

# Shaping the adoption and use of Artificial Intelligence within the context of Academic Libraries in Kenya

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# This Paper...

- Is based on a review of literature on the topic to assess their awareness, adoption readiness and use of AI in academic libraries.
- Gives insight into the capabilities and possible use of AI in academic libraries in Kenya
- Discusses how academic library staff can be oriented to accept and use artificial intelligence to enhance provision of services, improve user experience, enable more effective and efficient library operations
- Findings discussed in terms of the potential impact for academic libraries to become artificially intelligent and the implications for how best these libraries can leverage artificial intelligence to improve their operations and services.

# Introduction

- Artificial Intelligence (AI) is quickly gaining traction as a topic of interest among information technology professionals and innovators all over the world.
- AI has progressively advanced and permeated all sectors of our society e.g. business, art, education, and medical fields, well beyond the computing industry (Ng et al., 2021).
- Global North is better prepared to reap the benefits of AI than the Global South (Arakpogun et al., 2021).

- Africa is gaining momentum with a thriving AI ecosystem built in last few years with countries such as Mauritius (53.27), Egypt (52.69), South Africa (47.28), and Tunisia (46.07) leading the pack (Government AI Readiness Index, 2023).
- Driven by presence of locally developed technology spaces and internationally driven technology hubs and centers by big international companies such as Twitter, Google, Facebook, Amazon and Microsoft.
- Adoption in Kenya may be described as still in its infancy stage - Largely driven by the nation's youth who have embraced and mastered digital tools, making Kenya a fast-growing global tech hub, and a nucleus of innovation and technological prowess in Africa.

# Artificial Intelligence

- Allen Newell and Herbert Simon in 1954 were the first people to attempt on programming computers for general intelligence (McCarthy, 2007).
- In 1955, John McCarthy coined term Artificial Intelligence (AI) to describe computer programmes which seemingly exhibit intelligence, that is, computers that perform tasks which when performed by humans require them to be intelligent (Rajaraman, 2014, p. 16).
- AI was first defined as “the science and engineering of making intelligent machines” (Marr, 2018).

- Due to rapid growth, many other definitions have emerged in attempt to cover as many possibilities of AI in our day-to-day life.
- Wang (2019) broadens and defines AI as the “science and technology of research and development of theories, methods, techniques, and application systems for simulating and extending human intelligence”
- Akgun and Greenhow (2022) define AI as “a branch of Computer Science combining Machine Learning, Algorithm development, Natural Language Processing”.
- Artificial intelligence seeks to create “intelligent” machines that work and react more like humans.

- It is of great significance for Academic libraries to become self aware i.e. define their present in order to shape their future in and with AI.
- Key to enhancing the potential and countering the downside of AI in academic libraries is awareness creation through conversation and training.
- Conversation and training on how AI might be deployed within libraries and how librarians may help define the products and services that come from these new AI technologies.

- Deployment of AI is not a replacement for any kind of service that libraries provide or any kind of work that library staff members do, but rather an enhancement of their work.
- Academic libraries can engage correctly with AI to improve on a lot of fundamental library issues
- AI can free professional staff to engage in more complex or complicated issues around information science.
- AI touches on many functions of Academic library activities such as guided literature search and recommendations, predictive modeling of demands for collections, chat bots and virtual assistance instead of human reference services, and automation of routine tasks and operations.



# Advancing and supporting inclusive AI within Academic libraries

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Repository

- Historically, libraries have been on the forefront of championing for intellectual freedom and have even enshrined it within values e.g. statements issued by the American Library Associations in their Core Values of Librarianship
- Academic libraries have also been early adopters and implementers of new and emerging technologies e.g. automation of library services through Integrated Library Management Systems (ILMs); Online Public Access Catalogues (OPAC); adoption of e-resources on digital libraries and Institutional Repositories (IR)
- However, many are caught in a whirlwind of uncertainty as the world accelerates the adoption of inclusive, generative and other forms of AI.

Library

Archives

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- Traditional AI systems can easily perpetuate and amplify existing societal biases leading to discrimination or unfair outcomes for some in the society.
- Some library staff and leaders report concerns, frustrations, and fears about the encroaching of AI in the future of libraries, especially regarding inclusive workplace practices.
- Librarians already have traditional ethics and values that form a ready made frame of reference to understand issues around AI and to do the right thing for every user.
- There is still a long way to before every one is equipped with the knowledge and skills to reap its benefits, thus the need for Inclusive AI.

- Inclusive AI is the practice of designing, developing and implementing AI systems that respect and represent the diversity of human values, cultures and identities.
- Academic Librarians and information professionals care about humans and society.
- They interact on a day-to-day basis with fellow humans because they are the primary consumers of any service they provide.

- The primary goal of an academic librarian in the advent of AI is therefore augmenting human intelligence and not replacing it.
- Academic libraries need to encourage members of staff to learn more about some of these AI tools and products particularly generative AI.
- It is critical for academic librarians to get informed and get involved with a focus on supporting AI systems that are indiscriminative, nondiscriminatory, not biased and are accessible to all users and that benefit all members of the society.

- They can learn more about AI tools and products particularly generative AI (a type of AI that can create new content and ideas, including conversations, stories, images, videos, and music) e.g. Chatgpt
- They can get informed and get involved with a focus on supporting AI systems that are indiscriminative, not biased and are accessible to all users and that benefit all members of the society.
- They can ensure that general AI literacy becomes part of library outreach efforts.

# Possibilities and capabilities of Artificial Intelligence in Academic Libraries

- Collaborative Research and Knowledge Sharing
- Enhanced Search and Discovery
- Personalized Recommendations
- Data Management and Analysis
- Virtual Assistants and Chatbots
- Content Curation and Metadata Tagging
- Text and Data Mining
- Digital Preservation and Archiving
- Accessibility and Inclusivity
- Predictive Analytics

# Artificial Intelligence Tools in Academic Libraries

- Chatgpt
- Opengpt
- Connectedpapers - Graphs related papers
- Semantic Scholar - publisher partnerships, data providers, and web crawls
- ResearchRabbit - literature mapping tool
- typeset.io - discovering, understanding, writing, formatting, and publishing
- ASReview Lab - Systematic review assistant
- Ellie.ai - Data Product Design and Collaboration

# Reskilling and up skilling for Academic Libraries in the age of AI

- New technologies, such as AI are causing major disruptions to the world of work, thus making it critical to build an agile workforce capable of navigating the fast-changing labor market through appropriate and timely skilling, reskilling and up skilling (ILO, 2022).
- AI brings with it a demand for new skills amongst academic library staff.
- Reskilling and up skilling offer the much needed and vital solutions for academic libraries remain competitive.



- Up skilling involves learning new skills or teaching library staff new capabilities to enhance their existing roles.
- Reskilling entails acquiring new skills to transition into a different job role or training individuals for alternative roles.
- Up skilling and reskilling answer the question of AI curiosity, built optimism and confidence about its arrival, and help library employees make a transition from concern to informed perspectives, especially if given time, resources and opportunities.
- Up skilling and reskilling is about conversation and training.
- Opportunities for up skilling and reskilling through trainings and web events that openly available beyond any particular geography. a

- Support for staff from university and library leaders is a significant factor in building momentum for staff upskilling and reskilling - helps to negate the notion that jobs will be lost to AI.
- Allow staff to interact with technologies, use them, experiment with them without constraints to their efforts.
- Enhance professional development budgets to allow people to learn in areas that meaningful to them. objectively, the most critical mission is to support library staff, faculty and students so that they become enriched by awareness and understanding of the issues around AI.

# Conclusion

- The AI revolution is not on the horizon, it is already here and libraries need to make peace with this fact and begin the process of co-existence.
- The potential for adoption and use of artificial intelligence in academic libraries is high
- It may not only enhance the operations and provision of current services, but also lead to the introduction of new services and functions to libraries as well as enhancing collaboration and sharing.
- Need to create awareness by educating and training academic library staff and users in order to help them thrive in a society which uses artificial intelligence.

- Mission is to support library staff, faculty and students so that they become enriched by an awareness and understanding of the issues around AI.
- There is still a long way to go before every one is equipped with the knowledge and skills to reap its benefits.
- The priority therefore is not just for librarians but also for library communities to ensure that general AI literacy becomes part of library outreach efforts.

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