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Human–Artificial Intelligence Collaboration in Academic Libraries: A Systematic Review of Librarians' Shifting Professional Roles and Jurisdictions

Afolabi, Toyosi Rachael; Johnson-Patten, Adedoyin Bukola; Jatto, Victor Omeiza; & Bamimore, Folake Funmilayo
Lead City University, Ibadan, Oyo State.
Corresponding Author: jatto.victor@lcu.edu.ng
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Abstract

The role renegotiation occurring within academic librarianship as AI systems take over jobs previously identified as solely human-cataloging, reference triage, literature screening, and metadata creation-is highlighted in this article. This systematic review synthesizes 30 peer-reviewed articles, systematic and bibliometric reviews, professional association reports, and case studies published between 2019 and 2026, interpreted via Abbott's theory of professional jurisdiction and contemporary human-AI collaboration frameworks, focusing specifically on how the professional role of librarians is being redefined and how skills and jurisdictions are shifting. Review results can be grouped into five themes: role reinvention as mover from custodianship to intelligent collaborator, competency and skill-gaps, automation anxiety and job loss fears, institutional reskilling and training response, and ethical stewardship as an emerging jurisdiction. Across the surveyed data, librarians are holding on and pushing into roles involving judgment, ethical responsibilities, and pedagogy-AI literacy training, algorithmic responsibility, and research consultation-while relinquishing rule-based and service tasks, like basic cataloging and directional reference, to automation. Librarians appear to have stronger conceptual awareness of AI than technical proficiency, and institutional training in AI is associated with higher levels of confidence and job security and lower levels of job loss fears, yet few surveyed institutions have formal AI on-boarding. The review indicates that librarians are in the process of shifting and not necessarily being replaced within academic libraries as a result of AI, to a more situated and judgmental position within librarianship in a way that aligns with Abbotts model of professional jurisdiction and abstraction in order to defend the profession. These implications to librarian education, continuing education and professional development, and further research are considered.

Keywords: Artificial Intelligence, Academic Librarians, Professional Roles, Human-AI Collaboration, Reskilling, Jurisdiction, Library Workforce.

Introduction

The profession of academic librarianship has already ridden out rounds of technological tsunami (card catalogs, integrated systems, full-text discovery tools) without shedding their jurisdiction over organizing, evaluating and mediating scholarship. The one ushered in now, at unprecedented scope and pace by generative artificial intelligence (AI) and large language models, has a different kind of impact: AI systems are now undertaking tasks long identified as professional expertise-from cataloging and classification, to triage of reference queries, literature scanning and metadata creation-and also defining an urgent need for entirely new competencies such as algorithmic literacy and AI governance (de Leon, 2026; Oladokun & Umar, 2025). This one-two punch of simultaneous job elimination and creation has generated a flood of fast-flowing and substantial research about how librarians' positions within the profession are being remade not only displaced. This reconceptualization of "remaking" role rather than role substitution is not only interesting theoretically but crucial in terms of practice.

Theories of the professions in sociology (chiefly by Andrew Abbott in The system of professions,1988) predict that the way that professions survive a crisis of technological and occupational displacement is by upholding jurisdictional boundaries around abstract, problem-solving work requiring considerable judgement-even as specific, operational task-type performance in each jurisdiction may become automated or lost to competing occupations. If that analysis of the professions can be applied to librarianship, then the relevant empirically-oriented questions should be those concerned with identifying where academic librarians are –or are choosing to be-able to hold their jurisdiction, as well as to let go of what can't be held, and where they can acquire new jurisdictions (such as AI ethics stewardship) (Cox, 2023). The review discussed below attempts to address such questions with a systematic review of recent empirical and conceptual literature. This review is underpinned by three research questions: 1. How is the professional transformation being enacted by this latest round of technology framed in the literature describing AI in academic libraries? 2. What are the identified training and competency short-falls and how are they being addressed? 3. What are the most common ethical, psychological, and occupational issues or concerns arising from human-AI collaboration in academic libraries, and how are these issues being addressed in research and practice?

Theoretical Framework

This review draws on two complementary streams of literature. Abbott's (1988) profession theory sees the profession as continuously trying to gain new jurisdiction over solvable problems; that survival of a profession is mediated more by the capacity to build and deconstruct abstractable knowledge and mold practice to newly emergent social and technological niches rather than by the capacity to perform specific tasks. We used the theory of professions to map library profession evolution over previous cycles of automation and showed the benefits of a profession-based lens for envisioning the impacts of AI, by attending to how those that allow us to hold jurisdictional claims (Cox, 2023).

In parallel to that approach, we drew from current human-AI collaboration literature; within HAC research, many different terms are used to understand how humans and AI may interact. While a primary distinction in HAC is made between automation (where the AI replaces human task performance) on the one hand and augmentation or collaboration (Where AI works alongside human task performance) on the other; that human agents and AI cooperate in the pursuit of their shared task aims; and that AI acts more as a "team mate" than just an assistive "tool". Studies on how AI has impacted on knowledge

work across industries report productivity growth was associated with collaborative as opposed to purely automated use and demonstrated the key determinants of AI trust (e.g., explains, reliability; fairness) (Gao et al., 2026; Do Khac & Leyer, 2025). Within this second literature stream, for example, our review has used this approach to differentiate those work-related activities where in AI replaces human capacity (e.g., basic cataloging), from those wherein its capacity comes as complementary augmentation to human capacity (e.g., lit review under the direct supervision of the librarian).

Methodology

Search Strategy

This review was written in adherence to 2020 guidelines for the reporting of systematic reviews (Page et al., 2021). In order to generate effective and efficient searches the following query terms in combinations involving "artificial intelligence", "generative AI" and "large language models" alongside "librarian role", "academic librarian", "human-AI collaboration", "library workforces" and "reskilling" and "professional identity", were used on Scopus, Web of Science, LISA, Google Scholar, and by examining professional and/ or practitioner resources and institutions in a similar vein to that conducted in similar reviews on this body of knowledge (Oladokun and Umar, 2025).

Eligibility Criteria

Criteria for inclusion sources: a) Published from 2019 through 2026 b) Provided specific analysis of artificial intelligence's (AI's) influence on academic librarians' professional roles, skill sets, identities or academic work forcesc) Contained empirical data, a systematic or bibliometric review or significant theoretical / conceptual analysis or case study. Studies purely analyzing system implementation without discussing professional issues were excluded from consideration. General AI in Libraries articles and those focusing only on public, K–12, or special libraries was also excluded.

Study Selection and Synthesis

Thirty source documents met eligibility criteria after title and abstract-then full-text screen: nine systematic review articles (including a review of 48 papers, another review of 1669 bibliometric records), eight primary survey or mixed-methods study of librarians, five institutional case studies, reskilling program evaluations, three professional association- or vendor-authored survey research, and five theoretical/critical analyses. As for the field of AI-in-libraries research as a whole, outcome data in included studies are varied-spanning percent based reported outcomes in survey papers to narrative taxonomies of skills in competence standards–preventing a meta-analytic synthesis of any effect size. Thus, systematic searching was supplemented with narrative synthesis and vote-counting based directional findings, following precedents set by previously published systematic studies of LIS practitioners' AI skills (Oladokun & Umar, 2025).

Because nine of the 30 included sources are themselves systematic or bibliometric reviews-including a review of 48 papers (Oladokun & Umar, 2025) and a bibliometric review of 1,669 records (Ayinde et al., 2026)-narrative synthesis and vote-counting were used cautiously to avoid treating overlapping primary studies as independent data points; nonetheless, a formal deduplication check against the reference lists of these secondary reviews was not performed, and residual double-counting cannot be ruled out. No formal risk-of-bias or quality-appraisal tool (e.g., the Mixed Methods Appraisal Tool or the JBI critical appraisal checklists) was applied to the 30 included studies; this omission is acknowledged as a limitation of the review.

Results

Theme 1: Role Reinvention: From Knowledge Keeper to Intelligent Collaborator

Perhaps the most coherent conceptual argument found across this body of work is one that positions librarian roles as reinvented rather than rendered obsolete. One conceptual study framed this reinvention as a "disruptive change where traditional core tasks such as traditional cataloging and circulation is being taken over by intelligent systems, with value being generated in new roles that emphasize collaborative cross-disciplinary work and bridging users with data and emerging technologies" (Zhang & Liu, 2025). In addition to task re-allocation, the article went on to note institution-level changes in how roles were conceptualized and adapted, with librarian-led AI academic salons and cross-functional AI working groups mentioned as institutional adaptation strategies, and not just at the individual, task-level (Zhang & Liu, 2025). Similar observations were noted in a synthesis of the literature on academic and research librarians in the age of AI, which detailed five avenues of role evolution for librarians: AI and algorithmic literacy instruction; ethical stewardship and algorithmic accountability; data curation and stewardship; interdisciplinary research collaboration; and advocacy for responsible AI usage (de Leon, 2026).

This study ultimately suggested that roles have become even more central, precisely due to the increasing spread of AI across academia, because institutions now have a greater need for critical review, bias-detection, and accountability examination-the very skills possessed by traditional librarians (de Leon, 2026). Supporting these arguments were findings from a bibliometric study covering 6,500 source articles and retaining 1,669 relevant publications, which demonstrated that The Journal of Academic Librarianship was the most prolific individual venue for this literature, further indicating the salience of these role-centered discussions within the discipline's flagship publications (Ayinde et al., 2026).

Theme 2: Competency and Skills Gaps

The systematic review of 48 studies looking at the AI skills and competencies of librarians in the context of the Fifth Industrial Revolution determined that librarians generally had a conceptual understanding of AI's service implications (cataloging, discovery, user services etc.) but retained strength in traditional competencies (information literacy, metadata analysis, ethical understanding etc.) (Oladokun & Umar, 2025). At the same time this review determined that technical fluency in AI systems, programming, and data science was a continued deficit in librarians and recurrent structural issues in LIS education included outdated curricula, continuing professional development gaps and lack of technical infrastructure.

This dichotomy of conceptual-familiarity but limited technical command was a continued trend even when focusing on curriculum-centered examinations where MLIS programs are struggling to keep pace in developing and integrate AI content without disrupting existing accreditation standards and the intellectual focus of the field, as faculty must learn new content, develop new learning frameworks and account for the fear of job displacement students have (AI in MLIS Programs, 2026). Similarly, in large industry-wide analysis, only 12% of respondent librarians reported having formal training or on-boarding regarding AI, despite 56% of institutions expecting upskilling and reskilling among librarian roles due to AI (Clarivate, 2025).

Theme 3: Automation Anxiety and Job-Displacement Concerns

Fears of de-jobbing or diminishment of skills and professional status emerge frequently, though, in some studies not as the main takeaway point from any individual paper. An assessment of the two-

edged aspect of AI integration into libraries pointed to the rapid adoption in recent years (at least 27 percent of all academic libraries, almost halfway toward more than half that were preparing to adopt in year ahead), yet cautioned against worries "that AI adoption could devalue librarians' perceived expertise where it would rely on human judgment, empathy and culturally responsive approaches," such as reference interviews and "serving various communities" (Liblime, 2025). The systematic review of librarians' AI competencies also revealed, "When training programs include information about change and role adjustment, especially those addressing the impact of these changes," as well as "management with responsive leadership," librarian "automation anxiety does decrease," thus overcoming some the "chicken-or-egg challenge of the anxiety to be reskilled but having the Anxiety imped[ing] the drive to be trained/reskilled" (Oladokun & Umar, 2025).

However, it's important to also acknowledge that this evidence points to "no evidence of uniform responses, and that anxieties do dissipate." For instance, at the very same "level, institution's communication that addresses change with the appropriate information about their role and its adjustments," including a "'supportive' leader with 'inclusive leadership in all practices' [could result in] improved librarian confidence" in the abilities the system may automate. Furthermore, results from a "recent large survey of the library industry shows that librarians who are less senior in their role expressed less confidence on the topic of an AI lexicon [than their most senior counterparts]," thus making this anxiety not an entirely persistent variable (Clarivate, 2025).

Theme 4: Organizational Reskilling Responses

Several included sources illustrated concrete institutional actions responding to the skills deficits and concerns discussed previously. The University of New Mexico College of University Libraries and Learning Sciences' case study of its GPT-4 Exploration Program framed according to Malcolm Knowles' theory of adult learning revealed that a hands-on, collaborative approach to reskilling led to self-reported increases in AI literacy and confidence among the librarian participants, who completed projects that contributed to scholarly publishing assistance, information studies pedagogy, and the cataloging workflow(Lo, 2024). The case study itself is important because it points to an example of reskilling programs organized as part of already existing professional development programs rather than through the complete renovation of curricula.

At the sectoral level, data from surveys suggests that institutional importance of reskilling is rising, yet institutional implementation is variable, where more than half of the responding librarians said they received no institutional support for learning AI, and more than half of the responding institutions listed skills development as one of the top anticipated impacts of AI adoption (Clarivate, 2025). Professional bodies at the national level working on draft competency frameworks also make the argument that AI competency should be constructed on top of core principles of librarianship, not on the replacement of them, suggesting an intent to frame reskilling as ongoing development instead of a disruption to the profession (AI Competencies for Academic Library Workers, 2025).

Theme 5: Ethical Stewardship as an Emerging Jurisdiction

A common, and perhaps newest, finding among the literature reviewed is not only their continued adherence to jurisdictional control over interpretation and pedagogical services, but a new claim on jurisdiction over issues like AI ethics and algorithmic accountability. Thematic synthesis of academic and research librarian roles demonstrates that librarians are increasingly situated as ethical stewards responsible for the ethical implementation of AI, leveraging their existing expertise in the areas of information ethics, intellectual freedom, and privacy protection (de Leon, 2026). This finding is well-

aligned with Abbott's (1988) argument that librarians, rather than passive subjects of automation, will have an ability to expand their jurisdiction into new problem areas-such as AI governance-which leverage existing professional knowledge bases.

Evidence of this claim to a new jurisdiction can be seen through proposals for competency frameworks on generative AI literacy, which include bias detection and accountability evaluation as foundational skills for information professionals (de Leon, 2026), and reports that, by utilizing expert knowledge in information ethics and data privacy, librarians are contributing to institutional AI policy creation (Lo, 2024). However, several reports indicated that this ethical stewardship function is severely under-resourced and is often informal, with librarians taking on responsibility for algorithmic accountability without adequate authority or formal structure (Oladokun & Umar, 2025).

Vote-Counting Summary

Summary of the 30 included sources the net result for librarians' work in 21 sources was expansion or reconfiguration of jurisdictional boundaries (routine work task displacement is compensated for by interpretive, ethical and pedagogical tasks expanding), 7 identified a mixed account with both opportunity and risk but generally balanced risk and opportunity and 2 primarily discussed the displacement threat with a weaker accounting for gains on jurisdiction. No study predicted the collapse of the library as a professional field as a result of AI. The modal response was task-substitution combined with jurisdiction-expansion as had been anticipated by Abbott's abstract account.

Discussion

The synthesized evidence leads to the core interpretive assertion here: AI is not eradicating the institutional jurisdiction of academic librarianship, rather, it is re-conceptualizing it. In line with the argument of Abbott (1988) on professions, the data indicates that while routine, rule-governed work-basic cataloging, directional reference, initial literature searches-is being migrated toward automation or human-AI cooperation, higher-level judgment, ethical and pedagogical tasks are both being maintained and actively cultivated. That AI ethics stewardship emerges as a claimed jurisdiction is an especially interesting finding; it indicates the profession is actively identifying new jurisdictional issues and "filling" them based on existing abstract knowledge domain (information ethics, privacy, critical thinking). This is not a reaction to automation, rather, a pre-emptive definition of it.

Looking at the competency-gap and reskilling literature in parallel, we conclude that institutionalized training has, at least so far, failed to keep up with changing roles. While basic awareness of AI and its capabilities is widespread amongst the profession, technical proficiency is limited and organizational support is insufficient. This gap appears to be the primary cause of the much-discussed fear surrounding automation rather than fear being an inherent response to AI itself. This, in turn, leads directly to a practical conclusion: that the investment in structured, hands-on reskilling and training at the institutional level, using established adult-learning principles–akin to the GPT-4 Exploration Program case study-is the most direct, actionable lever for alleviating fear and fostering confidence.

The identified perception gap between senior and junior library staff illustrates that this change in role is not happening identically for everyone, and that early-career professionals-perhaps with less accumulated institutional jurisdictional claims to draw upon-may be experiencing these shifts very differently than their senior colleagues. This variability has not been adequately studied.

Limitations

First, like previously identified similar systematic reviews on this subject, diversity in the kinds of outcomes measure prevented a pooled quantitative meta-analysis-and while in this qualitative systematic review we adopted the methodology and analysis framework of systematic reviews (using vote-counting and themes for an overall picture), statistical inference that has high precision is not possible in ways that can be derived from a statistical meta-analysis of an effect size. Second, restricted to English language searches means that (even while many cited sources come from a Chinese, Pakistani and Nigerian academic system) research on changing role of librarians published elsewhere, in non-Anglophone settings, with professional contexts from, for instance, those from East Asia may likely be under represented.

Third many included authors used self collected survey or other survey-interview-related data, reflecting views about one's changing role, that is a self perspective to others, open to desirability social (that is, a person would tend to project that one's current role is the actual desired one, reflecting institutional changes that one perceives others would want). And a fourth of these sources were practitioner reports, conference articles or non-print literature which like, even though reflect the existing research in practice not reflected in other peer – Reviewed literature do not have same peer-reviewed standards as do journal published articles. Fifth- given the dynamic nature of Gen.AI technologies, the review may have short half–life value concerning any changes which have occurred in using new technologies and any related programs and systems (for example, a new version of GPT, and so on) become available. Sixth, no formal risk-of-bias or quality-appraisal tool was applied to the included studies, and the inclusion of secondary reviews alongside primary studies was not formally checked for overlap; both choices limit the confidence that can be placed in the vote-counting summary and are addressed in the Study Selection and Synthesis section above.

Implications for Practice and Future Research

The results of this review suggest three actionable recommendations in three practice priorities. First, graduate programs and ongoing professional development, in line with a range of learning theories applicable to adults' learning, should focus reskilling on hands-on project-based AI and coding training, not on mere awareness and conceptual understanding: consistent findings suggest librarians already understand a technology conceptually better than they practice and apply it. Second, institutions ought to institutionalize the informal ethical stewardship LIS librarians are performing and assign it formal mandate, authority, and staffing–not merely allow LIS professionals' roles to expand while remaining unpaid labor by institutional staff.

And, given that current evidence suggests junior staff differ from senior staff in technological confidence regarding AI, reskilling efforts need to account for career stage in their implementation plans instead of taking a single-track approach for all employees (Grove, 2020). Finally, on-going academic investigation of this phenomenon would greatly enrich the knowledge base. Future research should conduct longitudinal, individual-level work that monitors how individual librarians' tasks, roles, and responsibilities shift over a number of years, in order to accurately determine genuine jurisdiction expansion versus short-term perception shift.

Comparison, cross career, institution and geography-based research will help mitigate the demographic bias currently seen in LIS studies. Finally, Abbott's jurisdiction concept needs to be directly assessed and tested against objective data on where tasks are located and where responsibilities rest, rather than relying solely on the perception-driven research that currently predominates in the academic discussion.

Conclusion

This systematic review of 30 texts on human-AI collaboration in academic libraries suggests consistent evidence that AI is restructuring, rather than eliminating, librarians' professional identities. Daily tasks that are ruled-based, or routinized, increasingly move toward either automation or human-AI collaboration, while librarians hold and actively claim jurisdiction over the work that is interpretive, instructional, and ethical-above all, as AI ethics custodians. This trend maps onto Abbott's theory of the professions, predicting that a profession's persistence has to do with the work of abstraction, not particularity.

Simultaneously, the literature shows that librarians' theoretical conceptualizations of AI consistently outstrip their technical competencies, a divide that structured-learning, technical-focused training appears likely to overcome. As academic libraries further incorporate AI into research workflows, sustained institutional investment in training, the institutionalization of professional ethics-stewardship mandates and a clear path of continuous professional development appropriate to various points in a career are key to whether and how librarian claim over AI governance and literacy become enduring claims to the profession.

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