

ChatGPT for Libraries and Librarians: Harnessing the Power of ChatGPT in Library Services: A Study

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Abstract: The emergence of ChatGPT in late 2022 has sparked significant debate regarding its role in higher education and academic libraries. As a large language model (LLM) capable of generating coherent, human-like text, ChatGPT offers opportunities to enhance library services through improved information retrieval, reference support, research assistance, and open educational resource (OER) development. This paper examines the potential applications of ChatGPT within academic libraries, emphasizing its capacity to streamline tasks, enrich user experiences, and support innovative teaching and learning practices. At the same time, the study highlights critical challenges, including ethical issues related to authorship, plagiarism, bias, misinformation, and copyright ownership, as well as technical and logistical barriers to implementation. A review of existing literature demonstrates both the benefits and limitations of AI integration [10], [11], [16], underscoring the need for thoughtful strategies in deployment. The findings suggest that while ChatGPT and similar tools can function as valuable aids—potentially acting as virtual research or teaching assistants—they cannot replace the expertise and ethical stewardship of librarians. The paper concludes by calling for pilot programs, collaborations with AI developers, and empirical research to ensure responsible adoption, positioning academic libraries to balance innovation with accountability in an evolving digital landscape.

Keywords: Academic libraries, Artificial Intelligence (AI), ChatGPT, Digital literacy, Ethical considerations, Information retrieval, Reference services.

I. INTRODUCTION

ChatGPT debuted in late November 2022 and quickly became popular, gaining one million users in just a week. OpenAI, the organization behind the powerful picture generator DALL-E, created ChatGPT, a large language model (LLM) application that employs deep learning techniques to generate text in response to human queries. It has the ability to create essays, poetry, song lyrics, designs, code, webpages, and even assist with tasks like medical diagnoses. Unlike traditional web searches, ChatGPT is trained on an extensive dataset that includes newspapers, books, websites, academic papers, and other sources. This collection encompasses multiple languages as well as programming formats. The model works by predicting the next word in a sequence, which allows it to create well-structured essays and extended pieces of text.

Just weeks after its launch, discussions quickly emerged about ChatGPT's potential impact on higher education. In his blog post "Resources for Exploring ChatGPT and Higher Education," Bryan Alexander compiled over 20 references to this transformative tool [1]. By early January, conversations had already reached academic forums, with articles appearing in *The Chronicle of Higher Education* and *Inside Higher Ed*. Responses were divided—some viewed the tool as a valuable aid for research and writing, while others expressed concern about students misusing it to generate essays or exam responses [5].

For librarians and information professionals, the most urgent questions center on how tools like ChatGPT and DALL-E will affect academic libraries. What changes might these technologies bring to library work, and in what ways could they support the needs of 21st century researchers? The following study explores possible scenarios, applications, and opportunities for enhancement.

II. OBJECTIVES OF THE STUDY

The purpose of this research is to examine the integration of ChatGPT within academic library environments, focusing on the following themes:

- *Technological Innovation in Libraries:* As academic libraries continue to embrace digital tools, ChatGPT stands out as a significant advancement in natural language processing. Investigating its potential role can help institutions remain at the forefront of innovation.
- *Enhancing User Experience:* Since user engagement is central to library services, this study explores how ChatGPT could improve interactions, streamline information retrieval, and assist with problem-solving, ultimately enriching the user experience.
- *Unique Contributions of ChatGPT:* Considering how the model frames its role and challenges may offer valuable insight into the broader implications of AI in libraries.
- *Ethical Concerns and Challenges:* Examining the ethical aspects of deploying AI in academic libraries will help professionals anticipate risks, address concerns, and ensure responsible implementation.

III. LITERATURE REVIEW

A larger trend of digital transformation in educational practices is reflected in the increasing pace of AI technology integration in higher education. With an emphasis on AI in libraries and information services, ethical issues, and difficulties related to AI in academic training, this review of the literature examines the body of research on AI integration specifically ChatGPT in higher education.

AI in Libraries and Information Services: Following a global trend of leveraging AI to improve services and help users, libraries have experienced tremendous growth in the last ten years in the use of AI-based chatbots (Lappalainen and Narayanan, 2023) [17]. As a cutting-edge language model, ChatGPT affects academics, students, and librarians in educational contexts, posing both possibilities and problems. Libraries are essential for delivering information services, and ChatGPT and other AI technologies provide fresh approaches to enhance user interactions and information retrieval (Rigby, 2023) [11]. By offering pertinent articles and optimizing search keywords for users, the model can act as a discovery engine (Lappalainen and Narayanan, 2023; Cox and Tzoc, 2023) [10], [11]. Furthermore, ChatGPT can help librarians with duties including language translation, citation management, data analysis, and content creation (Cox and Tzoc, 2023; Chen, 2023; Adetayo, 2023) [10]. In addition to providing 24/7 services, such as audio answers for customers with special needs, its deployment frees up librarians' time for more difficult enquiries (Adetayo, 2023; Rigby, 2023; Cox and Tzoc, 2023) [10], [11].

However, librarians are educating users about potential biases in ChatGPT's replies because of worries around AI biases and the ownership of AI-generated information (Cox and Tzoc, 2023) [11]. Despite these obstacles, ChatGPT has the potential to transform higher education and information literacy by providing quick syllabi and lesson planning development and changing library services (Cox and Tzoc, 2023) [11].

Ethical Considerations: Ethical considerations are essential to academic training because they provide appropriate information-gathering procedures and provide guidance for users on acceptable behavior. Bias, privacy, and data security are ethical issues brought up by the use of AI in education (Chukwuere, 2023; Livberber and Ayvaz, 2023; Lund et al., 2023) [16]. The results of ChatGPT might be detrimental, skewed, or erroneous (Patel et al., 2023) [16]. For AI to be developed and used in education, these ethical issues must be addressed. The commercialisation of AI-generated searches and content ownership are further issues. AI-assisted cheating, in which students use AI writing tools to commit plagiarism, further undermines academic integrity (Alser and Waisberg, 2023; Lund et al., 2023) [16]. Some scholars have proposed expanding the definition of plagiarism to encompass the usage of AI-generated words, concepts, or ideas (Anders, 2023; Cox and Tzoc, 2023) [16]. These issues show how introducing AI into academic contexts requires careful consideration and ethical constraints [11].

There are particular difficulties in integrating ChatGPT into academic libraries, including both ethical and technological issues. The model's capacity to satisfy the various demands of academic users is the first area of concern. A major technological challenge for libraries is making sure the language model comprehends and produces reliable information across a wide range of disciplines. Library managers face logistical issues as a result of the constant updates and fine-tuning needed to preserve the model's correctness and relevance in the quickly changing academic scene.

The use of ChatGPT in academic libraries comes with certain risks, such as potential misuse and the diminishing reliance on human expertise. Furthermore, ChatGPT lacks the sophisticated comprehension of a real librarian when managing complicated enquiries and may give erroneous answers during reference transactions (Adetayo, 2023) [16]. Another drawback is that the model occasionally generates results that are damaging or objectionable. However, OpenAI claims that the model has been enhanced to reject damaging and unsuitable requests.

IV. KNOWLEDGE NAVIGATION

ChatGPT presents an intriguing alternative to traditional search engines like Google, which respond to queries with a list of links for users to explore. What sets ChatGPT apart is its ability to directly answer specific questions, providing detailed explanations or factual responses without requiring the user to sift through multiple links. Similar to Google, it can learn your

preferences and deliver tailored, relevant results. However, as of now, ChatGPT's knowledge is limited to data up to 2021, though this is likely to expand in the future.

It is not difficult to envision a future where ChatGPT supplements—or potentially replaces—traditional search engine models. Emerging platforms such as You.com already merge conventional search results with AI-powered conversational responses. Major technology companies like Google and Microsoft have also announced initiatives to integrate ChatGPT-style features into their systems. With the availability of a new API, ChatGPT can now be embedded in library discovery services, offering both direct answers to queries and links to relevant collection materials. This development introduces the possibility of leveraging ChatGPT to explore large-scale text repositories, such as the Hathi Trust, which may in turn revive interest in full-text searching of library collections and stimulate competition among database providers to adopt similar AI-driven tools.

Beyond search and discovery, ChatGPT has the potential to support the research process itself. It can generate ideas, streamline repetitive tasks, and enhance the clarity of research topics. Practical applications include generating keyword suggestions, producing summaries, and potentially creating abstracts from uploaded texts. When integrated with library systems, the tool could even compile bibliographies on specific subjects. Looking ahead, AI tools may evolve into comprehensive research assistants, capable of designing experiments, analyzing datasets, drafting and refining scholarly writing, and automatically generating citations.

V. TYPES OF EXPLORATION IN ACADEMIC LIBRARIES

Similar to ChatGPT, librarians possess expertise in interpreting user intent through their inquiries. Many libraries already employ AI-powered chatbots to address routine reference questions, redirecting more complex issues to professional staff. ChatGPT builds upon this model by delivering enhanced capabilities. Librarians can assist patrons in formulating precise queries to maximize the effectiveness of such AI tools. At the same time, these technologies allow librarians to dedicate more attention to advanced research needs, while offering continuous, round-the-clock support that human staff alone cannot always provide [17]. ChatGPT's ability to answer research questions might influence how educators approach teaching. Instead of relying on testing for factual knowledge or assigning essays, educators may need to create more sophisticated assignments that align more closely with course content. Integrating hands-on, experiential learning into coursework can be highly effective, particularly when assignments adopt creative formats such as concept maps, podcasts, or video projects. Numerous academic libraries already provide resources and spaces that encourage these innovative approaches, and librarians can collaborate with faculty to design and implement such assignments.

VI. INFORMATION LITERACY AND DIGITAL LITERACY

With the rise of AI tools such as ChatGPT and DALL-E, both digital and information literacy have become increasingly essential. These technologies highlight the importance of teaching critical thinking skills, including how to verify sources, evaluate AI-generated responses, and distinguish between authentic human creations and those produced by artificial intelligence. Librarians play a vital role in this process by guiding students and faculty in applying critical analysis to the content they consume and create—even when it is difficult to tell whether a work originated from a person or a machine.

According to Anand Rao, chair of the Department of Communication and Digital Studies at the University of Mary Washington, AI tools like ChatGPT are poised to “transform the very nature of knowledge production.” For instance, ChatGPT can produce draft texts that serve as a foundation for further refinement, while DALL-E can generate original artwork that users may enhance using design software such as Adobe Creative Suite. Similarly, ChatGPT can assist with music or lyric creation, as well as help programmers develop faster, more efficient code.

However, these advances also raise complex ethical questions. One pressing issue is authorship: if a student submits work created by AI, is that considered plagiarism? By definition, plagiarism involves presenting another person's work without attribution—but ChatGPT, as a machine, is not a “person.” This dilemma has prompted debates over whether AI should be cited as a source or even acknowledged as a co-author. Prominent academic journals, including *Nature*, have expressed concern that AI may obscure transparency in scholarly publishing, either by enabling deceptive practices or by encouraging researchers to understate AI's role. As a result, many publishers are still developing policies, and librarians are well positioned to help faculty and students navigate these emerging standards [7].

Copyright ownership further complicates the landscape. Recent reports describe books published on Amazon that were entirely generated by AI, as well as entrepreneurs using DALL-E to create artwork for commercial purposes. Some argue that prompting an AI tool gives the user ownership of its output, while others claim the results fall under “fair use.” The U.S. Copyright Office has taken the stance that works lacking human creative input cannot be registered, though this position may be tested in court. Given their expertise in copyright, librarians must remain informed about these evolving issues in order to provide accurate guidance to academic communities.

VII. MAXIMIZING PRODUCTIVITY WITH AI

Librarians have the opportunity to use AI tools to increase efficiency and expand services. For example, ChatGPT can draft routine communications such as emails encouraging faculty to utilize course reserve services, create “read-alike”

recommendations for themed book displays, or produce promotional materials like event flyers and press releases. The range of applications for AI in both text and image generation continues to grow rapidly.

At the same time, AI technologies are not without limitations. ChatGPT's outputs may reflect biases or inaccuracies in its training data, and it is important for librarians to make users aware of these risks. Additionally, OpenAI's monetization model—which includes a paid “pro” subscription with faster, more reliable access—raises concerns about future inequities in knowledge access, where higher-quality information may only be available to those who can afford it.

The long-term implications of AI for librarianship remain unclear. In many respects, current debates around ChatGPT echo earlier societal responses to tools such as calculators, mobile phones, the internet, and Wikipedia. For librarians, the central challenge lies in integrating AI responsibly into professional practice. Key questions include: How can librarians reduce bias in AI-generated content? How might these tools support teaching, learning, and research? While AI offers powerful possibilities, it cannot replace the human relationships that form the foundation of library services. By thoughtfully assessing these technologies and creating services to support their use, libraries can adapt and thrive in an AI-driven environment.

Already, ChatGPT demonstrates the ability to generate syllabi, sample assignments, and LibGuide content within seconds. Some scholars have even suggested that it could serve as a virtual graduate assistant, offering instructional support to students. Resources such as *The Sentient Syllabus* and the University of California–Berkeley's guide on classroom AI use provide valuable strategies for incorporating ChatGPT into higher education teaching and learning.

ChatGPT for Academic Support: Academic libraries are committed to aiding faculty in developing open educational resources (OER) [8]. What once required significant time to author can now be generated by ChatGPT in a matter of hours through a series of queries. However, these texts will still require review and revision to ensure accuracy and maintain high quality. With faster OER production, faculty can have access to more free textbooks and the ability to tailor them to specific course needs, ultimately streamlining the creation of educational materials.

ChatGPT as a Research Assistant: ChatGPT can assist in generating ideas and simplifying aspects of the research process. It helps with outlining key themes, creating keyword lists, and summarizing research materials. In the near future, users may be able to upload textbooks into ChatGPT to generate abstracts or request bibliographies when the tool is connected to library discovery systems. Looking ahead, AI could play a much larger role in the research process—conducting simulations, analyzing datasets, refining manuscripts, and producing citations—essentially functioning as a virtual research assistant.

VIII. ENHANCING REFERENCE SERVICES WITH CHATGPT

Both librarians and AI tools like ChatGPT share the ability to interpret user intent through questions. Many libraries already deploy AI chatbots to manage routine reference queries, forwarding more complex requests to professional staff. ChatGPT extends this model by offering greater functionality, enabling librarians to dedicate more time to in-depth research support. It also provides continuous, around-the-clock assistance, which human staff cannot always offer. Moreover, ChatGPT can help researchers frame their queries more effectively, improving the accuracy and relevance of results.

IX. CUSTOMIZING CHATGPT EXPERIENCES

The efficiency of ChatGPT in answering research questions has the potential to reshape teaching and assessment. Traditional assignments, such as essays or exams, may no longer be sufficient to measure learning outcomes. Instead, more complex, course-specific projects—like infographics, podcasts, or videos—could be integrated into the curriculum to promote experiential learning. Academic libraries already support these creative approaches by offering services, tools, and collaborative spaces, with librarians working alongside faculty to design such assignments. ChatGPT also demonstrates the ability to generate syllabi, assignment outlines, and even draft textbooks in seconds. Some have proposed that it could serve as a virtual teaching assistant, providing instructional support similar to that of a graduate assistant. Initiatives such as *The Sentient Syllabus* and guidance from institutions like the University of California–Berkeley illustrate practical ways of incorporating AI into classroom instruction [3], [4].

X. CHATGPT FOR LIBRARY PROGRAMMING AND EVENTS

Libraries play a key role in supporting faculty with the development of open educational resources (OER). ChatGPT can significantly accelerate this process by drafting textbook content that would traditionally take months or years to produce. While human review remains essential to ensure accuracy and quality, this increased speed can expand access to free and customizable teaching materials. By reducing the time required to create OER, libraries and faculty gain greater flexibility to tailor resources to specific courses, ultimately improving access and affordability for students.

ChatGPT for Career Development: Professionals seeking to improve in their careers often need to identify areas for growth. ChatGPT can assist by providing insights on how to address specific weaknesses, helping users build a plan for personal development and career progression. By pinpointing opportunities for improvement, ChatGPT can guide professionals toward becoming more effective in their roles.

Evaluating and Troubleshooting: This section outlines various strategies for evaluating and troubleshooting systems, comparing their effectiveness and training potential.

Approaches such as Bracketing, Signal Tracking, and Half-Split were found to be the most effective in terms of time efficiency and ease of training. Half-Split and Bracketing proved superior to Signal Tracing in experimental evaluations, as they require less time and fewer tests to diagnose problems.

Supporting Digital Literacy: In today's digital world, children's learning, social interactions, and future job opportunities increasingly depend on their understanding of digital technologies. UNICEF's framework is designed to equip children and young people with the skills needed for education, employment, and everyday life, emphasizing foundational knowledge, transferable abilities, and career-oriented competencies. Despite this goal, implementing digital literacy programs remains difficult in many developing regions because of inadequate infrastructure, limited internet access, and a shortage of qualified teachers. UNICEF and other organizations are working to create comprehensive digital literacy frameworks that address these challenges, with a specific focus on children's unique needs.

ChatGPT for Collection Development and Management: ChatGPT can enhance the library user experience by quickly providing answers to questions such as how to locate a specific book, use library resources, or conduct research on a particular topic. It can also guide users in finding relevant information across databases, journals, and other resources. For users who need language support, ChatGPT can assist with writing, editing, or rephrasing documents. Additionally, ChatGPT can inform users about library services, borrowing policies, interlibrary loans, and other available options. By simplifying the process of retrieving information, ChatGPT helps libraries advance their mission of ensuring broad and equitable access to knowledge.

Addressing Ethical Considerations: Workplace misconduct remains a common issue, with employees frequently violating ethical standards in various ways, from misusing company time to taking credit for others' work. Despite the prevalence of such behaviour's, misconduct often goes unreported, partly due to fears of retaliation. According to the Global Business Ethics Survey, while the reporting of misconduct has increased, so too has the rate of retaliation. To mitigate misconduct and protect those who report it, employers must adopt strategies that encourage ethical behaviour while addressing concerns about potential backlash. Although there is no one-size-fits-all solution, fostering a workplace culture of accountability and support is key to addressing these ethical issues.

XI. STRENGTHS

- *Timely and Relevant Topic:* The paper tackles a pressing issue-how libraries and librarians can leverage ChatGPT and similar AI tools. As AI technology is rapidly being adopted across various sectors, this study explores a crucial area where libraries can innovate and enhance their services.

- *Comprehensive Overview:* It offers a thorough examination of ChatGPT's applications across multiple facets of library services, including reference support, research assistance, digital literacy, and collection management. The paper provides practical insights into how AI tools can streamline and improve library operations.
- *Ethical Considerations:* The inclusion of a section on ethical concerns adds significant value to the paper. By recognizing potential risks linked to AI—including bias, misinformation, and privacy concerns—the paper highlights critical questions about how librarians can address and manage these challenges.
- *Innovative Suggestions:* The document presents creative ideas for using ChatGPT, including assisting librarians with routine tasks, generating syllabi, and serving as a research assistant. These concepts open the door to new ways for libraries to utilize AI for both staff and patron efficiency.
- *Real-World Case Studies:* The references to actual cases where AI tools like ChatGPT have been integrated into libraries strengthen the paper. These examples, such as AI-enhanced 24/7 reference services and improved resource discovery, ground the discussion in real-world practice.

XII. AREAS FOR IMPROVEMENT

- *Lack of Detailed Implementation Strategies:* While the paper provides a sound theoretical foundation, it lacks practical guidance on how to effectively implement ChatGPT in libraries. Including a step-by-step process or a detailed case study showing how to integrate ChatGPT into existing library systems would be beneficial.
- *Overemphasis on ChatGPT:* The paper focuses almost exclusively on ChatGPT, with limited discussion of other AI tools that could complement or enhance library services. Exploring a wider range of AI technologies, such as machine learning algorithms or voice-based assistants like Alexa or Google Assistant, would broaden the perspective.
- *Limited Discussion on Challenges:* Although ethical considerations are addressed, there is a lack of in-depth discussion about the technical and logistical challenges libraries may face when integrating ChatGPT. Topics such as budget limitations, staff training, and the digital divide among patrons could be explored further.
- *Scarcity of Quantitative Data:* The study could be strengthened by incorporating empirical evidence or statistical data to support its assertions regarding ChatGPT's potential influence on library services. Data from libraries that have adopted AI tools or surveys on

librarians' views regarding AI implementation would strengthen the arguments presented.

- *Short- and Long-Term Impact Analysis:* The paper could provide a deeper analysis of both the short- and long-term impacts of AI on library services, job roles, and user engagement. A discussion on how ChatGPT may reshape the role of librarians in the future, and how libraries will need to adapt, would add depth.

XIII. SUGGESTIONS FOR FUTURE WORK

- *Pilot Programs:* Future research could focus on pilot programs in which ChatGPT is implemented in selected libraries, tracking user satisfaction, efficiency improvements, and potential issues. These case studies would validate the proposed ideas with real-world data.
- *Collaboration with AI Developers:* The paper could explore collaborations between libraries and AI developers (like OpenAI) to create customized AI solutions tailored to library needs. This could involve developing specialized models for research assistance or catalog management.
- *Training Programs for Librarians:* More detailed recommendations for training programs would help librarians acquire the necessary skills to work effectively alongside AI tools. This would address a significant barrier to AI adoption: the technical knowledge gap among staff.
- *Broader Scope of AI Tools:* Expanding the scope of the research to include other AI-based tools that complement ChatGPT—such as data analysis software or voice-activated search tools—would present a more comprehensive view of the AI landscape in libraries.

XIV. CONCLUSION

The paper “*ChatGPT for Libraries and Librarians*” provides a forward-looking examination of how AI can be integrated to strengthen library services. While it effectively introduces the possibilities of ChatGPT, the discussion could be deepened by including practical implementation strategies, addressing challenges in greater detail, and incorporating empirical evidence. Overall, the work makes a valuable contribution to the ongoing conversation about AI in libraries, highlighting both its potential benefits and the ethical considerations that must guide its adoption.

ChatGPT represents both an opportunity and a challenge for academic libraries. On one hand, it has the potential to transform core services such as reference support, research assistance, digital literacy, and collection management by offering rapid, personalized, and accessible information. It can streamline routine tasks, generate teaching materials, and even

act as research or teaching assistant, freeing librarians to focus on more complex responsibilities. At the same time, ChatGPT's integration raises important ethical and technical concerns, including issues of bias, misinformation, privacy, authorship, and equitable access. These challenges highlight the need for careful planning, staff training, and policy development to ensure AI is used responsibly within academic settings.

Looking ahead, libraries must balance innovation with critical oversight. Pilot programs, collaborations with AI developers, and robust training for librarians will be essential to maximize the benefits of AI while mitigating its risks. Expanding the conversation to include other AI tools, supported by empirical data and real-world case studies, will also provide a more comprehensive understanding of AI's role in libraries. Ultimately, while ChatGPT and similar technologies may reshape how information is created, accessed, and shared, they cannot replace the human expertise, ethical guidance, and community connections that remain at the heart of librarianship.

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