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Review Article

Generative Artificial Intelligence and the Future of Academic Library Research Services: Competition, Collaboration or Convergence

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Abstract: The emergence of generative artificial intelligence (GenAI) is introducing a fundamental shift in the relationship between researchers, scholarly information and academic library research services. Academic libraries have traditionally served as information providers and professional intermediaries, guiding researchers in the discovery, retrieval, evaluation and use of scholarly information. However, the increasing capacity of GenAI tools to perform literature search, synthesis, research ideation, data-analysis assistance, academic writing and reference-style interaction is creating a new form of research assistance that challenges established patterns of library-mediated information access. This article examines the emerging relationship between GenAI and academic library research services from three perspectives: competition, collaboration and convergence. The article argues that GenAI competes with the routine functions of research services by reducing the need for human mediation in some information activities and by offering researchers immediate, conversational and accessible assistance. At the same time, GenAI presents an opportunity for collaboration by augmenting librarians' capabilities in reference services, literature searching, research support and information-literacy instruction. Beyond competition and collaboration, the article conceptualizes convergence as an emerging research-support environment in which the researcher, librarian, GenAI and scholarly information operate as interconnected components. The article contends that the increasing use of GenAI does not necessarily signify the disappearance of academic library research services but rather their transformation. It, therefore, advocates the repositioning of librarians as AI-informed research advisers, the development of AI literacy among librarians and researchers, strategic integration of GenAI into library services with human verification, and institutional policies for responsible AI-supported research. The future relevance of academic libraries will, consequently, depend on their ability to shape, rather than resist, the emerging AI-mediated research environment.

Keywords: Generative Artificial Intelligence, Academic Libraries, Research Support Services, AI Literacy, Librarianship, Scholarly Information.

INTRODUCTION

The academic library is an integral part of the academic business of every higher institution, serving as information provider, counsellor, and mediator to faculty, students, researchers, and university communities. Human society has placed a premium on access to needed information as a means of survival, and thus, information handling and its associated tools are expanding at an exponential rate. It is on this premise that Griffiths and Brophy (2005) viewed the library as the emergent point of technologies to society, because libraries, as information powerhouses, are continuously making efforts to stay abreast of behavioural (users) and situational (technology and environment) changes in society. Hence, Ranganathan (1931) envisioned the library as a growing organism. The emergence of technology and its subsequent adoption into library services brought tremendous changes in the role and service patterns of academic libraries. Thus, communication becomes participatory, access becomes simultaneous, searching becomes precise, availability

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and retrieval become remote, and operation becomes effective. However, the continuous development of technology has become a catalyst for a complete review of library services and operations.

The emergence of technology spawned from the invention of the computer. From Tim Berners-Lee's World Wide Web (WWW) to Web 4.0 is an anticipated evolution of the web in which AI and other technologies may be integrated. These technologies have been willingly and unwillingly adopted into the mainstream of academic library services (Rahman *et al*., 2025; Aslam, 2021). The recent development in artificial intelligence is generative artificial intelligence, which, according to Feuerriegel *et al*., (2024), refers to computational techniques capable of generating seemingly new, meaningful content such as text, images, or audio, from training data. These tools are capable of responding intelligently to user prompts, with prominent examples including ChatGPT, Google Gemini, Claude, and Microsoft Copilot. Their relevance to researchers and librarians in the academic environment is considerable, as they can accelerate literature search and synthesis, support data analysis, assist cataloguing and metadata generation, and provide round-the-clock reference-style engagement.

It is against this backdrop that librarians face an existential problem if they fail to answer the pertinent questions now on the front burner. In essence, traditional research support through the reference service section of the library assists users by directing them to resources, a situation Umeozor (2020) described as the paradigm of the haystack and the needle in information access and retrieval, where the librarian points the user to physical resources in the reference or research (haystack) and the user is expected to find the useful information (needle); hence, the user must be information literate. It is pertinent to note that one of the oldest advantageous features of technology is abstraction (the automated execution of multiple functions that lead to a result) and users do not get such abstracted functions in traditional reference and research services. This is what generative AI offers, and more. Although, GenAI does not replace the professional judgment of the professional librarian in information use, the abstraction it provides is capable of creating the illusion of self-sufficiency in information users, which in itself contradicts the professional role of librarians (Umeozor, 2020). Consequently, in the academic library research services, generative AI is offering a frenemy relationship – threat or opportunity. It is in this regard that this paper ex-rays the emergence of generative AI as a competition, collaboration, or convergence for academic library research services.

LITERATURE REVIEW

Generative artificial intelligence (GenAI) refers to computational techniques capable of generating seemingly new and meaningful content, including text, images and audio, from training data (Feuerriegel *et al*., 2024). Unlike earlier forms of artificial intelligence that were largely designed to classify, predict, retrieve or automate predefined tasks, GenAI can interact with users through natural language and produce context-responsive outputs. This conversational capability has expanded its relevance from general provision information to active participation in research activities. GenAI systems can interpret questions, organize information, generate explanations, identify patterns and produce content in response to prompts, thereby making them increasingly capable of functioning as research assistants rather than merely information tools. This development is particularly significant in academic research, where researchers continually engage in activities that require the identification, interpretation, organization and communication of large volumes of information. The emergence of such systems has, consequently, introduced a new layer of artificial mediation between researchers and scholarly information, with academic libraries now operating within an information environment in which researchers can obtain assistance through direct conversation with an AI system.

The distinction between conventional information retrieval tools and conversational GenAI is particularly important to understanding this development. Conventional retrieval systems, including library catalogues, bibliographic databases and search engines, are principally designed to locate and provide access to information contained within indexed collections. The researcher formulates a query, receives a set of records or documents, and undertakes the subsequent processes of selection, reading, comparison and synthesis. GenAI, by contrast, can interact with the researcher iteratively, interpret natural-language questions, reformulate requests and generate a synthesized response. Recent developments in AI-supported research discovery demonstrate that generative systems can assist researchers in locating relevant literature and extracting key information from research articles, while newer retrieval-augmented systems are being developed specifically to improve the connection between generative responses and academic literature (Glickman & Zhang, 2024; Aytar *et al*., 2024). The difference, therefore, is not simply that GenAI provides information faster; it increasingly abstracts several intermediate research activities into a conversational interaction. The researcher may move from asking a question to receiving an explanation, comparison or synthesis without necessarily engaging directly with every stage of the information-search process. This characteristic is central to its emergence as a new research assistant.

Several GenAI tools have become relevant to academic research, including ChatGPT, Google Gemini, Claude and Microsoft Copilot, alongside research-oriented systems that combine generative models with scholarly information retrieval. Their functions vary

according to their underlying models, access to external information, integration with documents and databases, and specialized research capabilities. The significance of these tools, however, lies less in the particular brand of AI system than in the expanding range of research tasks that can be delegated to or supported by conversational AI. Research discovery and literature synthesis are among the most immediate applications. GenAI can help researchers formulate search concepts, identify potentially relevant studies, summarize lengthy documents and draw connections between related topics. Research-oriented AI systems have, consequently, been developed to improve literature navigation and reduce the burden associated with information overload (Glickman & Zhang, 2024). Nevertheless, the efficiency offered by such systems should not be confused with bibliographic reliability, since research has continued to identify problems involving hallucinated information, inaccurate references and inconsistent performance in literature synthesis.

GenAI can participate in the generation and refinement of research ideas. Researchers can use conversational systems to brainstorm possible topics, identify relationships among concepts, develop preliminary research questions and explore alternative ways of approaching a research problem. A prompt-based research assistant developed by Shamsabadi and D'Souza (2024), for example, incorporated generative AI into tasks such as research-topic ideation and the formulation of enhanced literature-search queries. This suggests a movement from AI merely responding to an established information need toward AI participating in the formation of the research need itself. GenAI can also assist with data-analysis activities by generating or explaining statistical and programming code and supporting preliminary interpretation of analytical procedures. Its use in qualitative analysis has similarly been explored, including its application to initial coding and thematic analysis, although such applications require researcher validation and methodological oversight (Turobov *et al.*, 2024). In this sense, the emerging research assistant does not simply help the researcher find information; it can accompany the researcher across several stages of the research process.

The assistance extends further into academic writing, citation and language support. GenAI can help researchers structure ideas, improve clarity, edit drafts, summarize arguments and generate preliminary textual formulations. A systematic review of AI use in academic writing identified applications spanning idea generation, content structuring, literature synthesis, data management and editing, while also emphasizing continuing concerns about academic integrity and the appropriate balance between human and AI contributions. GenAI can assist researchers working across languages through translation and language refinement, although comparisons between generative AI and human translation of scientific texts show that convenience does not eliminate questions concerning accuracy and quality (Fu & Liu, 2024). Citation assistance also requires particular caution because a system may produce apparently plausible references that require verification against authoritative scholarly sources. Thus, the capacity of emerging research assistant to move from discovering and idea to move from discovery and idea generation to synthesis, analysis, writing and language support is precisely what distinguishes GenAI from conventional information retrieval tools and makes its relationship with academic library research services a matter requiring serious reconsideration.

GenAI: The New Research Assistant in Changing Research Information Environment

GenAI is increasingly assuming the character of a research assistant rather than merely a search tool. This is because a conventional search system generally responds to a query by retrieving and ranking records from an indexed information environment, leaving the researcher to examine, select, interpret and synthesize the retrieved materials. Conversational GenAI changes this interaction by allowing the researcher to engage with information through iterative natural-language dialogue, in which questions can be refined, explanations requested, ideas developed and responses further interrogated. Tibau *et al*., (2024) averred that users are adapting from established search behaviours to dialogue-based interaction, thereby creating a form of information seeking that differs from conventional keyword searching. This development is significant for academic research because the researcher can increasingly approach GenAI not simply with the expectation of finding (searching for the needle in the haystack) information but with the expectation of receiving assistance in working with information (collecting the needle, no haystack). The distinction is subtle but consequential. The search tool primarily facilitates access to information, whereas the research assistant participates in the processes of interpretation, organization, synthesis and communication that follow access.

This shift also alters the traditional pattern of librarian-mediated information access. Academic libraries have historically occupied an important intermediary position between researchers and scholarly information by providing access to information resources, developing search strategies, guiding users towards appropriate sources and helping them evaluate and use information. Conversational GenAI introduces an alternative route in which the researcher can approach an AI system directly, formulate questions in ordinary language and receive an immediate response without first navigating a catalogue, database or reference service. The implication is not that the librarian has disappeared from the research process, but that the first point of information interaction is increasingly capable of moving from the library to the conversational

interface. This is particularly relevant because GenAI can maintain an iterative interaction in which a researcher can request clarification, ask for alternative explanations, narrow a topic or ask the system to reformulate its response. In effect, the technology reduces some of the visible stages of information mediation that previously characterized research support. Aguiñaga *et al*., (2025) explained that in reference contexts, these systems (GenAI) can understand and respond to reference questions, although the accuracy of responses and quality of references remain problematic.

The resulting environment gives researchers greater autonomy in initiating and progressing research activities. A researcher can engage an AI system in developing an initial research idea, clarifying concepts, generating keywords, identifying possible relationships among variables, summarizing literature or explaining unfamiliar methodological concepts without waiting for a scheduled consultation with a librarian or another research adviser (Aboelmaged *et al*., 2025). This autonomy, however, should not be interpreted as complete independence from professional information support. Rather, it represents a redistribution of research assistance in which some routine and preliminary activities can be undertaken directly through AI. The researcher, consequently, gains convenience and control over the pace of interaction, while the library faces a changing pattern of user behaviour in which information seekers may arrive at the library after engaging extensively with an AI system or may bypass certain library services altogether.

The attraction of GenAI within this environment is further strengthened by speed and convenience. Unlike conventional research processes that may require movement across catalogues, databases, search interfaces, individual articles and reference materials, a conversational system can provide an immediate response and continue the interaction within the same interface. This does not necessarily mean that GenAI produces better research outcomes, but it changes the user's perception of what constitutes an efficient research process. As Ranganthan’s law directed that the time of the user is important – save the time of the user, the researcher increasingly expects information assistance to be immediate, conversational and responsive to context. This expectation is important for academic libraries because technological change has basically altered not only the tools through which information is accessed but also users' expectations of information services. The emerging challenge, therefore, is not simply whether libraries can provide AI tools but whether their research services can remain relevant in an environment where researchers increasingly value immediacy, conversational interaction and personalized assistance.

The growing autonomy and convenience associated with GenAI, however, are accompanied by significant epistemic and ethical limitations. Generative systems can produce plausible but inaccurate statements, fabricate references and attribute claims to sources that do not support them. A recent systematic examination of GenAI-assisted literature synthesis found persistent hallucination problems, demonstrating that fluent responses should not automatically be equated with reliable scholarly synthesis (Adel & Alani, 2025). The problem is particularly serious in academic research because a fabricated citation can give an appearance of scholarly authority to information that has not been verified. Huang *et al.*, (2025) identified hallucination as a continuing problem involving the generation of content that is factually unsupported or inconsistent with available evidence. Questions of bias, opacity, copyright and provenance further complicate the use of GenAI in research. Researchers may not always know precisely how an answer was generated, what information contributed to it, whether the underlying sources are authoritative, or how particular claims can be traced back to their original scholarly provenance. Consequently, the convenience of AI-mediated research creates a paradox - the information explosion occasioned by emerging technologies has birthed the prosumer, a hybrid producer-consumer of information, making it a sine qua non that every piece of information be interrogated and verified before use.

This paradox strengthens the argument for AI literacy alongside information literacy. Information literacy traditionally equips researchers with the ability to recognize an information need, locate relevant information, evaluate its credibility and use it responsibly. Thus, the emergence of GenAI does not make information literacy less important; rather, it extends the object of information literacy from information itself to the systems through which information is increasingly generated, mediated and presented. The foregoing suggests that GenAI is neither simply another library technology nor an outright replacement for the academic library. Its capacity to perform functions associated with research support creates three possible relationships: competition, collaboration and convergence.

Generative AI as Competitor to Academic Library Research Services

The emergence of generative artificial intelligence (Gen AI) presents a direct challenge to some of the functions through which academic libraries have traditionally supported research. Academic libraries have historically provided mediation between researchers and scholarly information by assisting users to identify appropriate resources, formulate searches, retrieve relevant materials and navigate the information environment. GenAI can now perform portions of these activities through a single conversational interface, allowing researchers to formulate questions in natural

language and receive immediate explanations, summaries, recommendations or other forms of research assistance. A study comparing GenAI tools with traditional reference interactions found that the systems were capable of understanding reference questions and providing relevant answers, although weaknesses remained in the accuracy of answers and the quality of references supplied (Wheatley & Hervieux, 2024). This capability creates competition at the functional level because some routine enquiries that would previously have required interaction with a librarian can now be directed to an AI system. The competition is, therefore, not necessarily between the librarian and the machine as professional entities, but between AI-mediated assistance and established library research-support functions.

The competitive pressure becomes more evident in information discovery and retrieval. A researcher who previously approached a library catalogue, bibliographic database or reference librarian may increasingly begin with a conversational AI system capable of interpreting a research problem, suggesting search terms, identifying possible sources and providing an initial synthesis. The difference lies particularly in the degree of mediation involved. Conventional library research services generally require the researcher to move through a sequence of activities of formulating a search, examining results, selecting sources, reading documents and synthesizing information, whereas GenAI can compress several of these activities into an immediate conversational response. The researcher is, consequently, able to bypass some of the routine assistance traditionally provided by librarians. This development is reinforced by the growing tendency for students and faculty to begin research with AI-generated explanations rather than conventional searches, a shift recently described as an emerging “answer first” research environment in which AI responses may appear before users encounter lists of scholarly sources (Hu, 2026). If this behaviour becomes established, the library may no longer be the automatic first point of contact for information need.

Speed, accessibility and conversational interaction further strengthen this competitive position. GenAI is available continuously, does not require an appointment and allows users to refine questions through successive prompts without leaving the same interaction. Such characteristics can make AI particularly attractive for routine research assistance, especially where users require preliminary explanations, definitions, summaries or assistance in organizing ideas. The appeal is, therefore, not necessarily that GenAI provides superior scholarly information than the library, but that it provides immediate and low-friction assistance. This has implications for the visibility and utilization of conventional research services. When researchers perceive that they can obtain an adequate preliminary response independently, the incentive to consult a librarian for routine enquiries may decline. Evidence from academic library research already indicates that AI is changing user expectations and information behaviour, while librarians are increasingly having to respond to questions concerning the reliability, ethical use and academic implications of GenAI (James & Filgo, 2023). The competitive threat, therefore, lies partly in the possibility that the researcher begins to regard the AI interface as the principal gateway to research assistance, relegating the library to a secondary position.

This development can produce what may be described as an illusion of research self-sufficiency. The ease with which GenAI can generate an apparently coherent response may give researchers the impression that the major difficulties of research - finding information, understanding complex material, connecting ideas and producing written responses - can be managed independently. Such perceived self-sufficiency is particularly consequential for academic libraries because research support is not limited to supplying information; it also involves helping researchers determine whether information is relevant, authoritative, accurate and appropriate for a particular scholarly purpose. When the intermediate processes of searching, selection and evaluation are abstracted behind an AI interface, users may become less conscious of the skills involved in responsible information use. Consequently, the danger is not simply that researchers do not often consult research assitance, but that they may underestimate the value of professional mediation itself. In this respect, GenAI could weaken demand for some conventional research services even while increasing the complexity of the information-literacy challenges confronting researchers.

Nevertheless, the ability of GenAI to compete with library functions should not be interpreted as evidence that it can replace professional librarians. The principal limitation is that fluency does not guarantee reliability. GenAI systems can produce convincing but non-existent information, inaccurate citations and fabricated references. Mugaanyi *et al*., (2024), found substantial variation in the accuracy of citations and references generated by ChatGPT across academic disciplines, while other research has demonstrated persistent hallucination and reference-accuracy problems in AI-assisted literature and systematic-review tasks (Chelli *et al.,* 2024; Walters & Wilder, 2023; Zhao *et al*., 2026). These limitations are particularly problematic in academic research because the apparent completeness of an AI response may conceal uncertainty about the provenance and authority of its claims. Bias, opacity concerning how outputs are generated, copyright questions and difficulties in tracing claims to authoritative original sources further complicate the use of GenAI as an independent research authority. Thus, although GenAI can reduce the amount of human mediation required for routine information tasks, it does not remove the need for professional judgement in

evaluating information and determining its suitability for scholarly use.

The emerging competition should, therefore, be understood in terms of functions rather than professional value. GenAI can compete strongly with the routine, repetitive and transactional aspects of academic library research services because it can provide immediate conversational assistance, summarization and preliminary information support. It is much less capable of replacing the contextual, evaluative and ethical judgement that professional librarians bring to complex research situations. Consequently, the challenge for academic libraries is not simply to prevent researchers from using GenAI, but to recognize that the location and nature of research assistance are changing. GenAI has the potential to draw researchers away from some traditional library services because it offers an alternative route of assistance. At the same time, its limitations create a continuing need for professionals capable of evaluating, contextualizing and ethically mediating information. Therefore, GenAI competes with the functions of academic library research services without necessarily displacing the professional value of the academic librarian. This distinction provides the basis for considering a second possibility: rather than treating GenAI solely as a competitor, academic libraries may position it as a collaborator in the delivery and transformation of research support.

Generative AI as a Collaborator with Academic Library Research Services

The competitive relationship between generative artificial intelligence and academic library research services does not necessarily imply displacement. Rather, the same capabilities that allow GenAI to compete with some traditional library functions can be redirected towards augmentation of professional research support. The academic library can, therefore, move from viewing GenAI principally as an alternative to the librarian to treating it as an additional instrument through which research services can be delivered. This possibility is particularly relevant to reference and research consultation, where GenAI can provide preliminary responses to routine enquiries while complex or context-dependent questions remain subject to professional intervention. Aguiñaga *et al*., (2025) suggests that GenAI is capable of changing how reference interactions are initiated and delivered, while also creating opportunities for librarians to redefine their roles around higher-level research assistance, evaluation and guidance. The resulting model is not one in which the researcher chooses between the AI and the librarian, but one in which the AI can handle the initial layer of interaction and the librarian provides the professional judgement required when the research problem exceeds routine information assistance.

GenAI can similarly support literature search and synthesis, areas that are central to academic library research services. AI-supported research systems can assist researchers in formulating search terms, identifying potentially relevant studies, screening information and extracting or synthesizing material from large bodies of literature. Research on AI-supported literature reviews has demonstrated the growing potential for AI to partially automate activities such as literature searching, screening and information extraction, thereby reducing the time associated with some stages of the review process (Bolaños *et al*., 2024). The role of the librarian in such an environment need not be diminished; rather, the librarian can become more directly involved in designing appropriate search strategies, identifying authoritative databases and sources, checking the comprehensiveness of AI-assisted searches and helping researchers distinguish between preliminary AI-generated suggestions and verified scholarly evidence. The important distinction is therefore between automation of research tasks and delegation of research judgement. GenAI may undertake portions of the former, but the latter remains a professional responsibility that requires knowledge of information sources, scholarly communication and the context of the research problem.

The collaborative potential also extends to the librarian's own work. GenAI can assist librarians with routine research-support activities such as generating preliminary research guides, producing draft responses to frequently asked questions, summarizing lengthy materials, developing instructional examples and assisting with the organization or description of information resources. Such uses can reduce the time spent on repetitive activities and allow librarians to devote greater attention to complex consultations and intellectually demanding services. This is consistent with emerging evidence from academic libraries in which AI-driven tools have been associated with increased service efficiency and changes in staff responsibilities rather than simple elimination of professional roles. The implication is that the librarian's value can increasingly be concentrated on tasks requiring contextual understanding, critical evaluation, ethical judgement and direct engagement with researchers, while GenAI assists with the more routine components of service delivery.

Perhaps the most significant area of collaboration is information-literacy instruction. If researchers are increasingly using GenAI to discover, interpret and generate information, then academic libraries must extend information-literacy education to include the critical use of AI-generated information. The librarian can teach researchers how to formulate useful prompts, recognize the limitations of generative systems, interrogate AI-generated responses, verify claims against authoritative sources, identify fabricated citations and consider issues of bias, privacy, copyright and academic integrity. Lo (2025) argues that AI literacy in academic libraries should encompass technical knowledge, ethical awareness, critical thinking and practical competence,

positioning libraries to help users understand and evaluate AI rather than merely encouraging its use. Similarly, Ali and Richardson's (2025) scoping review found that academic libraries are increasingly using workshops, information sessions, online tutorials and library guides to develop AI literacy among users, while also emphasizing the need for library professionals themselves to develop greater AI competence. This represents an important extension of the traditional information-literacy role: the librarian is no longer concerned only with helping users evaluate information retrieved from conventional sources, but also with helping them evaluate information generated through artificial systems.

The collaborative model places the librarian in a more critical position rather than a less important one. As GenAI becomes more capable of generating immediate answers, the professional librarian can assume greater responsibility for helping researchers determine whether those answers are trustworthy, adequately supported and appropriate for scholarly use. Academic librarians' established expertise in source evaluation and critical information use provides a natural foundation for this role, while emerging AI-literacy frameworks specifically identify academic librarians as important actors in developing critical and ethical AI engagement among students and researchers (Ali & Richardson, 2025; Lo, 2025). The future research consultation may, therefore, involve not simply showing a researcher *where* to find information, but helping the researcher understand how AI found, interpreted, generated and represented that information.

GenAI can, consequently, be incorporated into academic library research services without surrendering the professional principles on which those services are founded. The technology can provide speed, scale and routine assistance, while the librarian provides verification, contextual interpretation, ethical guidance and scholarly judgement. In this relationship, AI does not have to compete with the librarian for ownership of the research process; it can become an instrument through which the librarian extends the reach and responsiveness of professional services. Therefore, the central issue is not whether GenAI should replace the librarian, but whether the librarian can appropriately position GenAI as an assistant whose computational capabilities are placed under professional human judgement. Such a relationship transforms GenAI from a threat to a research-service partner and provides the foundation for the more profound possibility of convergence between GenAI and academic library research services.

Generative AI Convergence with Academic Library Research Services

The relationship between generative artificial intelligence (Gen AI) and academic library research services may ultimately extend from competition or collaboration to convergence, in which the researcher, librarian, GenAI and scholarly information operate as interconnected components of a single research-support environment. Competition assumes that AI and the library are alternative providers of assistance, while collaboration suggests that they remain distinct but work together. Convergence goes further by suggesting that the boundaries between these functions may increasingly become less distinct. This possibility is already becoming visible as researchers begin their enquiries through AI systems while academic libraries simultaneously explore ways of incorporating AI into discovery, instruction and research support. Kim (2025), argued that generative AI is reshaping academic libraries from passive information providers towards more proactive knowledge facilitators, indicating that the technology can become embedded within rather than remain external to library services. The emerging model can therefore be represented as Researcher + Librarian + GenAI + Scholarly Information, where each component contributes a different form of capability to the research processes.

One important expression of this convergence is the development of AI-integrated library discovery and research services. Rather than requiring researchers to move separately between a library catalogue, bibliographic databases, institutional repositories and general-purpose AI platforms, future library environments may increasingly incorporate conversational and generative capabilities directly into discovery systems. The significance of this development is that information resources of the library can remain the foundation of AI-assisted interaction while GenAI provides the conversational interface through which researchers engage with them. This addresses one of the principal weaknesses of relying exclusively on general-purpose GenAI: the system may produce a fluent response without providing a sufficiently reliable pathway to the scholarly sources underlying that response. An AI-enabled library environment, by contrast, can potentially connect the convenience of conversational interaction with the authority and provenance of library-curated scholarly resources. Emerging evidence that GenAI is already becoming a pathway through which users reach academic library resources further suggests that this is not merely a theoretical possibility; AI systems are increasingly capable of directing users towards repositories and other library-held resources. Thus, the future library discovery environment may not simply ask researchers to *search the library*, but may enable researchers to converse with the scholarly information environment of the library.

This development positions GenAI as part of the research-support infrastructure of the academic library rather than as an external instrument that users employ independently. Within such an arrangement, GenAI could support preliminary research enquiries, assist in navigating library collections, summarize materials, facilitate discovery and help researchers move

between related sources, while the library provides the scholarly information infrastructure within which those interactions occur. The distinction is important because the value of GenAI in academic research is strongly influenced by the quality and provenance of the information to which it has access. The library, therefore, has an opportunity to shape the information environment in which AI operates rather than merely responding to AI use after it has occurred. This could involve integrating conversational interfaces with library discovery systems, institutional repositories and other authorized scholarly resources, thereby bringing the efficiency of generative interaction closer to the reliability expected of academic information services. In this model, the library is not competing with the AI interface for the researcher's attention; the library becomes the environment through which the AI-assisted research interaction is delivered.

The convergence model also transforms the role of the librarian. The librarian as an AI-mediated research adviser would not simply teach researchers how to search databases or locate resources, but would help them navigate AI-mediated research processes. This includes determining when GenAI is appropriate for a research task, developing effective prompts, identifying suitable scholarly sources, checking AI-generated claims and tracing information back to authoritative evidence. The emerging “answer first” research environment makes this role particularly significant because researchers may encounter an AI-generated answer before encountering the sources from which they would traditionally have begun their inquiry. Withorn (2025) argued that this shift requires librarians to recognize AI responses as texts that require interpretation, assessment and review. The librarian, therefore, becomes less of a gatekeeper who controls access to information and more of a critical intermediary who helps researchers interrogate AI-mediated information. This represents a transformation of professional mediation rather than its disappearance.

Convergence also expands the academic responsibility of the library for AI literacy, information verification and responsible AI use. If researchers increasingly encounter scholarly information through generative systems, then the traditional responsibility of the library for information literacy must extend to the conditions under which AI-generated information is produced and consumed. Academic librarians can help researchers understand the limitations of AI-generated outputs, evaluate their credibility, verify citations and claims, recognize bias, protect sensitive information and understand the ethical boundaries surrounding AI use in research. Evidence from academic library practice already indicates that librarians are developing AI-focused information-literacy initiatives, with instruction addressing the use of generative AI in information retrieval and knowledge synthesis (Chaudhuri & Terrones, 2024). Lo (2025) argued that academic libraries have a leading role in developing AI literacy encompassing technical knowledge, ethical awareness, critical thinking and practical competence. In such situation, AI literacy does not replace information literacy; it extends it into an environment in which information may be generated, summarized and mediated by artificial systems.

The convergence of GenAI and academic library research services, therefore, represents a shift in the location, process and character of research support. The library of the future may not be defined primarily by whether it provides more information than an AI system or whether it can compete with AI in speed of response. Its value may increasingly lie in creating a trustworthy scholarly environment within which AI can be used effectively, critically and responsibly. GenAI contributes computational speed, conversational interaction and the capacity to process large quantities of information; scholarly resources provide evidence and provenance; the researcher contributes disciplinary purpose and intellectual judgement; and the librarian provides professional mediation, evaluation and ethical guidance. The convergence of these elements creates a research-support system that is potentially more capable than any of them operating independently. Convergence, therefore, should not be understood as the disappearance of the academic library into artificial intelligence, but as the transformation of the research-support function of the library from traditional information mediation to intelligent, AI-mediated and professionally governed research assistance.

Strategic Friendship: The Way Forward

The emerging relationship between generative artificial intelligence (Gen AI) and academic library research services requires academic libraries to move beyond a defensive response to technological disruption and towards deliberate professional repositioning. In a GenAI-mediated information environment, information literacy competencies remain necessary, as researchers must increasingly encompass the ability to understand how AI-generated information is produced, recognize its limitations, construct effective prompts, interrogate outputs, verify claims against authoritative sources and identify fabricated or misleading information. Recent scholarship on AI literacy in academic libraries identified AI literacy as an emerging competency for both library professionals and users, with implications for education, policy and responsible use of AI (Ali & Richardson, 2025). The issue is no longer whether researchers will use GenAI, but how academic libraries can remain central to research in an environment where information discovery, interpretation and generation are increasingly mediated by artificial systems. The future relevance of the academic library will, therefore, depend less on its ability to resist GenAI and more on its capacity to integrate the technology without surrendering the professional values of librarianship. Four directions are particularly important.

Reposition Librarians from Information Providers to AI-Informed Research Advisers:

First, academic librarians need to be repositioned from information providers to AI-informed research advisers. The traditional responsibility of directing users towards information resources must increasingly be complemented by the ability to guide researchers through AI-mediated research processes. Librarians should be equipped to advise researchers on appropriate AI tools, prompt formulation, source verification, AI-assisted literature searching and the limitations of generated responses. This does not make the librarian subordinate to the technology; rather, it places professional judgement at the point where AI-generated information is assessed and applied. As GenAI increasingly performs routine information tasks, the distinctive value of the librarian should consequently shift towards contextual interpretation, critical evaluation, research ethics and personalized scholarly guidance. The librarian, thus, becomes a mediator not only between the researcher and information resources, but also between the researcher, GenAI and scholarly evidence.

Develop AI Literacy among Librarians and Researchers:

Second, academic libraries should prioritize the development of AI literacy among both librarians and researchers. Librarians cannot effectively teach responsible AI use without possessing sufficient knowledge of how generative systems operate, their capabilities, limitations and ethical implications. AI literacy should, therefore, become part of continuing professional development, while researchers should be taught how to formulate effective prompts, interrogate AI-generated responses, identify hallucinations, verify references, recognize bias and distinguish generated content from authoritative scholarly evidence. Lo (2025) argued that academic libraries have an important role in developing AI literacy that encompasses technical understanding, critical evaluation and ethical awareness. This reinforces the need to extend conventional information-literacy programmes so that researchers are prepared not only to evaluate information retrieved from traditional sources but also to evaluate information generated and mediated by AI.

Integrate GenAI Strategically Into Research and Reference Services:

Third, libraries should integrate GenAI strategically into research and reference services while retaining human verification. Such integration should be guided by the particular strengths of the technology rather than by the assumption that every library function requires AI. GenAI may be useful for routine reference enquiries, preliminary literature searching, research guides, summarization, research consultation and other repetitive activities, allowing librarians to devote more time to complex research problems. However, AI-generated responses should remain subject to professional review where accuracy, authority and scholarly integrity are important. The principle should, therefore, be that AI accelerates research support, while librarians validate and contextualize its outputs. This approach allows libraries to benefit from the speed and scale of GenAI without transferring professional responsibility to an artificial system whose outputs may contain factual errors, fabricated citations or other forms of unreliability.

Finally, academic institutions and libraries should develop clear policies and ethical frameworks for responsible AI-supported research. Such frameworks should address appropriate AI use, academic integrity, disclosure of AI assistance, citation and attribution, copyright, privacy, data protection, bias and the verification of AI-generated information. The library should play active role in developing these policies because its traditional responsibility for information ethics and scholarly information use places it at the centre of the emerging AI-mediated research environment. Rather than leaving researchers to negotiate these issues individually, libraries can provide institutional guidance, training and evaluation frameworks that encourage productive use while limiting irresponsible dependence on GenAI. The way forward is, therefore, neither resistance to GenAI nor uncritical adoption. Academic libraries must reposition the librarian, develop AI literacy, integrate GenAI under human professional judgement, and establish ethical structures for its use. Through these measures, GenAI can become an instrument for transforming academic library research services without displacing the professional values and judgement that give those services their enduring relevance.

CONCLUSION

The emergence of generative artificial intelligence (Gen AI) has introduced a significant shift in the relationship between researchers, scholarly information and academic library research services. GenAI is no longer merely a technological tool for generating text or retrieving information; its capacity to assist with information discovery, synthesis, research ideation, analysis and academic communication increasingly positions it as an emerging research assistant. This development creates both pressure and possibility for academic libraries. As a competitor, GenAI can perform some routine research-support functions traditionally mediated by librarians, potentially reducing users' dependence on conventional reference and research services. As a collaborator, however, it can extend the reach, speed and responsiveness of librarians while allowing professional expertise to remain central to information evaluation and research guidance. At a deeper level, the relationship may develop into convergence, where the researcher, librarian, GenAI and scholarly information operate as interconnected components of an integrated research-support environment.

The future of academic library research services should, therefore, not be understood in terms of choosing between the librarian and GenAI. The more important question is how the distinctive capabilities of both can be brought together without compromising scholarly integrity, professional judgement and responsible information use. GenAI may provide speed, accessibility and computational capacity, but these capabilities do not eliminate the need for human judgement in evaluating evidence, establishing information provenance and making context-sensitive scholarly decisions. Academic libraries must respond through professional repositioning, AI literacy, strategic technological integration and appropriate ethical governance. GenAI represents a threat where it competes with established research-support functions, an opportunity where it augments librarians' capabilities, and a transformative force where AI and library services converge. The continued relevance of the academic library will ultimately depend not on resisting this transformation, but on shaping it in ways that preserve the human, critical and scholarly foundations of research support.

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