



RESEARCH ARTICLE

AN OVERVIEW OF AI AND THE FUTURE OF LIBRARY PROFESSIONALS

Dr. Dashrath Singh Nag

Librarian, Central Library, AISECT University, Hazaribag

ARTICLE INFO

Article History:

Received 15th December, 2025

Received in revised form

25th January, 2026

Accepted 18th February, 2026

Published online 29th March, 2026

Keywords:

Artificial Intelligence, Library Professionals, Future of Libraries, AI Literacy, Smart Libraries, Information Services, Digital Transformation, Ethical AI, Professional Competencies

***Corresponding author:**

Dr. Dashrath Singh Nag

Copyright©2026, Dashrath Singh Nag, 2026. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Dr. Dashrath Singh Nag, 2026. "An overview of AI and the Future of Library Professionals." *International Journal of Current Research*, 18, (03), 36537-36539.

ABSTRACT

The rapid advancement of Artificial Intelligence (AI) is transforming the information landscape and redefining the roles and responsibilities of library professionals. From automated cataloguing, intelligent discovery systems, and chatbots to predictive analytics and personalized user services, AI technologies are increasingly embedded in library operations and services. This chapter examines the impact of AI on the future of library professionals, focusing on how traditional roles are evolving into technology-enabled, data-driven, and user-centric functions. It explores emerging competencies such as AI literacy, data stewardship, algorithmic awareness, and ethical decision-making, which are essential for librarians in the digital age. The chapter also discusses challenges associated with AI adoption, including bias, data privacy, transparency, workforce reskilling, and the digital divide. By highlighting real-world applications and future trends, the study emphasizes the need for continuous professional development and institutional support to ensure that library professionals remain relevant and resilient. The chapter concludes that AI should be viewed not as a replacement but as an augmentative tool that empowers library professionals to enhance access to information, improve service quality, and strengthen their role as facilitators of knowledge in an AI-driven society.

INTRODUCTION

Libraries have historically evolved alongside technological advancements, from the transition of manuscripts to print, card catalogues to Online Public Access Catalogues (OPACs), and physical collections to digital repositories. In the 21st century, Artificial Intelligence (AI) has emerged as a transformative force with the potential to redefine the roles, responsibilities, and skill sets of library professionals. AI is no longer a futuristic concept; it is actively reshaping information discovery, knowledge organization, user services, and administrative decision-making in libraries across the globe. "Artificial Intelligence refers to computer systems capable of performing tasks that typically require human intelligence, such as learning, reasoning, problem-solving, natural language understanding, and pattern recognition." (Russell & Norvig, 2021). In libraries, AI applications range from chatbots and recommendation systems to automated metadata generation and predictive analytics. This chapter explores the impact of AI on the future of library professionals, examining emerging roles, competencies, ethical concerns, and opportunities. It argues that rather than replacing librarians, AI augments their capabilities, positioning them as information strategists, digital curators, and AI-literate professionals in the knowledge ecosystem.

Evolution of Technology in Libraries: From Automation to AI

Early Automation in Libraries: Library automation began in the mid-20th century with the introduction of computers for

circulation control and cataloguing. Integrated Library Management Systems (ILMS) revolutionized workflows by automating acquisitions, serials control, and OPACs. These systems relied on rule-based logic rather than intelligent decision-making.

Digital Libraries and Web Technologies: The emergence of the internet and web-based technologies led to the development of digital libraries, institutional repositories, and electronic resources management systems. Librarians adapted by acquiring skills in database management, digital preservation, and licensing.

Transition to AI-Driven Libraries: "AI marks a shift from automation to **intelligent systems** capable of learning from data and user behavior. Technologies such as machine learning (ML), natural language processing (NLP), computer vision, and generative AI are now embedded in discovery platforms, search engines, and research tools." (Cox et al., 2019). This transition necessitates a redefinition of professional roles, moving beyond operational tasks to strategic, analytical, and ethical responsibilities.

Key AI Applications in Libraries

AI-Powered Discovery Systems: Modern discovery tools use AI algorithms to deliver personalized search results, relevance ranking, and semantic search capabilities. Unlike traditional

keyword-based searches, AI-enabled systems understand user intent and context.

Example: Ex Libris Primo and EBSCO Discovery Service employ machine learning to improve relevance ranking based on user interactions and metadata patterns.

Impact on Professionals: Librarians must understand algorithmic bias, relevance logic, and data quality to ensure equitable access to information.

Chatbots and Virtual Reference Services: AI-driven chatbots provide 24/7 reference assistance by answering frequently asked questions, guiding users through databases, and supporting basic research queries.

Example: The National Library of Singapore uses an AI chatbot to assist users with catalogue searches, membership queries, and library services.

Impact on Professionals: While chatbots handle routine queries, librarians focus on complex reference services, research consultation, and information literacy instruction.

3.3 Automated Cataloguing and Metadata Generation AI tools can automatically extract metadata from documents, images, audio, and video using NLP and computer vision.

Example: OCLC's experiments with AI-assisted cataloguing demonstrate automated subject assignment and entity recognition.

Impact on Professionals: Cataloguers transition from manual data entry to metadata validation, quality control, and schema design.

Collection Development and Predictive Analytics: AI supports evidence-based collection development by analyzing usage patterns, citation trends, and user preferences.

Example: AI-driven analytics tools recommend acquisitions based on demand forecasting and curriculum alignment.

Impact on Professionals: Librarians become data-informed **decision-makers**, balancing algorithmic recommendations with professional judgment.

Research Support and Scholarly Communication: AI tools assist researchers with literature reviews, plagiarism detection, citation analysis, and research impact assessment.

Example: Tools such as Semantic Scholar and Scite use AI to contextualize citations and assess research influence.

Impact on Professionals: Library professionals play a crucial role in training users to critically evaluate AI-generated research insights.

Changing Roles of Library Professionals in the AI Era

From Information Gatekeepers to Knowledge Facilitators AI reduces barriers to information access, shifting librarians' roles from gatekeeping to facilitating critical engagement with information.

Emerging Professional Roles: AI introduces new and hybrid roles, including:

- AI Literacy Trainer
- Data Librarian
- Digital Scholarship Librarian
- Algorithm Auditor
- Research Data Management Specialist

These roles require interdisciplinary knowledge combining LIS, data science, ethics, and pedagogy.

Human-Centered Skills in an AI-Driven Environment

Despite technological advancements, human skills remain irreplaceable:

- Critical thinking
- Ethical reasoning
- Empathy and user advocacy
- Teaching and mentoring

AI enhances efficiency, but **professional values guide responsible use.**

AI Literacy and Skill Development for Library Professionals

Defining AI Literacy: "AI literacy refers to the ability to understand, evaluate, and use AI tools responsibly, while recognizing their limitations and ethical implications." (Long & Magerko, 2020).

Core Competencies for Future Librarians

Key competencies include

- Basic understanding of AI concepts
- Data ethics and privacy
- Algorithmic bias awareness
- Prompt engineering and evaluation
- Policy development for AI use

Role of LIS Education and Continuing Professional Development

LIS curricula must integrate AI, data science, and digital ethics. Professional bodies should offer continuous training programs, workshops, and certifications.

Ethical, Legal, and Social Implications of AI in Libraries

Privacy and Surveillance Concerns

AI systems rely on user data, raising concerns about surveillance, data misuse, and consent. Libraries must uphold their core value of **user privacy**.

Algorithmic Bias and Fair Access: Biased training data can marginalize certain user groups. Librarians have a responsibility to advocate for transparent and inclusive AI systems.

Intellectual Freedom and AI Content: Generative AI tools may produce inaccurate or misleading information. Librarians must educate users about AI hallucinations and content verification.

Challenges and Opportunities

Challenges

- Skill gaps among professionals
- Limited budgets and infrastructure
- Resistance to change
- Ethical uncertainties

Opportunities

- Enhanced user experience
- Improved operational efficiency
- Expanded professional relevance
- Stronger role in digital governance

AI presents an opportunity for libraries to reaffirm their societal role as trusted knowledge institutions.

Future Outlook: Libraries as AI-Ethical Spaces: Libraries can serve as neutral, ethical spaces for AI education and governance, offering community programs on AI awareness, misinformation, and digital citizenship. By embedding AI within a framework of professional ethics, libraries can lead by example. The future library professional will not compete with AI but collaborate with it—leveraging technology while safeguarding human values.

CONCLUSION

Artificial Intelligence is reshaping the information landscape, redefining how libraries operate and how professionals serve users. Rather than signaling obsolescence, AI underscores the continued relevance of library professionals as ethical stewards, educators, and innovators. To remain future-ready, library professionals must embrace AI literacy, lifelong learning, and interdisciplinary collaboration. The future of librarianship lies not in resisting AI but in humanizing it, ensuring that technology serves knowledge, equity, and society at large.

REFERENCES

Cox, A. M., Pinfield, S. and Rutter, S. 2019. The intelligent library: Thought leaders' views on the likely impact of artificial intelligence on academic libraries. *Library Hi Tech*, 373, 418–435. <https://doi.org/10.1108/LHT-08-2018-0105>

- Long, D. and Magerko, B. 2020. What is AI literacy? Competencies and design considerations. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–16. <https://doi.org/10.1145/3313831.3376727>
- Russell, S. and Norvig, P. 2021. *Artificial intelligence: A modern approach* 4th ed.. Pearson.
- Taddeo, M., &Floridi, L. 2018. How AI can be a force for good. *Science*, 3616404, 751–752. <https://doi.org/10.1126/science.aat5991>
- IFLA. 2020. *Statement on artificial intelligence*. International Federation of Library Associations and Institutions.
- Agarwal, N. K. 2018. Exploring context in information behavior: Seeker, situation, surroundings, and shared identities. *Synthesis Lectures on Information Concepts, Retrieval, and Services*, 102, 1–110. <https://doi.org/10.2200/S00880ED1V01Y201804ICR062>
- Arlitsch, K. and Newell, B. 2017. Thriving in the age of accelerations: A brief look at the societal effects of artificial intelligence and the opportunities for libraries. *Journal of Library Administration*, 577, 789–798. <https://doi.org/10.1080/01930826.2017.1362912>
- Bawden, D. and Robinson, L. 2022. Information overload: An overview. *Oxford Encyclopedia of Information Science*. Oxford University Press.
- Borges, J. and Marques, A. M. 2020. Artificial intelligence in academic libraries: A state-of-the-art review. *Information Research*, 252. <http://informationr.net/ir/25-2/paper862.html>
- Breeding, M. 2018. Artificial intelligence for library systems. *Library Technology Reports*, 546, 1–35.
- Brynjolfsson, E. and McAfee, A. 2017. *Machine, platform, crowd: Harnessing our digital future*. W. W. Norton & Company.
- Casey, M. E., &Savastinuk, L. C. 2010. *Library 2.0: A guide to participatory library service*. Information Today.
- Crawford, K. 2021. *Atlas of AI: Power, politics, and the planetary costs of artificial intelligence*. Yale University Press.
- Floridi, L., Cows, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U., Rossi, F., Schafer, B., Valcke, P., &Vayena, E. 2018. AI4People—An ethical framework for a good AI society. *Minds and Machines*, 284, 689–707. <https://doi.org/10.1007/s11023-018-9482-5>
