veldsman Director of the Scholarly Publication Unit, Academy of Sciences in South Africa.



Susan Veldsman is Director of the Scholarly Publication Unit at the Academy of Sciences in South Africa, responsible for driving the Open Science agenda, raising the visibility, discoverability, and accessibility of South African scholarly journals, improving the quality of SA research output, and supporting the development of policy frameworks to facilitate optimal use and access to publicly funded research. She received the Electronic Publishing Trust (EPT) award for her outstanding contribution to promoting Open Access in Developing Countries. She was recently the Co-chair of the IAP Report on "Combating Predatory Journals and Conferences", launched on the 16th of March 2022.

**Title: Artificial intelligence and associated tools and policies in editorial decision making.**

**Abstract:** Researchers began experimenting with ChatGPT when it was released in November 2022, looking at ways they could benefit and how it could support writing systematic reviews, literature searches, summarising academic articles, etc., which many publishers wanted to reject before the trend gained traction. Some publishers quickly updated their respective editorial and publishing policies, stating unconditionally that ChatGPT can't be listed as an author on an academic paper. There were also those publishers who addressed this 'grey area' differently regarding whether ChatGPT can be used for assistance in the research process through the level of detail and clarity of their policies. One notable exception is ACS, which is taking a proactive approach to defining guidelines on the proper use of AI technologies. An ACS Energy 'Viewpoint' piece considers the possibility that ChatGPT could implement an 'assisted-driving approach promising to free researchers' time from the burden of scientific writing and free up their time for other research and science activities. An editorial in ACS Nano outlines detailed best practices and policies for using AI tools. Another issue is whether traditional plagiarism checkers have caught up to AI detection, and can those tools be fooled in some way or another? The presentation is aimed at discussing and gaining clarity on these various issues.

## 6 Dr. Kirstin Krauss Manager for Iontaofa Intelligence.



Kirstin Krauss is a Business Development Manager for Iontaofa Intelligence, a company that promotes quality scholarly communications. He is also a part-time Research Advisor of Worldwide Information Services (WWIS) and a visiting researcher for STADIO Higher Education. In prior roles, he served as an academic and Professor at several academic institutions in South Africa, including CPUT, UKZN, UP, Rhodes, and UNISA. Kirstin's research focuses mainly on postgraduate student development, supervision capacity building, ICT for Development, Critical Ethnography, and mitigating questionable scholarly practices.

**Title: Disciplinary Knowledge and Comparative Prompting Strategy Analysis. How an Academic Librarian and a Researcher Approached Topic Discovery and Keyword Identification using AI as a tool.**

**Abstract:** Academic librarians and researchers are critical partners in the typical topic discovery process, as they identify relevant literature, develop search strategies, organorganiserature, and build



bibliographies. From a librarian's perspective, it is about employing practical information retrieval skills to support the researcher. On the other hand, researchers are interested in developing a conceptual basis, namely a literature review, that can inform various methodological choices. These choices range from identifying knowledge gaps and relevant literature on the topic to finding literature on appropriate methodologies and theories. Consequently, librarians should possess a deep understanding of the researcher's needs to effectively assist them during the topic discovery phase. Usually, the process starts with a researcher approaching the librarian with a broad topic of interest.

The librarian then guides the researcher in identifying relevant databases, keywords, and literature search strategies. Additionally, the librarian helps produce a bibliography that researchers can further develop throughout the research process. On the other hand, the researcher typically filters through the references to identify key papers that could inform critical aspects of the research. Topic and literature discovery is a partnership between an academic librarian and a researcher. Therefore, both specialists should have an intricate understanding of what topic discovery entails.

**Title: Can I use ChatGPT to generate a fully AI-authored thesis? Reflecting on prompting strategies, useful detection tools.**

**Abstract:** In this paper, an academic librarian and a researcher reflect on how their respective disciplinary backgrounds informed their approaches to topic discovery, specifically utilising AI as an assistive tool. Following the typical process, the researcher proposed a broad research topic. Both individuals then independently experimented with prompting strategies using AI and additional information sources to identify the most relevant bibliography and refine the topic statement. All prompting scripts and other methods were recorded and subsequently compared. The authors conclude by providing guidance on the value of AI and offering recommendations for effective collaboration during the topic discovery process.

**7 Dr. Mashilo Modiba**  
**Senior Lecturer, Department of Information, UNISA**



Dr Mashilo Modiba is a senior lecturer at the Department of Information at UNISA. His research interests include adopting and applying AI, robotic machines, cobots, IoT, big data, and cloud computing in the LIS, including archives and records management. Another research interest is in the development of intelligent libraries in South Africa.

**Title: Application of artificial intelligence for the management of library and information services in the Fifth Industrial Revolution**

**Abstract:** Though artificial intelligence (AI) played a significant role in the fourth industrial revolution (4IR), it is also more prevalent in the fifth industrial revolution (5IR). The 5IR refers to the collaboration between AI and human intelligence (HI). 5IR encompasses a harmonious human-machine union, explicitly focusing on the well-being of stakeholders such as library users, cybrarians, and intelligent libraries. This balanced acceptance of human-machine collaborations distinguish the 5IR from the 4IR, which focuses on achieving efficiencies using technology AI has been defined as an area of computer science that emphasizes the erection of intelligent machinery that functions and responds like HI.

AI performs library and information services (LIS) that cybrarians can perform in libraries. AI is a margin of computer science that focuses on constructing intelligent machinery like HI. This study aims to investigate the application of AI for managing the LIS in the 5IR in South Africa. This is a qualitative study where data will be collected through content analysis. Content analysis related to "artificial intelligence", "fifth industrial revolution", and "information and library services" will be reviewed. Data will be analysed and interpreted thematically to ensure that all relevant themes are covered in this study. The preliminary findings reveal that applying AI, such as robotic machines and cobots, helps libraries manage their LIS effectively and efficiently. LIS can be provided faster and quicker regardless of time and distance; such services will be provided remotely. The study recommends that





AI be adopted and applied to render and manage the LIS adequately and even to remote users through AI-aided software and applications. A framework will be developed on how AI can control the LIS in the 5IR.

### **Title: 5IR technologies in libraries: the use of internet of things and cloud computing technology to provide library and information services in the industry 5.0**

**Abstract:** The Internet of Things refers to systems of interrelated smart computing devices. These mechanical and intelligent digital machines are provided with unique identifiers, perform different activities in libraries, and can transfer data from networks without human-to-human or human-to-computer interaction. It is the interconnection via the internet of computing devices embedded in everyday objects, enabling them to send and receive data from each other. It is a network of physical objects or things embedded with electronics, intelligent software, sensors, and network connectivity, enabling objects to collect and exchange data in the library.

The Internet of Things has the potential to manage and provide quality library services effectively and efficiently in the fifth industrial revolution (5IR). 5IR refers to the collaboration between artificial intelligence and human intelligence in managing and providing quality library services through intelligent sensors, radio frequency and identification devices, and artificial intelligence-embedded software and applications.

This study investigates the application of the Internet of Things to manage and provide quality library services in the 5IR. This is a qualitative study that deployed content analysis as a research methodology. Themes such as the Internet of Things, library services, radio frequency identification devices, and the fifth industrial revolution were used to search for the literature in databases such as Google Scholar, Research Gate, and other scholarly databases. Preliminary findings of this study reveal that the Internet of Things can be used to trace information resources quicker and faster in the library through smart library apps and radio frequency identification devices.

The study further reveals that information resources can be protected through embedded 3D security gates with intelligent sensors and trackers. The study recommends a framework that can be used to adopt the Internet of Things to provide and manage the quality library services in the 5IR.

### **8 Prof. Lorette Jacobs Chair of the Department of Information Science, UNISA.**



Prof. Lorette Jacobs is the Department of Information Science Chair at UNISA. Her interests range from records management to using ICTs in information practices, information literacy development, curriculum development, and improving teaching and learning practices in higher education. Her current research relates to transcending research paradigms to encompass an Afro-centric paradigmatic construct and exploring supervision models unique to the open-distance e-learning environment. She is involved in an international InterPARES AI-Trust project on using AI in archives.

#### **Title: Artificial Intelligence use in academic libraries: Possibilities of digital twinning.**

**Abstract:** The potential of digital technology like digital twins within the context of artificial intelligence (AI) may be used to facilitate information retrieval and sharing of contents and environments to encourage engagement. However, the utilisation of digital twinning to bring about digital transformation in universities and academic libraries still needs to be utilised. By considering these technologies, universities can enhance teaching practices and research capabilities and contribute to societal development. Digital twins, virtual replicas or models of physical systems or processes, provide universities with the means to simulate, evaluate, and optimise infrastructures, resources, and operations.

Universities can gain insights into space utilisation, resource allocation, and facility management by creating digital twins of campus facilities, classrooms, libraries, and laboratories. Additionally, digital twins can replicate complex research studies and support group learning, giving students immersive and engaging experiences. Artificial



intelligence-powered recommendation systems can tailor or modify informative content searches, academic publications, and other information resources based on specific research interests and knowledge preferences. This may enable students, researchers, and faculty members to access relevant and curated content, enhancing the quality and efficiency of their work.

Applying an interpretivism paradigm, the bricolage design was used to extract diverse and non-traditional sources towards foresight suggestions on how digital twinning can be used in futuristic academic libraries. Through foresight methods, the research aims to identify emerging trends as drivers of change that could impact future academic library functions. Bricolage and foresight methods provide a comprehensive understanding of the future of functions and services academic libraries offer to utilise digital twins; it is envisaged that academic libraries can enhance their societal impact, sustainability, and service delivery. Digital twin technology allows academic libraries to enable real-time monitoring, process analysis, and simulation, providing insights into information resource utilisation, patron preferences, and space optimisation.

## 9 Mr. Andile Swartbooi Digital Strategy Officer, North-West University.



Andile Swartbooi is an industry veteran with more than 25 years of experience; he currently holds the position of Digital Strategy Officer at North-West University, responsible for NWU's end-to-end Digital Transformation programme. He has extensive experience in the Higher Education ICT sector. He was a Computer Science lecturer much earlier in his career and later held ICT Executive positions at the University of the Witwatersrand and the University of Johannesburg. He also served as Chair of the South African Universities ICT Directors Forum (SAUDIT).

Until recently, he has worked for the Sanlam Group, the biggest insurer in Africa, holding various portfolios, including Executive Head for IT Risk and governance, Chief Information Officer for Sanlam Personal Finance, Head of Software Development, and Head of IT Service Delivery. Swartbooi holds a BSc (Computer Science) and MPhil (Information and Knowledge Management); he has also completed the Global Executive Development Programme with the Gordon Institute of Business Sciences.

### **Title: Harnessing Artificial Intelligence to Advance Digital Transformation in Higher Education**

**Abstract:** With institutions of higher learning faced with increased competition both from within and outside the sector, many are adopting Digital Transformation (Dx) to gain competitive advantage, enhance operational efficiency, and deliver exceptional experiences to their faculty, student, and administration stakeholders. Artificial Intelligence (AI) promises to be a game changer and a key enabler of Digital Transformation. AI-enabled technologies allow institutions to automate business processes, personalise stakeholder engagements, and analyse large quantities of data to assist executives in making timely and informed decisions.

The Digital Transformation journey, however, entails more than just the plugging in of new technologies; it involves a series of deep and coordinated culture, workforce, and technology shifts that enable new educational and operating models and transform an institution's operations, strategic directions, and value proposition (Educause, 2020). Using North-West University's Digital Business Strategy (DBS) as a case study, the presentation highlights how technology renewal forms part of an institution's overall Digital Transformation journey and how Artificial Intelligence (AI) enabled technologies can be utilised to fast-track the achievement of strategic business goals.

Reference is also made to the people factor, ensuring that the rollout of AI technologies is accompanied by a comprehensive change management programme that seeks to leverage the combined strengths of all institutional resources.





## 10 Mr. Francis Tembo Ph.D. Candidate, North-West University, South Africa.



Francis Tembo is a Ph.D. candidate at North-West University, where he researches robotics and mechatronics. He holds a Master's degree in Computer and Electronic Engineering and a Bachelor's in Mechatronics Engineering. At North-West University, Francis contributes to the Pattern Recognition research group. His background includes software development, electronics, mechatronic systems, machine intelligence, computer vision, and data science. He enjoys applying his diverse engineering skills to build innovative solutions.

**Title: From Imagination to Automation: The Iterative Design Process Behind the Kletsbek-Kitso Library Robot.**

**Abstract:** At the intersection of innovation and collaboration, the Kletsbek-Kitso Library Robot emerges as a beacon of open-source technology's potential. Kitso not only exemplifies the capacity of social robots to offer valuable services but also fosters profound human-robot interactions. Aiming to broaden access to social robotics beyond resource-rich institutions,

Kletsbek-Kitso's architecture leans on affordable open-source technologies like Odrive and ROS. Its inviting aesthetic harmonises 3D-printed components and off-the-shelf parts, culminating in an approachable robotic form. Central to the design philosophy is reproducibility. Comprehensive documentation, encompassing code, schematics, CAD files, and assembly instructions, accompanies Kletsbek-Kitso's blueprint. By openly sharing its technical intricacies, any library can replicate the robot or tailor it to local requirements.

This democratised access not only encourages wider adoption but also enriches the platform through collective insights. This open approach births a versatile robot capable of aiding librarians, engaging patrons through spoken and touchscreen interactions, autonomous navigation, and, in the future, practical tasks. Ongoing efforts continue to refine Kletsbek-Kitso's capabilities, optimising its design for manufacturability and affordability. Kletsbek-Kitso is a testament to the transformative potential of open-source social robotics, making automation feasible for diverse communities. Its commitment to inclusive design, replicability, and function over complexity illuminates the pathway towards inclusive human-robot partnerships.

## 11 Dr. Birgit Schreiber-Dewes Associate, Universities South Africa (USAf), South Africa.



Birgit Schreiber-Dewes was the senior director Student Affairs, Stellenbosch University, South Africa. She has worked in Higher Education for the past 25 years, in South Africa (UCT, UWC, and others) and across the Southern African region in a variety of leadership positions and leading trans-national research projects. She received her MA in Psychology and Ph.D. in Educational Psychology. She has served and read at universities in Europe and the USA, including the University of California, Berkeley, UK Leuven, NYU, and some others. She serves on the executive of various national and international professional organizations including the International Association of Student Affairs and Services (IASAS), for which she served as the Africa Chair and now as the Vice President.

Birgit has published over 50 articles and chapters on the topics of student affairs, student engagement, higher education policy, and social justice. Birgit edited a global reference book for UNESCO on student affairs across the globe and is currently involved in a monograph for New Directions in Higher Education. She was the founding member and is on the editorial executive of the accredited academic Journal for Student Affairs in Africa (JSAA), on the board of the Journal for College Student Development (JCSD) and she is the column editor of the Journal for College and Character (JCC). Birgit is an associate of the higher education umbrella body Universities South Africa (USAf) and a member of the Africa Centre for Transregional Research at the Albert-Ludwig-Universität Freiburg, Germany.

**Title: Universities Learning Futures in South Africa: A case study of a national initiative with historically disadvantaged institutions.**



**Abstract:** Historically disadvantaged institutions (HDIs) face a myriad of systemic and contextual challenges that have been compounded by the demands of the #FeesMustFall and the unprecedented unfolding crisis of the COVID-19 pandemic. Of South Africa's 26 public universities, eight are recognised as being HDIs. The challenges the HDIs have faced in pivoting to online learning for their students and in advancing their teaching and learning projects, through these volatile times have necessitated urgent action steps to build institutional capability and capacity in the sector. Higher Education Leadership and Management, under the aegis of Universities South Africa, have developed and implemented the Universities Learning Futures (ULeFu) project with the eight HDIs. The paper will provide an informed understanding of the HDIs context and journey with digital transformation, and focus on how ULeFu's objectives, activities, and the lessons learned, are contributing towards rethinking and repositioning learning and teaching, theory and praxis in South African universities, for an uncertain and changing future.

## 12 Ms. Ayogebob Epizitone Researcher and Ph.D. Candidate, Durban University of Technology (DUT).



Ayogebob Epizitone is a researcher and a Ph.D. candidate whose research goals and achievements have been centered on Information Technology in Today's era. She is a holder of a master's degree and several diplomas. Her background and expertise span across IT, Accounting, Finance, Business, and Management sciences. She is also a member of the ICT and Society Research Group at DUT. She holds a special inclination towards scientific computational methods in the specialised areas of machine intelligence, computer systems, software implementations, and data sciences. She is totally dedicated to the use of scientific cutting-edge data data-intensive techniques to generate pertinent, astute, and valuable solutions to critical problems facing society. Hence her current and future work from this angle delves into the use of data science, Machine learning and artificial intelligence with an emphasis on building long-term intelligent, resilient, and sustainable information systems for efficacious applications.

### **Title: The development of an Africentric robot: Shaka Zulu project.**

**Abstract:** Technological development today has created the need to comprehend and transform the deployment of technological applications in diverse industries. The adoption and application of leading specialized models such as artificial intelligence, robotics, and machine learning are at the forefront of this progress. The deployment of these applications is said to revolutionize life, work, and the economy as a whole. Parallel to this favorable impact of technology is the existence of contentions that influence their development and deployment. As a result of these conflicting stances, technological infrastructure is conforming to the adoption of homogenized solutions. Many people and organizations adopt robots and artificial intelligence that are built using one-size-fits-all principles as opposed to tailored ones. As a result, the Africentric robot development project was conceived utilizing design science to bridge this gap. Shaka Zulu Robot is a project that focuses on developing and customizing robots within the African setting. The designed Shaka Zulu robot provides all stakeholders with a hands-on African experience and elevates the inherent African culture. Furthermore, with the backing of prominent technological entities, this initiative has impacted scholars' abilities and growth.

## 13 Dr. Shoshana de la Fuente Ex Libris, part of Clarivate.



Shoshana de la Fuente is the Senior Product Owner for Analytics and Title Matching at Ex Libris, part of Clarivate. With over a decade of dedicated service to Ex Libris, Shoshana has held various roles within the organization, spanning across multiple products and areas of interest. Shoshana holds a Ph.D. in Library and Information Science from Bar-Ilan University and has honed strong skills in research and data analysis. Before joining Ex Libris, she worked in Academia and at the Jewish National Library. AI is an exciting topic



for Shoshana, who believes that the great leaps in AI technology are opening new and intriguing possibilities in all facets of our lives.

### **Title: Will AI Really Replace Catalogers?**

**Abstract:** Do we really believe that Artificial Intelligence (AI) will replace catalogers? Join us to learn more about how the Clarivate Library Software developed by Ex Libris and Innovative are addressing this question. We will explore the significance of integrating AI technologies into academic and public library systems, solving real challenges, showcasing the wide-ranging benefits they offer to librarians and patrons, as well as discussing their potential risks. Tangible examples from Clarivate will demonstrate how AI can be used to propel librarians and library systems from data management to knowledge management and more. In this session we will share past, ongoing, and planned developments around metadata management and how these advancements will impact librarians – including catalogers – and library patrons. Metadata powers all aspects of the library catalog, from backend librarianship work to frontend patron discovery. We look forward to discussing how AI technologies can be used for good; to strengthen metadata management, expand intentional and serendipitous discovery, and enhance the librarian and patron experiences.

## **14 Ms. Andiswa Msi** **Director of Information Technology, North-West University, South Africa.**



Andiswa Msi, North-West University's Director of Information Technology, has over 20 years of experience in operational and leadership roles. She has written three books on cybersecurity and is passionate about embracing new technologies. She navigates the rapidly evolving technological landscape and addresses modern-day cyber threats with a specialisation in cyber intelligence and cybersecurity. Andiswa's Ph.D. research focuses on hybrid learning, data analytics and cybersecurity to improve educational practices and ensure robust security measures. She serves on three advisory boards and volunteers for professional organisations that promote collaboration and knowledge sharing among industry professionals.

### **Title: Optimising the Student Experience: Harnessing the Potential of AI for Improved Learning and Empowerment in Higher Education.**

**Abstract:** The study examines using artificial intelligence (AI) to empower and improve student learning in higher education. The paper explores AI's potential in higher education and provides theoretical insights. This study examines how AI can improve student engagement, personalised learning, academic support systems, and educational outcomes. This study examines AI integration in higher education to maximise AI's potential to transform and elevate the student experience, improving academic achievement and holistic development. This study has several implications for higher education. It adds to AI implementation in education literature by focusing on student experience optimisation. The study can help schools use AI to boost student engagement and learning.

The insights and recommendations can also help policymakers and educators understand higher education's AI integration benefits and drawbacks. This study is conceptual. It examines theoretical frameworks and concepts related to AI in higher education rather than empirical data or experimentation. Consider some study limitations. This conceptual paper relies on literature and theoretical frameworks rather than empirical data. Thus, theoretical assumptions and interpretations underpin conclusions.

The study may also need to consider contextual factors and implementation challenges that vary between higher education institutions. Methodology: This study reviewed and analysed literature, theoretical frameworks, and higher education AI implementation case studies. It involves systematic research and synthesis of relevant academic sources to understand AI's potential effects on higher education students. The study provides a theoretical foundation for understanding AI in higher education and valuable recommendations for optimising student experiences through AI technology integration.





## 15 Ms. Phuti Rabatseta Masters student, UNISA.



I am a 27-year-old from Limpopo who holds a bachelor's degree in Sociology (NWU), an honors degree in Psychology (UJ), a postgraduate diploma in library and information studies (UL) and registered for MSc in Information Science (UNISA). Currently working at Sefako Makgatho Health Sciences University as a librarian intern.

**Title: Utilisation of artificial intelligence for the provision of information services at the University of Limpopo Library in South Africa.**

**Abstract:** Utilisation of artificial intelligence for the provision of information services at the University of Limpopo Library in South Africa in the wake of the fourth industrial revolution (4IR), artificial intelligence (AI) has been used in every aspect of human activity, including library operations. AI refers to the process of collaborating with robotic machines to improve job performance, generate increased competence, and drive economic progress. In the LIS, AI has the ability to carry out a series of operations such as information retrieval. The purpose of this study is to investigate the utilisation of AI for the provision of information services at the University of Limpopo Library in South Africa.

The Unified Theory of Acceptance and Use of Technology model, Task-Technology Fit, and Information Utilisation Capacity Theory were adopted to conceptualise the conceptual framework of the study. It is a convergent mixed method research using a parallel sampling technique. The population comprised twenty-six participants in total, consisting of twenty information librarians, four technical librarians, and two library executives. A questionnaire, interviews, document analysis, system check, and observation were used to gather the data. Preliminary findings indicate that AI can be used to provide information services in the library such as responding to students' inquiries and helping users to locate books quicker and faster. However, the findings further indicate that the UL library has no adequate AI infrastructure in place to integrate with the library management system in order to provide effective information services. The study preliminarily recommends that an intelligent robotic machine be adopted and applied at the information service at UL library to attend to students' inquiries regarding the availability of the books and the location of the books in the library.

**Keywords:** Artificial intelligence, robotic machines, information services, University of Limpopo

## 16 Mr. Sylvester Jeffries Learning and Teaching Librarian, University of the Western Cape (UWC).



Sylvester works as a Learning and Teaching Librarian at the University of the Western Cape. In this role, he spearheads the library's goals in respect to the advancement of 21st-century literacies in a digital university. He is responsible for designing, delivering, and evaluating learning resources that develop students' competencies in information and digital literacies. He works to empower librarians with respect to instructional design for student-centered and flexible learning opportunities. He is passionate about learning, teaching, and research activities on the topics of continuing professional development; digital literacies; ePedagogy, and instructional design.

**Title: Exploring Gamification Strategies for Effective Digital Information Literacy Instruction (PechaKucha).**

**Abstract:** In the digital age, information literacy skills are crucial for individuals to navigate and make sense of the vast amount of digital information available. However, traditional instructional methods often fail to capture learners' attention and engagement. This presentation explores the potential of gamification as an innovative approach to enhance digital information literacy instruction. The presentation focuses on the application of gamification techniques in digital information literacy instruction, specifically targeting sub-topics such as planning research, building search strategies, identifying information sources, utilising search



tools, evaluating information, and practicing responsible and ethical information use. The presentation will delve into the theoretical foundations of gamification and its relevance to the theme of robots in industry and education. It will showcase practical examples of gamification strategies applied to the sub-topics of digital information literacy. These strategies leverage artificial intelligence and interactive technologies to create immersive learning experiences. The presentation investigates the impact of gamified instruction on learners' motivation, knowledge retention, and skill development. It explores how gamification elements such as challenges, badges, leaderboards, and rewards can be integrated into digital information literacy instruction to foster active participation and enhance learning outcomes.

Moreover, the presentation will discuss the design principles and considerations for implementing effective gamification strategies in digital information literacy instruction. It will highlight the importance of personalised learning experiences, adaptive feedback mechanisms, and seamless integration of gamified elements within existing digital platforms and tools. By attending this presentation, participants will gain insights into the potential of gamification to transform digital information literacy instruction and promote active learner engagement. The findings of this study contribute to the growing body of knowledge on the intersection of gamification, artificial intelligence, and information literacy within the context of robots in industry and education.

## 17 **Dr. Janelize Morelli:** Senior Lecturer, Community Music, NWU School of Music, North-West University, South Africa.



Janelize Morelli (Ph.D. ) is a senior lecturer in community music at the NWU School of Music. Her research is focused on relational ethics in the community arts context. Recently she has become more interested in critical posthumanist pedagogies for community music in higher education. Janelize supervises postgraduate students who are interested in arts-based research and critical theory in music education and community music contexts.

**Title: Artificial intelligence technology to enhance data quality management practices in the banking industry in South Africa.**

**Abstract:** According to the North-West University Teaching and Learning Strategy (2021 – 2025), it is the role of the university to “prepare its students for life and the world of work, creating a culture of innovation to solve real-world problems so that they may participate constructively in public life, and lead fulfilling professional and private lives” (NWU, 2020). In the rapidly changing higher education environment, it may be difficult for university teachers to determine what life and the world of work will look like for their students.

Critical posthumanist pedagogies may be one way university teachers can think about the skills students need to navigate an uncertain future. Critical posthumanism builds on the foundation created by anti-racism, postcolonial theory, material feminism and anti-anthropocentrism to question the assumption of liberal humanism. Pedagogies informed by critical posthumanism facilitate space for a critique of dualisms, creative interrogation of the relationship between humans and non-humans and a focus on relational ontologies and epistemologies. As a university teacher in the creative and performing arts, I share how I applied tenants of critical posthumanism to create learning experiences using Twine and generative AI, such as Megenta Studio, Stable Diffusion and various large language models to create interactive non-fiction experiences. These experiences allowed the students to explore complex phenomena from multiple angles. Therefore, this paper aims to reflect, through the lens of critical posthumanist pedagogies, on best practice when employing creative non-fiction and gamification in an undergraduate module.

## 18 **Mr. Manqoba Nzama** Ph.D. Student, Durban University of Technology, South Africa.

Manqoba Nzama is a Ph.D. student in Business and Information Management at the Durban University of Technology (DUT), where he researches various topics in the field of commerce and business management, such as supply chain, economics, and information technology. He has a Master's degree in Management Sciences in





Administration and Information Management from DUT and a Bcom Honours degree in Supply Chain Management from the University of KwaZulu-Natal (UKZN). He also has a Bachelor's degree in Economics and Supply Chain Management from UKZN. Manqoba has over a year of lecturing experience in business and information management at DUT, where he also tutors second and third-year students. He is passionate about applying his knowledge and skills to solve real-world problems and contribute to social and economic development. He is working on a research paper to be published in reputable journals and participated in the 19th annual IS studies conference at the University of Zululand.

**Title: The Impact of Artificial Intelligence on the Manufacturing Industry in South Africa**

**Abstract:** Artificial Intelligence (AI) is being credited with having a significant impact on manufacturing processes in recent discussions. Manufacturing systems are getting more sophisticated, dynamic, and interconnected, however, there is limited information available on the impact of AI on the South African manufacturing industry. This study provides a quantitative analysis of the implications of AI on the manufacturing industry in South Africa. The goal of the study is to provide factual data and quantitative insights into the degree of AI deployment and its effects on workforce transformation, efficiency, productivity, and quality assurance. South Africa's 312 Motor Vehicle Manufacturing firms took part in an electronically administered structured survey, and data was analysed using statistical approaches such as correlation analysis and regression analysis. The findings demonstrate a substantial association between the usage of AI and a range of performance measures, implying that organisations that embrace AI technology benefit from greater productivity, efficiency, quality control, and supply chain management.

Additionally, the study emphasises the necessity of workforce transformation as a result of AI adoption, emphasising the importance of upskilling and reskilling programmes to guarantee a smooth transition. The research findings add to the current body of knowledge by giving solid quantitative evidence on the influence of AI on the South African manufacturing industry. The findings have significance for industry leaders, and decision-makers, allowing for more informed decision-making and strategic planning for successful AI integration in the industrial sector. The study closes with recommendations for promoting AI use and tackling associated issues in order to maximise the benefits and competitiveness of South Africa's manufacturing industry.

Keywords: Artificial Intelligence, Manufacturing industry, Efficiency, Productivity, Quality assurance, Workforce transformation.

**19 Mbalenhle Marcia Khumalo**  
Ph.D. Student, Durban University of Technology, South Africa.



Mbalenhle Khumalo is an accomplished and dedicated Ph.D. student and researcher, specializing in the field of Business and Information Management. With an unwavering commitment to advancing knowledge and making a positive impact in her field, Mbalenhle has consistently showcased exceptional aptitude and drive throughout her academic and research journey. She successfully completed her undergraduate studies at Durban University of Technology, where she earned a master's degree in Business and Information Management. During this period, she established a solid foundation and nurtured a profound interest in the realm of Online Learning. Motivated by her enthusiasm for comprehending complex problems and devising innovative solutions, Mbalenhle made the decision to pursue a Ph.D. in Business and Information Management at the Durban University of Technology.

Currently, she is in the final stages of her doctoral programme, focusing her research on the domain of Online Learning. Throughout her tenure as a Ph.D. student, Mbalenhle has consistently exhibited exceptional intellectual rigor, expertise in research methodologies, and an unwavering dedication to producing high-quality research outputs.

**Title: Exploring the adoption of robotics in teaching and learning in Higher Education Institutions**





**Abstract:** Artificial intelligence (AI) has become a prevalent part of many businesses, including higher education. AI is progressively gaining traction as an instrumental engagement tool in higher education institutions (HEIs). The premise underlying this trend is the potential of robots to foster enhanced student engagement and consequently, elevate academic performance. Considering this development, it is imperative that HEIs probe deeper into the possible adoption of robotics in educational practices. The aim of this paper is to conduct a comprehensive exploration into the adoption of robotics in teaching and learning in the higher education space. To provide a holistic perspective, this study poses three questions: what factors influence robotics uptake in HEIs, how can robots be integrated to improve teaching and learning in higher education institutions, what are the perceived benefits of robotics implementation in T&L.

A bibliometric analysis and systematic review methodology is employed in this study, to provide an in-depth assessment of the development, significance, and implications of robotics in HEIs. The dual approach offers a robust evaluation of robotics as a pivotal element needed to the enhancement of teaching and learning practices. The study's findings uncover the increasing adoption of robotics within the higher education sphere. It also identified the challenges encountered during adoption, ranging from technical hurdles to educational adjustments. Furthermore, this paper offers realistic guidelines for various stakeholders for the effective integration of robotics into higher education.

Keywords: Artificial Intelligence, adoption, robotics, teaching and learning, higher education.

## 20 Mrs. Yumnaa Ocks Ph.D. Student, University of the Western Cape (UWC).



Yumnaa is a University of the Western Cape (UWC) doctoral student. Her doctoral thesis focuses on the impact of the POPIA Act on academic libraries. She received her BLIS; and MLIS from the University of the Western Cape, Cape Town in 2016, and 2021, respectively. Her main area of research is academic libraries, the use of ICT in academic libraries, smart libraries, and the use of AI in academic libraries.

### **Title: Artificial Intelligence in libraries: A friend or Foe?**

**Abstract:** Artificial intelligence has already infiltrated our daily computing activities. We are interacting with computers on a daily basis, with most computer systems and mobile phones having artificial intelligence features. It is also clear that artificial intelligence is still an emerging technology and growing at an alarming speed in different organizations. The power and advantage of artificial intelligence lie in the fact that computers can recognise patterns efficiently at a scale and speed that humans cannot.

This is based on perceptual recognition, unlike human beings that operate on deep cognition. With the advancement in artificial intelligence programming, creating a smart library is not only a possibility but a matter of time. Interestingly, artificial intelligence is the current technology with huge prospects and promising applications in libraries.

Studies have shown that computers in libraries can operate efficiently at a scale and speed beyond human abilities, maximizing speed, efficiency, and effectiveness in processing library materials and enhancing library service delivery at all levels. Thus, libraries should also explore this ground-breaking technology, its benefits, and challenges. However, cutting-edge, and emerging technologies could pose some of the biggest opportunities for organizations, but they also present challenges. A library with inadequate infrastructure will not be able to integrate AI into library services because AI requires the latest technological tools and heavy equipment to run successfully. Some other challenges include poor networking, an erratic power supply, a lack of trained personnel, negative perceptions, outdated economic and technological factors, and the high cost of technological tools.

These challenges should be addressed before implementing AI in library operations. Although AI literature is extensive in libraries, most cover limited library applications. It is crucial to discuss the impact and applications of artificial intelligence in libraries in order to maximize the vast benefits of the technology and highlight its challenges.



## 21 Mr. Selema Tebogo Molopa Learning and Development Coordinator (e-Learning), Cape Peninsula University of Technology Library (CPUT).

Selema Tebogo Molopa is an experienced professional with over 14 years of experience in e-Learning and Learning and Development. He has diverse knowledge and expertise in different industries and currently serves as a Learning and Development Coordinator (e-Learning) at the Cape Peninsula University of Technology library. Prior to this, he served as an Assistant Director (e-Learning Implementation Specialist) at the Gauteng City-Region Academy (GCR Academy). Molopa is a thought leader in the field of e-Learning and has a proven track record of success in managing large-scale e-Learning initiatives, providing operational leadership and execution, conducting research, and managing resources and budgets.

### **Title: Artificial Intelligence-Based Literature Review Process Adaptation.**

**Abstract:** This case study explores the use of Artificial Intelligence (AI) to enhance the development of literature reviews for postgraduate students. The study uses a pilot project to investigate the potential of AI platforms to search, analyze, and synthesize data for literature review. The students are allowed to exchange ideas on how they think AI can improve their experience while conducting literature reviews. The study also discusses the ethical considerations and risks involved in using AI for literature review. The research highlights the impact of literature review on the quality of research and the success of the student. It demonstrates the use of AI to conduct a table analysis literature review method and explores potential methods of conducting a literature review using AI. The findings of this research can help improve the efficiency and accuracy of the literature review process for postgraduate students.

## 22 Mr. Lesedi Nchabeleng Teqsior.



With 30+ successful implementation projects and experience working with Fortune 500 companies, Lesedi is an expert in streamlining business processes and achieving maximum efficiency. Don't be surprised to see Lesedi in a marathon, his passion for running knows no bounds as he loves nothing more than pushing himself to new limits.

### **Title: Adoption of AI, the analysis of South Africa.**

**Abstract:** Artificial intelligence (AI) has the potential to transform the lives of millions of people in developing countries. For example, AI can help farmers increase their crop yields, diagnose diseases, provide personalized learning, and fight corruption. However, AI is not a magic bullet that can solve all the problems of developing countries. There are also many challenges and risks that need to be considered and addressed.

In this paper, we identify three main challenges that hinder the development and deployment of AI in developing countries:

1. Data quality and availability
2. Ethical and social implications
3. Capacity and infrastructure gaps.

We also suggest some possible solutions to overcome these challenges, such as

1. Creating data-sharing platforms and standards
2. Establishing ethical frameworks and guidelines,
3. Building local talent and ecosystems.

We argue that developing countries need to adopt a proactive and collaborative approach to leverage the opportunities and benefits of AI, while minimizing its negative impacts. The paper is based on a review of the literature on AI in developing countries and its benefits and challenges, as well as some case studies of AI deployments in Africa.



## 23 Mr. Wouter Klapwijk Stellenbosch University, South Africa.



Wouter Klapwijk is the Director: Information Technology Services, at the Stellenbosch University Library and Information Service. In this capacity, he is responsible for leading the ICT operations of the University's library service, which includes ICT operations and human resources management, as well as process and project management. He has served on the guidance committees of national and regional forums to create frameworks for the implementation of digital and data repositories in South Africa and is a member of the ICT operations committees at Stellenbosch University. He is currently a standing committee member of the IFLA IT Section. He has a keen interest in knowledge organisation and representation, especially in discovering knowledge within the frameworks of the modern information society.

**Title: Enroute to an AI strategy by following practical use case markers.**

**Abstract:** The SU Library and Information Service (LIS) has embarked on a journey to formulate a strategy on how to apply Artificial Intelligence (AI) in its service offering and backend processes to the benefit of its users and operations. Although the end destination of this journey is still unknown, is the LIS already well underway on the journey by following the route markers laid down by practical use case projects that are directly, or indirectly, related to AI. These projects span the domains of symbolic, connectionist, and generative AI projects. The bedrock of these projects is to be found in knowledge representation through linked data projects, machine visualisation and 3D design, and 3D printing underpinned by machine learning and treating collections as data through the application of generative AI. In each of these domains, there are AI literacies to be acquired by both staff and students, which in turn reiterates the important role of academic libraries in building AI competencies for both its users and staff members. The LIS will discuss the practical use case route markers on its journey through the lens of its service offering to its user community by way of machine visualisation services, 3D modelling, and simulation services, AI-assisted learning, extended learning with data visualisation, digitization, and the implementation of Natural Language Processing (NLP) projects for chatbots, as well as the summation of data in collections for easier access and interpretation by its user community. These use case projects serve as the route markers for the LIS to reach its destination in formulating an AI strategy; one that will subsequently be implemented in an incremental fashion once the strategy has been finalised and adopted.

## 24 Mr. Mthokozisi Luthuli Master's Candidate, Durban University of Technology, South Africa.



Mthokozisi Luthuli is a passionate and dedicated master's candidate and a researcher at the Durban University of Technology, specialising in the field of Business and Information Management. He successfully completed his undergraduate studies in the field of Office Management and Technology at the Durban University of Technology. He is currently revising the last chapter of his thesis and will be enrolling for a Ph.D. in Business and Information Management next year.

**Title: Ethics of artificial intelligence systems in teaching and learning**

**Abstract:** Artificial intelligence (AI) systems are revolutionizing various aspects of society globally and higher education has not been spared. In general, the benefits associated with AI implementation include automation and efficiency. With regard to teaching and learning (T&L), AI technologies offer promising opportunities to enhance educational experiences, personalize learning, and improve educational outcomes. Notwithstanding the above, the various levels of education are confronted by ethical challenges posed by this technological deployment. The ethical implications of integrating AI systems into HEI's T&L have garnered significant attention necessitating the need for more studies. This paper therefore aims to examine the ethics of AI systems in teaching and learning (T&L). Using a comprehensive literature review, the following research questions were addressed; What are the perceptions held





about AI in T&L?, What ethical issues arise with the adoption of AI in T&L, and In which direction are the insights gained about AI ethics pointing for T&L? The findings reveal significant concerns about the ethical implications for teaching and learning in higher education. Additionally, the utilization of AI for T&L highlights conflicting viewpoints amongst stakeholders.

Keywords: Ethics, artificial intelligence, teaching and learning.

## 25 Dr. Lynn Kleinveldt

Lecturer in the Faculty of Business and Management Sciences, Cape Peninsula University of Technology (CPUT), Cape Town, South Africa.



Dr. Lynn Tatum Kleinveldt, born in Cape Town, South Africa, obtained her Ph.D. in Philosophy, Science, Cognition, and Semiotics in 2018 from the University of Bologna, Italy. She is currently a lecturer in the Faculty of Business and Management Sciences at the Cape Peninsula University of Technology in Cape Town, South Africa, since 2020. Prior to this, she held the position of faculty librarian of Applied Sciences and Health and Wellness Sciences at the Cape Peninsula University of Technology for the period 2009-2019. She has 19 years of experience working in academic libraries.

Her research interests are Teaching with Technology in Higher Education; Online Learning Environments; Blended Learning; Emerging Technologies; Library Collaboration; Embedded Librarianship and Social Robotics, Research Data Management, Data Analytics, Artificial Intelligence, Virtual Libraries, Digital Libraries, Library Systems, Academic libraries supporting research, Information Literacy, Knowledge Management, and Knowledge Societies.

Some research projects conducted include integrating tablet technologies into the information literacy programme and integrating telepresence robots into international librarian collaboration to support reference services and research support services. Dr. Kleinveldt is currently serving as a Standing Committee Member of the IT Section in the International Federation of Library Associations and Institutions (IFLA) for the term 2017-2023, and Chairperson of the Library and Information Association of South Africa (LIASA) Higher Education Libraries Interest Group, 2021-2023.

### **Title: Integrating real-world cases on the use of generative AI into an assessment of the 2nd year business information systems subject to assess ethical use of information in the digital age.**

**Abstract:** Artificial Intelligence, ranked 4th on the list of top technologies to learn in 2023 as reported on 25 May 2023 (Duggal, 2023), has developed rapidly with the rise of generative AI. Generative AI, as described by AI (World Economic Forum, 2023), “refers to a category of artificial intelligence (AI) algorithms that generate new outputs [such as text, images, audio] based on the data they have been trained on”. The capabilities of generative AI tools such as “Midjourney and ChatGPT” have caused quite a stir in the higher education landscape.

Although it may be seen as a threat to the integrity of online assessments especially in theory subjects, generative AI presents an opportunity to stimulate key 21st century skills such as Information Literacy, creative and critical thinking skills required in industry. Collaboration between stakeholders in universities to implement strategies on the ethical use of generative AI can potentially benefit student learning (Baidu-Anu & Ansah, 2023).

Furthermore, the ability to apply theory to real-life cases is paramount in workplace preparedness. In particular, understanding the role of information systems in organisations, and striking the balance between access to information and ethical use of information (Rainer & Prince, 2018) are key aspects to consider in all processes. Therefore, the aim of this presentation is to showcase the integration of realworld cases on the use of generative AI into an assessment of the 2nd year theory subject, business information systems, to evaluate ethical use of information in the digital age. It is hoped that this project will provide academics and information specialists insight into new approaches to technology trends in teaching and learning practices.



## 26 Mr. Samuel Simango Manager: Research Data Services, Stellenbosch University.



Samuel Simango is the Manager: Research Data Services at Stellenbosch University's Library and Information Service. In his role, he has been involved in the conceptualisation and implementation of several research data management initiatives at the University such as: drafting governance documents related to research data, managing the institutional research data repository, and providing data management planning as well as research data support services. In addition to this, he was involved in the Open Science component of the ilifu big data infrastructure for data-intensive research and served as one of the developers of the Research Data Management Adventure Game.

### **Title: Autonomous Artificial Intelligence and Machine Ethics.**

**Abstract:** The following research examines the ethics pertaining to autonomous Artificial Intelligence (AI). Technological developments relating to AI have a far-reaching impact on society. Once thought of as technology confined to the realm of science fiction AI is now becoming part of reality. Such developments have given rise to several ethical issues such as the ethics of autonomous AI systems. In a 2017 article, Francine Berman and Vinton G. Cerf made the assertion that: "technologies have no ethics". The only reason provided in support of this assertion was that many systems have the capacity to be used for both good and ill. Although the assertion itself was made in connection with the 'Internet of Things', it can also be applied to Artificial Intelligence systems in the general sense.

The research proceeds by way of a systematic literature review focusing on the concept of autonomy, the ethics of autonomous AI systems, and the development of ethical AI systems. This is followed up by the formulation of a framework that can be used in order to determine if autonomous AI could be ethical. The framework itself applies the existing methods for implementing AI systems (i.e. symbolic and soft machine ethics) to deontological and teleological ethics. The research findings suggest that the existing methods for implementing AI systems (i.e. symbolic and soft machine ethics) provide a means for developing autonomous AI that is ethical in nature. Furthermore, several recommendations are made which can be taken into consideration in order to promote the development of ethical autonomous AI.

## 27 Ms. Talifhani Ramaliba Information Management Specialist, The First National Bank (FNB), South Africa.



Talifhani Ramaliba is an Information Management specialist and is currently employed at The First National Bank (FNB). She pursued her undergraduate studies at the University of Pretoria and has since obtained her Masters degree and currently pursuing her Ph.D. from UNISA. Her Ph.D. the study is focused on establishing an information governance framework for utilizing artificial intelligence technology for data quality management in the South African banking sector. Areas of interest include data quality management, artificial intelligence, artificial intelligence governance, data governance, information ethics, and information management. Ms. Ramaliba looks forward to completing her Ph.D. and having an impactful study.

### **Title: Artificial intelligence technology to enhance data quality management practices in the banking industry in South Africa.**

**Abstract:** Large amounts of data are generated and used for decision-making in the banking sector, this data plays a crucial role in the banking sector and has changed the industry by overcoming different challenges and gaining insights to improve customer satisfaction and overall banking experience. The importance of high-quality data in the banking industry is imperative to reduce fraud and financial crimes as well as enhance financial decision-making.



It is therefore important that good data quality management practices are adopted to ensure suitable decision-making and insight. Improved data quality management processes will also result in saving time for the banking industry as measures will be implemented to ensure that quality data management principles are applied to secure the stability of the financial organisation. An information governance framework for utilising artificial intelligence technology for data quality management in the banking sector in South Africa will be introduced.

This study explores the conceptual framework adopted to develop an information governance framework that may be adopted for utilising AI technology for data quality management. The hourglass model for AI governance together with the DAMA principles were used to develop a conceptual framework for the study. Applying a desktop/literature review a conceptual framework was established which will in turn influence the elements of the information governance framework for data quality management.

Findings indicated the elements to be included within the conceptual framework as Hard law, principles and guidelines, stakeholder pressure, strategic and value alignment, AI system elements, data governance, data management, data quality management, and data quality metrics. Results further showed that in the South African context, very few laws have been enacted for AI and very few principles and guidelines have been established, however, researchers have started delving into AI research within different focus areas.

## **28** Ms Nthabiseng Kotsokoane Assistant Director: Acquisitions. University of the Free State (UFS), South Africa and Chair of The IFLA Regional Council and member of the IFLA Governing Board



### **Title: Role that IFLA regional structures I can play in the IA space:**

**Abstract:** IFLA Regional committees hold site events at the IGF regional meeting to advocate for Libraries to influence the discussion and form part of the Internet governance in their regions. One of the themes of these meetings is Addressing Advanced Technologies, including AI. Internet governance discussions cover decisions and debates across a range of policy areas, Advanced digital technologies increasingly shape our economy and society, from artificial intelligence (AI) systems that guide our online experiences, power smart devices, and influence our own decisions, as well as decisions others take about us, to robotics, etc. Libraries have a major interest in being part of this AI conversation and development. Libraries rely on technology and the internet to fulfil their mission to provide access to information to the community they serve on a daily basis, and to organising, sharing, and spreading information globally.

## **29** Dr. Josiline Chigwad Postdoctoral Research Fellow, UNISA.



Josiline Chigwada is a postdoctoral research fellow at the University of South Africa. She is a librarian with 16 years experience in academic librarianship. She holds a doctorate in Information Science and a Postgraduate Diploma in Higher Education. She is a member of the Library and Information Association of South Africa, the SPARC Africa management committee, the Zimbabwe Library Association, the Association for Information Science and Technology, the Zimbabwe Young Academy of Sciences, and the Rotary Club of Msasa.

She has presented in various national, regional, and international conferences. She has authored 3 books, 20 book chapters, 13 journal articles, and 7 conference proceedings.

### **Title: A proposed framework for developing a digital literacy course for artificial intelligence in academic libraries.**

**Abstract:** The impact of artificial intelligence (AI) has been felt across all academic areas, and





individuals must develop digital literacy skills customized to artificial intelligence technologies. The declaration on libraries and artificial intelligence issued by the International Federation of Library Associations and Institutions (IFLA) urged that libraries play a role in the acceptance and usage of artificial intelligence. A study was conducted to develop a framework for creating and delivering an artificial intelligence digital literacy course within the context of an academic library. A thorough literature study was conducted using three main databases, Scopus, Web of Science, and Dimensions, to provide an awareness of current digital literacy courses and to identify gaps and best practices in establishing artificial intelligence-specific courses.

The PRISMA guidelines and procedures were utilized to research and design the literature accessible based on the inclusion and exclusion criteria. According to the findings, academic libraries ought to collaborate with other stakeholders, including faculty members, students, and artificial intelligence experts, to ensure the course's relevance and quality. The key trending features of the results were needs assessment, curriculum design, instructional strategies, and assessment methods. The framework emphasizes the significance of AI literacy, AI ethics and bias, and AI in research.

A framework has been proposed to address the constraints of delivering an AI digital literacy course, such as a lack of skills, limited resources, diverse learner backgrounds, and evolving AI technologies. The study contributes to the broader field of AI education by providing practical advice for academic libraries interested in promoting digital literacy and safe AI usage.

### 30 Ms. Nombuso Phamela Zondi Research Common Tutor, Durban University of Technology.



Miss Nombuso Phamela Zondi holds a Degree of Master of Management Sciences in Library and Information Science from the Durban University of Technology. She currently works as a research common tutor where she assists post-graduate students with information services related to post-graduate research. Miss Zondi is passionate about development and access to knowledge and management.

#### **Title: The implementation of artificial intelligence for efficient academic library services**

**Abstract:** The breakthrough in artificial intelligence (AI) has fundamentally transformed society. Several sectors and industries including academic libraries implement AI as the most recent technology with the potential to revolutionise the way academic libraries operate and serve their patrons. While the implementation of AI is one of the best ways to address inefficient service delivery, academic libraries are still lagging due to issues such as the lack of expertise, infrastructure, financial constraints, and job losses, among others.

This paper conducts a critical review concerning the implementation of artificial intelligence for efficient academic library services. The paper examined the need for AI in academic library services, the advantages of implementing artificial intelligence in libraries, and the factors driving the implementation of AI in this area. The findings revealed that the implementation of AI in academic libraries is ushering in a new era of efficient and effective library service delivery. It also highlights AI implementation challenges, and this is a phenomenon confronting developing countries.

Furthermore, the potential of AI to improve library service was uncovered to be associated with meticulous planning, teamwork, funding, and promotion. It is envisioned that the findings of this paper would serve as a practical guide for librarians adopting AI and top management implementing AI projects.

Keywords: Artificial intelligence; academic library services; AI; AI implementation.



## 31 Ms. Rebecca Bakker Digital Collections Librarian, Florida International University, USA.



Rebecca Bakker serves as the Digital Collections Librarian at Florida International University. She is responsible for overseeing various digitization projects and managing digital archiving initiatives for the Digital Collections Centre. Rebecca also conducts workshops on digitization skills, metadata management, and content management. She specializes in digital humanities topics, such as creating oral histories and digital exhibits. Furthermore, Rebecca acts as a liaison for community and university partners, collaborating on projects involving FIU's digital and institutional repositories. She holds an MLIS degree from Florida State University.

### **Title: AI in Digital Archiving: Overcoming Constraints and Meeting Demands.**

**Abstract:** This presentation explores the impact of AI and machine learning on digital archiving practices within a resource-constrained academic library. We will examine the transformative potential of AI in addressing growing demands and overcoming limitations in digital archiving. Drawing from practical experiences, we analyse how AI and machine learning have revolutionized our digital archiving workflows, enhancing efficiency, data management, and accessibility. We explore diverse AI applications we've tested, including ones used for automated file management, voice-to-text transcription, OCR, facial recognition, social media content generation, and metadata creation. Emphasizing their evolving nature, we discuss the integration challenges and successes encountered. Moreover, we address increased expectations in digital content management, highlighting the vital role of AI and machine learning. Specifically, we examine the impact of AI and machine learning adoption by users and researchers, which has led to a paradigm shift in data organization approaches. Throughout, we emphasize responsible AI integration, considering ethical considerations and upholding principles of digital humanities. By critically assessing and thoughtfully integrating AI tools, we aim to meet the evolving challenges of digital archiving. Our experiments and practical applications will hopefully inspire archivists and scholars to leverage AI while recognizing its limitations and meeting the demands for efficient and accessible digital archiving.

## 32 Dr. Ngozi B. Ukachi University of Lagos Library, Nigeria.

Ngozi B. (CLN, Ph.D.) is an Associate Professor and the current Head of the College of Medicine Library of the University of Lagos, Nigeria. She has worked in almost all the Sections of the university library and headed many of them. She is widely published and has presented papers locally and internationally. Ngozi has won several international awards. She is a past Chairman of the Information Technology (I.T.) Section of the Nigerian Library Association. Her research area of interest is concentrated on ICT application to library services.

### **Title: Virtual learning environment: effects on learning process and outcome in universities in Nigeria.**

**Abstract:** Teaching and learning at the higher education level is currently revolutionizing and as a result, technology integration and internet adoption have become topics of interest at the instructional level of education. These tools have made it possible to establish new learning platforms such as the virtual learning environment (VLE) which enables participation, cooperation, and the provision of scientific content in varying formats. The interest in the new learning environments has increased over time following students' realization of the relevance and potential they hold in helping them in their learning processes to accomplish their work regardless of place and time among many other benefits. Virtual learning environment is becoming a common learning platform for universities in Nigeria, especially after the COVID-19 pandemic period.

This study is therefore concentrated on establishing the specific VLE being adopted by the different universities in Nigeria, and the features that make them prefer them. Students' perceptions about the learning outcome and the innovative change brought about by the adoption of such platforms will also be established. The study will find out the inhibitors to the effective adoption of the VLE platforms. Descriptive research design and random



sampling techniques are being adopted for the study. The instruments for data collection are a questionnaire and an oral interview. The outcome of the study will be relevant to both students and the university management. It will expose students to the knowledge of the numerous benefits associated with this learning platform in this era, thus, preparing them to embrace it. On the side of the university management, the understanding of students' perception of the platform will guide them in their decision making while a clear vision of the inhibiting factors will enable them to know if and in which area industry assistance and collaboration will be required.

Keywords: Virtual learning environment, University education, Technology adoption.

### **33** Mr. Charlie Maphuntshane Molepo Deputy Director: Research and Scholarly Communications, University of Free State.



Charlie Maphuntshane Molepo, Professional Librarian, Teacher, and Assessor, has been the Deputy Director at UFS Library responsible for Research and Scholarly Communications since 2015. He represents non-academic staff at the University Council and serves on its Finance and Human Resources Committees. Before joining UFS, he worked at Vista University, Natal University's Campbell Collections, University of Johannesburg, Universal Knowledge Software (UKS), University of KwaZulu Natal Libraries, and Dawson Books UK (part of Betram Books) as the International Account Director for Africa. He also served on the following governance structures in his career. Vista University Council, ETDP SETA Board member 2000-4, and in 2010 – 12. Member and Chair SAQA Standard Generating Body Library & Information Services (SGBLIS) (2002 – 2010). He served as the President of the Union of Democratic University Staff Associations (UDUSA) for three two-year terms. LIASA Executive Chair CPD 2004- 5, Currently serves on the Library and Information Association of South Africa (LIASA) as President-Elect (2022-2023).

#### **Title: Artificial Intelligence in Scholarly Communications: Friend or Foe.**

**Abstract:** AI has significantly improved scholarly communications by automating tasks and reducing time and effort in tasks like literature review, data analysis, and plagiarism detection. This has allowed researchers to focus on innovative research and knowledge creation. AI has also transformed the analysis of research data, enabling researchers to derive meaningful insights and make informed decisions. However, AI integration presents challenges such as data privacy, bias in algorithmic decision-making, and ethical concerns. Collaboration between AI experts, researchers, and publishers is crucial for responsible and equitable implementation. Advances in natural language processing and machine learning techniques will further enhance AI's capabilities in understanding and summarizing research papers, facilitating knowledge transfer, and supporting interdisciplinary research collaborations. AI can also improve peer review processes by automating preliminary assessments and easing the burden on reviewers. Overall, AI's future potential in scholarly communications is immense, promising to further transform knowledge creation, dissemination, and access.

### **34** Ms. Rosina Ramokgola Data Curation Officer: Scholarly Communications, University of Pretoria.



Rosina Ramokgola is a Data Curation Officer, Scholarly Communications Unit in the Department of Library Services at the University of Pretoria. She is responsible for the UP-Research Data Repository known as Figshare and Research Data Management. She holds a master's degree from the University of Pretoria. Currently, pursuing her second master's in digital Curatorship at the University of Cape Town.

Rosina has been a member of the Department of Library Services for a decade where her career has been focused primarily on client service. She is an active member of the Network of Data and Information Curation Communities (NeDICC) and Library Carpentries. She is involved in AI Chatbot for Libby focusing on a client service knowledge base. She is passionate about new trends in the library, particularly those that change the way service is





offered. She is also passionate about AI in Libraries because it is the future.

**Title: Integrating AI chatbot on the Academic Library Website.**

**Abstract:** The evolution of the 4th Industrial Revolution, machine learning, Artificial intelligence (AI), and the advancement of technology changes the way we work and in particular how libraries are known to operate and offer services. Change is inevitable, 21st-century libraries need to adopt and deploy new digital technology to stand the times. Academic libraries are knowledge hub, their role and functions keep on changing in building tools to promote access and discovery. AI chatbots are digital technologies that change the user experience and customer service landscape. They are powerful digital information service tools of AI for libraries. We are living in an era where people prefer chatting to talking. AI positions academic libraries to be a hub of technology that enhances learning space, to improves existing products and services. AI is also imperative in enhancing engagement and interaction.

AI chatbot can be seen as a reference service marketing tool to familiarize users with a variety of library resources and services. The library website serves as an access point and virtual point of contact for interacting with users. It is an information service tool where users find information or even learn about library products/services, facilities, news, and events. Artificial intelligence (AI) chatbots are game changers that can be incorporated into academic libraries' operations as service enhancement tools that change the user experience landscape. They also change the user-seeking behaviour. The paper will also attempt to evaluate the impact of IA chatbot both at the operational level and its usefulness to the client service portfolio. By integrating the chatbot on the library website, academic libraries can gain new insights into the kinds of information users search on the library's website and search phrases they use according to specific topics.

**35 Prof. Cristian Maturana**  
**Documentalist Librarian, Santiago Library, Chile**



Bachelor's degree holder Cristian Maturana Maturana is a Documentalist Librarian specializing in service innovation and design, with experience in quality management, information security, social media strategies, and digital marketing. He is the Coordinator of Innovation and Technology at the Santiago Library in Chile, which is part of the National Service for Cultural Heritage. He works as a teacher at the ENAC Technical Training Center and has also collaborated as a teacher at the Universidad Tecnológica Metropolitana and the Universidad Alberto Hurtado, among other higher education centers.

He has participated in and led various Ibero-American projects related to online education and knowledge management, such as Aprender3c, SocialBiblio, Infotecarios, Infoconexión, and Innovalibre, among others. He has provided consultancy services to various organizations, institutions, and companies in service development, digital positioning, implementation of technological solutions, and e-commerce. He has received several awards, scholarships, and recognitions, including the International Visitor Leadership Program (IVLP) from the United States government (2010) and participation in the INELI Iberoamerica program of the Bill & Melinda Gates Foundation (2015-2017).

**Title: Total Quality in Libraries Using Artificial Intelligence.**

**Abstract:** Developing processes: Libraries need to develop processes that are efficient, effective, and user-friendly. This includes developing procedures for acquiring, cataloging, and circulating materials, as well as providing reference and research services. Measuring performance: Libraries need to measure their performance to identify areas for improvement. This includes collecting data on customer satisfaction, circulation, reference requests, and other key performance indicators.

Continuous improvement: Libraries need to continuously improve their processes and outcomes by involving all staff in the improvement process, identifying best practices, and implementing new ideas. The application of Total Quality in libraries can lead to several benefits, including Improved customer satisfaction: By understanding customer requirements and delivering services that meet their needs, libraries can improve customer satisfaction and loyalty. Increased efficiency: By developing efficient processes, libraries can reduce costs, increase productivity,



and improve service delivery. Better decision-making: By measuring performance and collecting data, libraries can make informed decisions and allocate resources more effectively. Enhanced organizational performance: By continuously improving processes and outcomes, libraries can enhance their reputation, attract more users, and achieve better results. In conclusion, Total Quality is a powerful approach to management that can help libraries to deliver better services, increase customer satisfaction, and achieve better results. The application of Total Quality in libraries requires a commitment to continuous improvement, a focus on customer requirements, and a willingness to embrace new ideas and approaches. By adopting this approach, libraries can enhance their role as a vital component of our society and meet the challenges of the 21st century.

### **36** Mrs. Ciellie Jansen van Vuuren Senior Business Analyst, North-West University, South Africa.

Experience in the higher education industry, coupled with her proficiency in analytical, technical, and problem-solving techniques showcases a versatile skill set. Her academic achievement of a master's degree in Natural Science education, with a focus on Chemistry and Computer Science from North-West University, indicates a solid foundation in both education and technology-related fields. This combination of skills and expertise is valuable in bridging the gap between education and technology, which is crucial in today's educational landscape.

#### **Topic: Future of Teaching and Learning Analytics at the NWU.**

**Abstract:** Teaching and learning analytics have emerged as powerful methodologies within the field of education, aiming to enhance the educational experience through data-driven insights. This abstract delves into the essence of teaching and learning analytics, highlighting their significance, methodologies, benefits, and challenges. Teaching analytics involves the systematic collection, analysis, and interpretation of data to gain a deeper understanding of instructional practices. By harnessing data from various sources such as learning management systems, assessments, and student interactions, educators can make informed decisions to optimize their teaching strategies. Learning analytics, on the other hand, focuses on analysing learner data to identify patterns, trends, and individual learning trajectories. It provides educators with the means to personalize learning experiences, provide timely interventions, and ultimately improve student outcomes. However, challenges exist in the implementation of teaching and learning analytics. Ethical concerns related to student data privacy and security necessitate robust governance frameworks. Ensuring data accuracy and reliability is another challenge, as erroneous insights can lead to misguided interventions. Furthermore, effectively translating data findings into actionable strategies requires a balance between quantitative insights and the nuanced realities of education. In conclusion, teaching and learning analytics offer transformative potential in the realm of education. By harnessing data-driven insights, educators can tailor their approaches, enhance student outcomes, and refine institutional practices. While challenges persist, the benefits of these analytics far outweigh the drawbacks, ushering in an era of evidence-based education that holds the promise of better learning experiences for all.

### **37** Dr. Mathew Moyo Chief Director: Library and Information Services, North-West University.



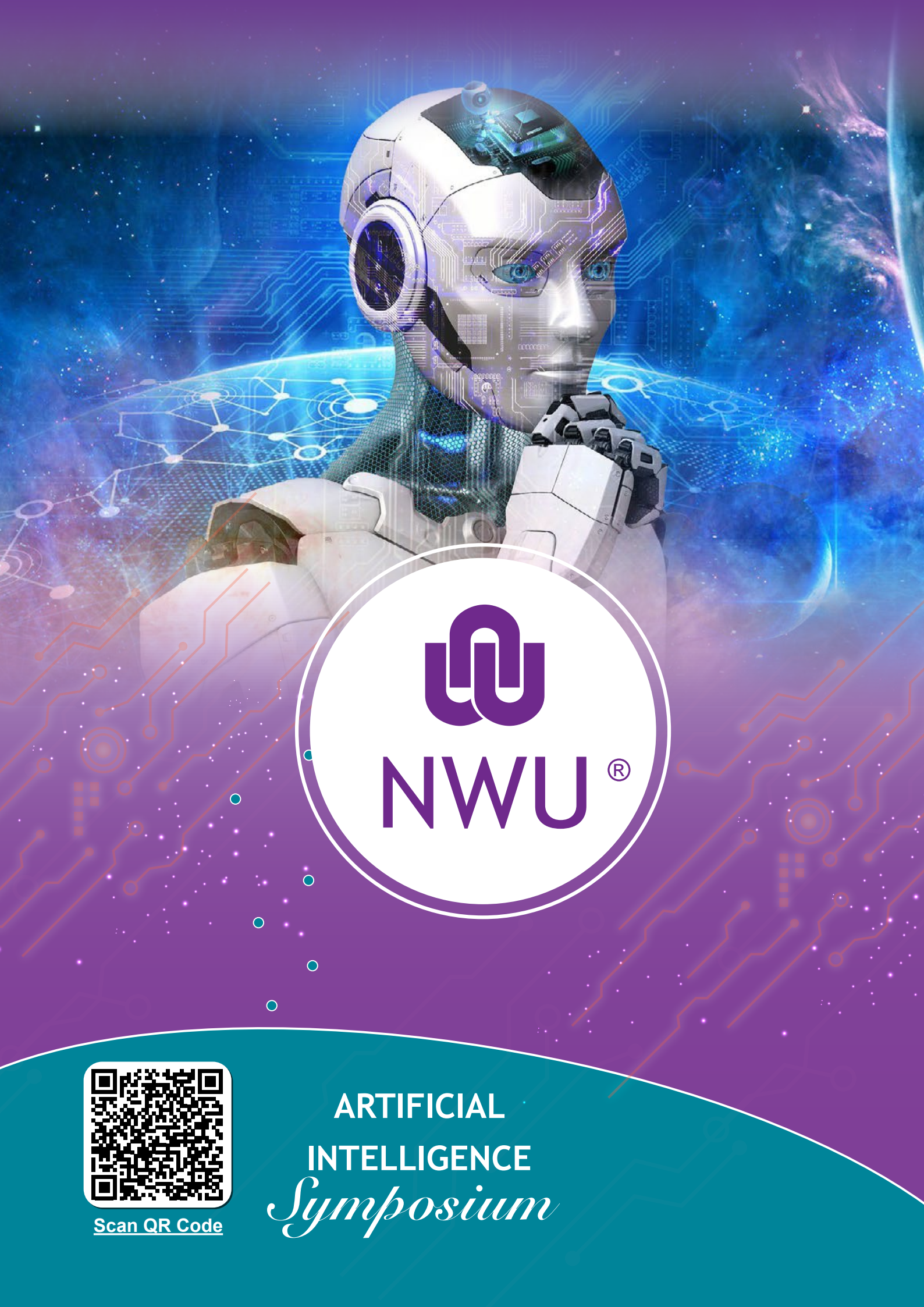
Mathew Moyo is currently Chief Director: Library and Information Service at the North-West University, South Africa. His experience in the LIS field spans more than 25 years. Dr. Moyo has also lectured in the Information Science field for more than 5 years. He holds a Doctoral Degree in Library and Information Science, as well as leadership qualifications. He has read papers at national and international conferences, as well as serving as a reviewer for various journals and examiner for a number of universities.

Mathew's research interests are in the areas of information literacy, Research Data Management, user behavior, and governance/management, among others. He is also passionate about mentorship and capacity building.

**Title: NWU LIS 4IR Context.**







Scan QR Code

ARTIFICIAL  
INTELLIGENCE  
*Symposium*