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Reimaging Information Retrieval: A Qualitative Study of Perception and Adoption of Artificial Intelligence by Librarians in Private Universities in Southwest Nigeria

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Keywords: Artificial intelligence; Digital literacy; Information retrieval; Socio-technical systems; Technology adoption

Abstract: The integration of artificial intelligence (AI) into academic library information retrieval (IR) systems is transforming search practices globally, yet empirical evidence from Nigerian private universities remains limited. This qualitative study explores perceptions and adoption of AI in IR practices among 194 librarians at private universities in Southwest Nigeria, using semi-structured interviews, focus group discussions and document analysis. A total of 36 participants were purposively selected as sample for the study. Data were collected using interviews, focus group discussions and document reviews. Findings reveal that librarians recognize AI as enhancing search precision, metadata quality and user satisfaction; however, adoption is constrained by limited technical expertise, infrastructural deficits, and the absence of formal AI policies. Ethical concerns, such as algorithmic bias and data privacy, also shape engagement with AI systems. The study concluded that effective AI integration requires human-AI collaboration, institutional support, targeted capacity-building, and context-sensitive governance frameworks. These insights provided practical guidance for library managers, policymakers and LIS educators aiming to harness AI responsibly in academic libraries, particularly for retrieval services.

Introduction

The rapid proliferation of artificial intelligence (AI) technologies has precipitated fundamental changes in information retrieval (IR) systems and search practices across higher education environments. Historically, IR in libraries evolved from manual cataloguing and Boolean-based catalogue searches to bibliographic databases and algorithmic ranking; more recently, AI techniques such as natural language processing (NLP), semantic search and recommender systems have enabled more context-aware, adaptive and personalized discovery experiences (Narendra et al, 2025).

AI-driven tools now perform a range of functions that are central to contemporary academic librarianship: automated metadata enhancement, semantic indexing, automatic subject clustering, predictive resource recommendations and

conversational agents for reference services (i.e. chatbots and virtual assistants). These innovations promise improved retrieval precision and recall, faster discovery and new modes of research support; however, they also introduce complex technical, ethical and managerial challenges for library practitioners (Islam et al, 2025).

Librarians occupy a pivotal locus between users and information systems; their practices and professional judgements both shape and are shaped by the affordances of AI search tools. Studies from varied contexts indicate that while many librarians view AI as a powerful instrument for enhancing service efficiency, they also express concerns about transparency, algorithmic bias, data privacy, skills gaps and the potential displacement of professional roles (Kisilowska-Szurmińska, 2025). These tensions imply that the adoption of AI in library IR is not solely a technical implementation issue but a socio-technical process that implicates professional training, institutional policies and ethical governance.

The literature further shows important geographic and infrastructural differences in AI adoption. Research focused on lower-resource and Global South settings highlights structural impediments: limited digital infrastructure, intermittent power and network connectivity, constrained budgets and insufficient human capital development, which slow the operationalisation of AI in libraries and affect the quality of AI-enabled IR implementations (Alam, 2024; Igbo et al, 2024). Consequently, context-sensitive empirical investigations are required to understand how librarians in these settings conceptualize and enact AI-driven search practices, and to identify enabling and constraining factors that are locally salient.

In Nigeria, particularly in the private university sector of the Southwest geopolitical zone, the pace of digital transformation in libraries has been uneven. While some libraries have adopted modern electronic resource management systems and experiment with discovery platforms, systematic evidence about how librarians use, adapt to and evaluate AI features in search tools remains limited. Existing national studies emphasise prerequisites for AI implementation, such as policy frameworks, infrastructure investment and staff capacity building and point to recurrent barriers such as funding shortfalls and inadequate technical expertise (Igbo et al, 2024). These findings suggest an urgent need for in-depth qualitative research that captures librarians' lived experiences with AI search tools within the specific administrative and infrastructural realities of Nigerian private universities.

This study, therefore, investigates AI-driven information retrieval practices among librarians in private universities in Southwest Nigeria. It adopts a qualitative, interpretivist approach to explore how librarians conceptualize AI in IR; which AI-enabled tools and features are being used in practice; the perceived advantages and limitations of these tools; and the organisational and professional conditions that facilitate or hinder effective adoption. By focusing on the voices of librarians from multiple private universities, the study aims to generate richly contextualised insights that can inform institutional strategies for responsible AI integration, targeted capacity development and locally appropriate governance measures.

Specifically, the introduction of AI into library discovery systems raises at least three interrelated empirical and normative concerns that this research addresses: effectiveness, whether AI features measurably improve search relevance and user satisfaction in the Nigerian private-university context? Equity and ethics: how do librarians perceive and mitigate risks of bias, privacy intrusion and misinformation when using AI tools? And professional readiness: what training, policy and infrastructural investments do librarians identify as necessary for productive and responsible AI adoption? Drawing on recent international and African studies, this research situates these questions within broader debates about AI as a techno-professional innovation that requires both technical deployment and human-centred governance.

By elucidating the search practices, perceptions and recommendations of librarians working in Southwest Nigeria's private universities, the study contributes to three practical and scholarly aims: to map current AI search practices and their immediate effects on reference and research support services; to identify capability gaps and institutional constraints that inhibit the responsible scaling of AI; and to offer policy-relevant recommendations for library managers, university leaders and LIS educators seeking to integrate AI in ways that enhance discovery while respecting professional values and local constraints.

It should be noted the previous studies highlighted majorly focused on AI generally, used surveys, ignored librarians' lived experiences, rarely implemented an adoption theory and rarely focused on private universities. Hence, this study is designed to address both an empirical gap (through qualitative evidence) and a theoretical gap (by explaining adoption through the lens of Diffusion of Innovation Theory). The subsequent sections present a focused review of the literature, the study's methodology, empirical findings and a discussion that ties the results to practice and policy implications.

Literature Review

AI technologies have transformed libraries from traditional repositories to dynamic and intelligent knowledge environments. Early conceptions of library automation focused primarily on digital catalogues and basic electronic search tools; however, recent advances in natural language processing (NLP), semantic search, deep learning and recommendation systems have enabled a more intuitive, efficient and user-centric approach to information access (Mala, 2024). These approaches build on the twin capabilities of AI, emulating aspects of human cognition and machine learning, optimizing performance through data-driven learning (Barman, 2025). AI's integration in libraries reflects broader intellectual shifts from traditional classification models to intelligent systems that can interpret query context, infer user intent and adjust outputs accordingly (Mupaikwa, 2024). Foundational work on these innovations suggests that AI is not merely a technical tool but constitutes an intellectual reconfiguration of library systems, enabling unprecedented support for discovery and research.

Studies consistently identify AI as central to enhancing IR performance in academic libraries. AI-driven search engines can overcome limitations of legacy IR models, such as keyword dependency and poor handling of ambiguous queries, by leveraging semantic understanding and contextual relevance ranking (Kini et al., 2024). Investigations into specific tasks, such as AI-generated subject headings, demonstrate both potential and limitations. For instance, while AI models can generate keywords rapidly, they often lack the nuanced judgment of human cataloguers, suggesting that AI support is best positioned as a complement to expert practice rather than a full replacement (Benahal, 2024). Collective evidence thus underscores AI's contribution to a more dynamic, relevant and user-responsive IR, while also situating these tools within ongoing hybrid human–machine workflows.

Beyond core search functions, AI innovations enhance broader library services and interactions. AI-enabled chatbots and virtual assistants support 24/7 reference services, offering prompt answers to user questions and freeing librarians to attend to complex inquiries (Abba, 2025). These systems hold particular promise in resource-constrained environments where staff availability is limited. Additionally, predictive analytics and data-driven insights enable libraries to anticipate user needs, tailor collections and allocate resources more efficiently (Barman, 2025). Emerging research suggests that beyond functional enhancements, AI can deepen user engagement by providing personalized discovery pathways and supporting digital literacy, especially when paired with targeted instruction on AI use (Marasinghe et al., 2024). Academic library research broadly positions AI as a means of enriching both front-end discovery services and diverse back-end operations such as indexing, classification and metadata creation, contributing to a more integrated service ecology.

A recurrent theme in the literature is that the benefits of AI are counterbalanced by significant adoption challenges. Empirical evidence from Africa specifically highlights these structural barriers, noting that many academic libraries have only begun experimenting with limited AI tools such as chatbots or automated self-checkout systems, with broader AI integration remaining nascent (Abba, 2025). These findings indicate that without targeted investments in infrastructure, policy and human capital, AI adoption is likely to remain uneven. AI integration also raises important ethical and professional issues. Critical literature emphasises concerns about algorithmic bias, privacy protection, transparency in AI decision-making and the potential displacement of professional judgment (Kini et al., 2024). Researchers advocate for responsible AI governance frameworks that balance technological innovation with library values of equity, access and intellectual freedom. Such frameworks are especially salient in search practices where algorithmic recommendations can shape user discovery pathways and influence research outcomes. Systematic reviews also highlight that studies focusing specifically on AI's ethical dimensions in library IR remain less prevalent, pointing to a clear gap for future inquiry (Marasinghe et al., 2024).

While the literature increasingly affirms AI's transformative role in IR and library services, several gaps persist. Literature reviews reveal a growing search interest in machine learning-based search systems and AI applications generally,

but comparatively fewer empirical studies examine librarians' lived experiences with these technologies, particularly in African and Global South contexts (Muhammad et al., 2025). Furthermore, the dynamic evolution of AI, especially recent advances in large language models and retrieval-augmented generation, suggests that research must continuously adapt to capture emerging capabilities, user responses and implications for professional practice. These trends underscore the importance of context-specific qualitative research, such as the present study of private university librarians in Southwest Nigeria, to extend and nuance global insights.

Theoretical Framework

The study was anchored on the Diffusion of Innovation Theory (DOI). The Diffusion of Innovation Theory (DOI) is a widely recognized theory for explaining how emerging technologies spread or diffuse within existing workplaces and organizations, including libraries. The theory was developed by Everett M. Rogers in 1962 to explain not only how new ideas and technologies are introduced into established work processes but also how different categories of users perceive and adopt these innovations in their work environments (Rogers, 2003; Dearing & Cox, 2018). The theory therefore provides a suitable theoretical foundation for understanding how libraries adopt and integrate AI into their existing operational processes.

The DOI classifies adopters of new technologies into five categories: innovators, early adopters, early majority, late majority and laggards. These categories reflect the varying levels of enthusiasm and readiness that individuals within organizations exhibit towards adopting new technologies. In the context of AI adoption in libraries, these groups engage with AI at different levels, resulting in uneven implementation of AI across libraries in both the Global South and the Global North. The pace at which individual libraries adopt AI depends on factors such as the availability of resources, the commitment of library leadership, and the perceived benefits of AI among librarians and other key stakeholders. Based on these considerations, the DOI is appropriate for this study because it adequately captures the major concepts and themes under investigation.

Methodology

This study adopted a qualitative exploratory research design to investigate how librarians in private universities in Southwest Nigeria conceptualize, adopt and experience artificial intelligence (AI)–driven information retrieval (IR) tools. The study population comprised 194 librarians working in 33 private universities across Southwest Nigeria. These universities were selected because private institutions in the region are often early adopters of digital technologies, making them relevant contexts for studying AI-related IR practices. A purposive sampling technique was employed to ensure the inclusion of 36 librarians with diverse roles, including Systems librarians, Reference and user services librarians, Digital services

librarians, Cataloguing/technical services staff and Electronic resources managers. The selection of 36 participants for the interview was based on the principle of data saturation rather than statistical representativeness, since qualitative studies focusses more on depth of understanding over sample size. Guest et al. (2006) noted that thematic saturation could be achieved within the first 12 interviews in relatively homogeneous samples. Therefore, the use of 36 interview participants was considered adequate to generate rich, comprehensive data and ensure that no significant new themes emerged during the interviews.

Data were collected using three complementary qualitative techniques: semi-structured interviews, focused group discussions (FGDs), and document reviews. All interviews and FGDs were audio-recorded (with participant consent) and transcribed verbatim. Data were analyzed using thematic analysis. NVivo was used for organizing, coding, and retrieving qualitative data. Ethical approval was obtained from the relevant university research ethics committee. Participation was voluntary and informed consent was obtained from all respondents. Confidentiality was assured by anonymizing institutions and participants' names. Data were securely stored on encrypted devices and used strictly for academic purposes. To ensure trustworthiness of the study, the researchers maintained credibility through member checking and prolonged engagement; maintained dependability through the use of audit trail and the codebook; and confirmability through reflexive notes and peer debriefing.

Table 1: Study Population

S/N	Private universities	Librarians
1	Achievers University, Owo, Ondo State	03
2	Adeleke University, Ede, Osun State	08
3	Ajayi Crowther University (ACU), Ibadan, Oyo State	08
4	Anchor University, Lagos State	03
5	Atiba University Oyo	03
6	Augustine University, Ilara, Epe, Lagos State	06
7	Backcock University, Illishan-Remo, Ogun State	14
8	Bells University of Technology, Ota, Ogun State	04
9	Bowen University, Iwo, Osun State	10
10	Caleb University, Imota, Lagos State	06
11	Chrisland University, Abeokuta, Ogun State	04
12	Christopher University, Mowe, Ogun State	04
13	Covenant University Ota, Ogun State	21
14	Crawford University, Igbesa, Ogun State	04
15	Crescent University, Abeokuta, Ogun State	03
16	Dominican University Ibadan (DUI), Oyo State	05
17	Dominion University Ibadan, Oyo State	03
18	Elizade University, Ilara-Mokin, Ondo State	05

S/N	Private universities	Librarians
19	Fountain University, Osogbo, Osun State	03
20	Hallmark University, Ijebu Itele, Ogun State	04
21	Joseph Ayo Babalola University (JABU), Ikeji-Arakeji, Osun State	08
22	Kings University, Ode Omu, Osun State	04
23	Kola Daisi University Ibadan (KUI), Oyo State	03
24	Lead City University (LCU), Ibadan, Oyo State	16
25	Mcpherson University, Seriki Sotayo, Ajebo, Ogun State	03
26	Mountain Top University, Mowe. Ogun State	03
27	Oduduwa University, Ipetumodu, Osun State	03
29	Pan-Atlantic University, Lagos State	05
29	Precious Cornerstone University, Ibadan, Oyo State	05
30	Redeemer's University Nigeria (RUN), Ede, Osun State	15
31	Trinity University, Ogun State	02
32	Westland University Iwo, Osun State	02
33	Westley University of Science and Technology, Ondo, Ondo State	04
	Total	194

Presentation of Results and Discussion of Findings

Data analysis yielded six major themes reflecting how librarians in private universities in Southwest Nigeria perceive, adopt and experience AI-driven information retrieval systems. These themes illuminate the complexity of technological adaptation, institutional readiness and professional identity within the context of emerging intelligent search environments.

Understanding and Conceptualisation of AI in Information Retrieval

Across participants, there was a general awareness of the AI concept, though the depth of understanding varied. Many librarians associated AI with automation, predictive analytics and enhanced search accuracy. Several participants described AI as an evolutionary progression of digital librarianship:

'For me, AI simply means a system that can learn what users need and give faster results. It's like having a smart assistant within the library database'. (Interview 14)

Others articulated uncertainty regarding AI processes:

'I know artificial intelligence improves search results, but I cannot clearly explain how it works behind the scenes. We just use what the vendors provide'. (FGD 2)

This variation suggests that conceptual understanding remains fragmented, with most librarians engaging with AI as end-users rather than as deeply informed practitioners.

Adoption and Use of AI-Driven Search Tools

Librarians reported using a range of AI-enhanced systems. These systems obviously have varying degrees of AI embedded into them, but at the barest minimum, they all have elements of artificial intelligence in them, and are used for the purpose of information retrieval. These systems include:

- EBSCO Discovery Service
- ProQuest's AI-powered search indexing
- Google Scholar's ranking algorithms
- ChatGPT/Bing Copilot for reference assistance
- AI-based plagiarism detectors
- Automated cataloguing tools (e.g., OCLC smart cataloguing suggestions)

The extent of use varied by institutional infrastructure and digital policy maturity:
'Our discovery tool now predicts search terms for users. Students immediately notice the difference; it feels more intuitive'. (Interview 33)
Some librarians noted significant improvements in query interpretation and relevance ranking:
'Before, students had difficulty finding Nigerian scholarly content, but with AI ranking, the system understands the context better'. (FGD 4)
However, adoption was sometimes passive, depending entirely on vendor-provided AI functionalities.

Perceived Benefits for Librarian Workflows and User Experience

Participants highlighted multiple benefits of AI-driven search systems:

- Enhanced search precision and speed: 'The search results are now more accurate. It has reduced the time we spend guiding users during information literacy sessions'. (Interview 21)
- Improved user satisfaction: 'Students feel the system *thinks* with them. They like how the search engine suggests topics and related keywords'. (FGD 1)
- Reduction in repetitive tasks: Librarians appreciated AI-enabled cataloguing and metadata extraction. 'Our cataloguing process used to take weeks; the AI suggestion tool has reduced that drastically'. (Interview 32)

These benefits indicate that AI tools are crucial in augmenting rather than replacing librarian expertise.

Challenges and Barriers to Effective AI Integration

Despite the benefits, several barriers constrained full adoption.

- Limited technical skills: 'We depend too much on vendors. If something technical happens, we cannot adjust the algorithms'. (Interview 27)

- Inadequate Funding and Infrastructure: 'The cost of subscriptions to Ai-driven databases is quite high. Management prioritises other things'. (FGD 3)
- Poor Internet Cnnectivity: 'AI search features work best when the internet is stable, but we struggle with frequent downtimes'. (Interview 19)
- Concerns about Accuracy and Over-reliance: Some librarians expressed caution. 'Sometimes the AI gives irrelevant results, but students trust it blindly'. (FGD 6)

These challenges underscore the infrastructural and capacity realities shaping AI adoption in the region.

Ethical, Privacy, and Professional Concerns

Participants expressed concerns about data privacy, algorithmic transparency and the shifting role of librarians.

- Data privacy risks: 'We do not know how user data are used by these AI tools. That privacy aspect is worrying.' (Interview 14)
- Algorithmic bias: 'Foreign databases sometimes prioritise Western scholarship, so African materials are pushed down in the search results'. (FGD 2)
- Professional identity and role adjustment: 'AI cannot replace the human interpretation we offer. But it changes how we do reference work'. (Interview 18)

Ethical reflections were particularly strong among senior librarians, who viewed AI as both an opportunity and a disruption.

Training Needs and Institutional Readiness for AI Adoption

Participants noted a clear gap between existing librarian skills and the competencies required to manage AI-enhanced IR systems effectively.

- Need for structure capacity-building: 'We have not had any formal training on AI in librarianship. Everything we know is self-taught.' (FGD 7)
- Desire for localised guidelines: 'We need a Nigerian-context guideline on how libraries should implement AI ethically'. (Interview 12)
- Institutional preparedness: Responses showed uneven readiness. 'Our Management is enthusiastic, but the infrastructure is not yet ready for full AI integration (Interview 15)

Overall, librarians expressed willingness to embrace AI tools but emphasised the need for continuous training and stronger institutional support.

Discussion of Findings

Librarians demonstrated a foundational, but uneven, understanding of AI concept, with many equating AI primarily with "smart search" or automation. These perceptions align with earlier literature that identifies AI-driven discovery tools as catalysts for improved retrieval accuracy, particularly through natural language processing (NLP), semantic search and recommender systems (Mupaikwa, 2024). However, gaps

in technical understanding indicate that AI adoption is still at the early stages of knowledge and persuasion. This uneven understanding of AI reflects the knowledge stage of Rogers' Diffusion of Innovations Theory where early adopters first become aware of an innovation but have not yet developed the technical competence to adopt it effectively. Similar studies in African academic libraries report comparable conceptual ambiguities and emphasise the need for foundational AI literacy (Igbo et al, 2024). Thus, librarians' current perceptions reflect both enthusiasm and conceptual uncertainty.

Participants reported using AI-enabled platforms such as advanced discovery layers, plagiarism detection systems, automated indexing tools and chat-based reference assistants. Their experiences mirror global trends in the increasing deployment of AI-enhanced IR systems within academic libraries (Kisilowska-Szurmińska, 2025). However, uneven access to AI-enabled systems across institutions reflects that technological effectiveness depends on supportive organisational structures. Lack of standardisation across universities also echoes findings by Gbadebo (2024), who observed persistent infrastructural disparities affecting digital innovation in Nigerian tertiary institutions. The fact that AI technology is already being used in some libraries, indicates a shift beyond awareness into use. As noted by DOI, the reported uneven distribution across institutions shows the differences between early adopters and later adopters.

A dominant theme was librarians' limited technical expertise with AI functionalities. Many users reported reliance on "trial and error" and self-learning approaches. This echoes previous findings that librarians in developing contexts often lack formal training in AI, data analytics and machine learning (Benahal, 2024). The misalignment between available AI systems and librarians' competencies indicates a socio-technical imbalance that undermines effective utilisation. In line with this, Rogers opined that innovations perceived as difficult to understand or use are adopted more slowly. Hence, limited AI skills increase the perceived complexity of AI systems and reduce adoption.

Participants highlighted infrastructural constraints, including an unstable power supply, inadequate broadband connectivity, inconsistent access to paid AI tools and insufficient institutional funding. These challenges significantly affect compatibility and complexity, hindering the smooth integration of innovative technologies. Consistent with existing literature, infrastructural deficits remain major barriers to digital transformation in Nigerian academic libraries (Gbadebo, 2024). This study reinforces the argument that without stable infrastructural foundations, AI tools cannot yield optimal outcomes in IR processes. As Rogers argued, AI adoption is built around the urgency of need, and well the technology aligns the organizational environment. Hence, weak infrastructure reduces compatibility with existing work conditions, while limitations from the institution especially within the social system reduces the speed of diffusion innovation.

Librarians expressed concerns over algorithmic opacity, potential user surveillance, data privacy issues and the fear that automation might diminish traditional professional roles. These concerns align with global debates on the responsible deployment of AI in libraries (Kisilowska-Szurmińska, 2025). They also reflect the risk perception dimension of technology acceptance, which influences adoption decisions. This also highlights how technological innovations disrupt professional identities and labour practices. While librarians acknowledged the efficiency of AI-driven processes, they emphasised the importance of human judgment in user advisory services and metadata quality assurance. In line with DOI, at the persuasion stage, people form favourable or unfavourable attitudes towards an innovation. And prevailing ethical concerns could influence librarians' perceptions and willingness to embrace AI despite recognizing its benefits.

The findings underscore that organisational readiness, including supportive policies, technical units and leadership commitment, is decisive in AI adoption. This aligns strongly with organisational innovativeness, which emphasises that institutions with supportive leadership and strategic clarity adopt innovations more rapidly. Additionally, the study supports previous research suggesting that without explicit AI strategies, librarians often lack a clear roadmap for integrating AI tools into service delivery (Mupaikwa, 2024). Participants' calls for AI-focused policies reflect a growing institutional awareness of the need for structured technology governance. This call by the participant follows closely with Rogers' argument that organisational norms, leadership and communication channels are key in adoption decisions. Institutional support determines whether libraries proceed from positive attitudes to actual adoption and sustained implementation.

Conclusion

This study examined how librarians in private universities in Southwest Nigeria perceive, adopt and navigate AI-driven information retrieval (IR) tools. The findings show that librarians generally recognise AI as a powerful innovation capable of enhancing information retrieval by improving search precision, enhancing metadata quality and improving the user experience. Their positive perceptions reflect perceived usefulness and ease of use, particularly where AI systems reduced manual workload and improved relevance ranking.

However, despite these positive perceptions, adoption remains inconsistent. Librarians' limited technical expertise, infrastructural deficits and the absence of institutional AI policies constrain movement from early awareness to full implementation. This further reveals a misalignment between technological capabilities and organisational or human capacities, limiting the effectiveness of AI-driven systems.

Ethical and professional concerns, including algorithmic opacity, data privacy risks and the potential loss of human agency, underscore the need for responsible, human-centred AI integration. Ultimately, the study demonstrates that successful adoption of AI-driven IR in academic libraries depends not only on technological

availability but also on coordinated institutional support, strategic capacity-building and socio-technical alignment.

Recommendation

Universities should design structured learning programmes, such as workshops, micro-credentials and certifications, to enhance librarians' skills in AI, NLP, data analytics and IR automation.

Library and university management should create clear policies addressing responsible AI use, algorithmic transparency, user data protection and ethical considerations. Such governance mechanisms will align technological innovation with institutional values.

Library and university management should ensure stable electricity, robust broadband connectivity and updated library management systems. These are essential for full utilisation of AI-driven IR tools. Investments in infrastructure directly enhance compatibility and reduce perceived complexity.

Library and university management should ensure that AI tools augment, not replace, professional judgment. Librarians should remain central in interpreting AI-generated results, moderating algorithmic recommendations and providing contextualised support. This approach maintains socio-technical balance and preserves professional autonomy.

Strategic collaborations with AI solution providers, LIS schools and ICT units can enhance access to customised tools and up-to-date training. Such partnerships accelerate diffusion and embed innovation into organisational culture.

Library schools should include core and elective modules on AI, machine learning, data ethics, and computational librarianship. This prepares future librarians to operate confidently in AI-augmented information environments.

References

Abba, T. (2025). Use of artificial intelligence technologies in rendering library services: An empirical evidence from university libraries in Africa. *African Journal of Library, Archives and Information Science, 34*(1), 23–35. https://doi.org/10.4314/ajlais.v34i1.2

Alam, A. F., Subaveerapandiyan, A., Mvula, D., & Tiwary, N. (2024). *AI literacy and Zambian librarians: A study of perceptions and applications*. *Open Information Science, 8*(1), Article 20220166. https://doi.org/10.1515/opis-2022-0166

Barman, B. (2025). Artificial intelligence and machine learning in libraries: Transforming information access and management. *RGU Journal of Social Science and Research, 1*(1), 1–7. https://doi.org/10.3254/rgujssr.v1i1.4

Benahal, A. R. (2024). Evaluation of AI-generated keywords for information retrieval in library catalogues. *Journal of Information and Knowledge, 61*(4), 197–203. https://doi.org/10.17821/srels/2024/v61i4/171505

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Dearing, J. W., & Cox, J. G. (2018). Diffusion of innovations theory, principles, and practice. *Health Affairs, 37*(2), 183–190. https://doi.org/10.1377/hlthaff.2017.1104

Gbadebo, A. D. (2024). Application of artificial intelligence and machine learning in academic libraries. *International Journal of Social and Educational Innovation (IJSEIro), 11*(22), 184–201. https://journals.aseiacademic.org/index.php/ijsei/article/view/417

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59–82. https://doi.org/10.1177/1525822X05279903

Igbo, H. U., Imo, N. T., Jidere, U. J., & Ugwu, F. N. (2025). Adopting artificial intelligence in academic library services in Nigeria: Requirements and challenges. *Nigerbiblios: Journal of National Library of Nigeria, 34*(1), 1–18. https://nigerbiblios.nln.gov.ng/index.php/nigerbiblios/article/view/145

Islam, M. N., Ahmad, S., Aqil, M., Hu, G., Ashiq, M., Abusharhah, M. M., & Saky, S. A. T. M. (2025). Application of artificial intelligence in academic libraries: A bibliometric analysis and knowledge mapping. *Discover Artificial Intelligence, 5*, Article 59. https://doi.org/10.1007/s44163-025-00295-9

Kini, K. S., Ranjan, K., Avula, V. A., Ratkanthiwar, M. S., Kondagurle, M. R., Agashe, P. A. T., & Zende, S. S. (2024). The role of artificial intelligence in enhancing information retrieval systems in academic libraries. *Library Progress International, 44*(3), 22526–22541. https://bpasjournals.com/library-science/index.php/journal/article/view/2875

Kisilowska-Szurmińska, M. (2025). Artificial intelligence in academic libraries: A tool, a collaborator, an adversary? A Delphi study of university librarians in Poland. *The Journal of Academic Librarianship, 51*(5), Article 103114. https://doi.org/10.1016/j.acalib.2025.103114

Mala, J. M. (2024). From Dewey to deep learning: Exploring the intellectual renaissance of libraries through artificial intelligence. *Journal of Information and Knowledge, 61*(1), 29–38. https://doi.org/10.17821/srels/2024/v61i1/171001

Marasinghe, M. M. I. K., Gunasekera, D., & Senevirathne, W. A. R. (2024). Application of artificial intelligence for library services: A systematic literature review. *Journal of the University Librarians Association of Sri Lanka, 27*(2), 257–284. https://doi.org/10.4038/jula.v27i2.8089

Muhammad, Z. D., Adamu, R., Abubakar, S., & Ibrahim, K. (2025). Application of artificial intelligence in information retrieval for academic research: A systematic literature review using PRISMA. *Dala Journal of Library and Information Practice, 3*(1). https://kijcl.khairun.edu.ng/index.php/djlip/article/view/63

Mupaikwa, E. (2024). The application of artificial intelligence and machine learning in academic libraries. In M. Khosrow-Pour (Ed.), *Advances in information quality and management: Encyclopedia of Information Science and Technology* (6th ed., pp. 1–18). IGI Global. https://doi.org/10.4018/978-1-6684-7366-5.ch041

Narendra, A. P., Dewi, C., Gunawan, L. S., & Ardi, A. S. (2025). Artificial intelligence implementation in library information systems: Current trends and future studies. *Vietnam Journal of Computer Science, 12*(3), 209–233. https://doi.org/10.1142/S2196888824300023

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.