

OPEN ARTIFICIAL INTELLIGENCE (AI) OF CHATGPT FOR LIBRARY SERVICES & LIBRARY SCIENCE PROFESSIONALS

Mr. Gautam A. Wani

Librarian

Netaji Subhashchandra Science

College, Mulchera

Dist:-Gadchiroli, MS, India,

Email:- gwani396@gmail.com

Dr. Sudhir G. Astunkar

Librarian

Vivekanand Mahavidyalaya,

Bhadrawati

Dist:-Chandrapur, MS, India

Email:- sudhirastunkar@gmail.com

Abstract:- *This study examines how ChatGPT might help library science. The author provided ChatGPT with five insightful questions on two components of the study—the first being about library services, and the second being about Library and Information Science Professional. 1) How can ChatGPT be used to improve digital reference services? 2) Can be used as a digital reference librarian from ChatGPT? 3) How can ChatGPT assist library and information science professionals? 4) How can ChatGPT benefit library users? and 5) What challenges and limitations does ChatGPT face in providing library services? According to the responses given by ChatGPT, it can provide reference aid, research support, language support, access to library services, and information management for users and professionals of libraries. Additionally, the paper discusses the advantage and disadvantage of ChatGPT. The paper also notes specific characteristics and features of ChatGPT that is language, large-scale relating, conversational ability, customization, support, and openAI, among others. But the survey also reveals some, which are covered in the answer to the second part of the third question. These include accuracy and reliability, lack of personalization, scope limitations, and accessibility. All librarians and information scientists may find this material useful.*

Keywords:- *OpenAI, ChatGPT, Artificial Intelligence (AI), Digital Reference Services, Library Professional, Library Services, Library & Information Science.*

Introduction:-

The impact of ChatGPT and other generative artificial intelligence systems has been a topic of discussion in libraries. ChatGPT is a natural language processing tool powered by artificial intelligence that enables users to converse with and query chatbots. In this light, our goal is to find out if ChatGPT technology can function well as a digital reference service in libraries and information centers.

The incorporation of artificial intelligence (AI), chatbots, AI assistants, huge language models, and tools like ChatGPT has become crucial in the constantly changing world of libraries. In today's world that is changing quickly, libraries are embracing these technological

innovations to adapt to the changing requirements and expectations of their patrons. Staff at libraries may improve their capacity to deliver great services, keep up with technology trends, and adapt to the changing digital landscape by utilizing AI, chatbots, AI assistants, massive language models, and tools like ChatGPT.

This in-depth user guide intends to arm library employees, especially librarians, library administrators, and technology aficionados, with useful ideas and coping mechanisms for thriving in the digital era. It offers helpful information and direction on how to make the most of AI technologies to enhance user experiences, streamline business processes, and foster creativity inside the library. This manual will arm you with the skills and information you need to promote positive change in your library services, whether your goal is to improve user interactions through chatbots, investigate the potential of big language models, or employ AI assistants to automate chores. **(Bozkurt, A.)**

“Safely aligning powerful AI systems is one of the most important unsolved problems for our mission. Techniques like learning from human feedback are helping us get closer, and we are actively researching new techniques to help us fill the gaps.” **Josh Achiam**

Review of Literature:-

Although it is a new topic, many researchers have contributed research papers on ChatGPT in the field of library and information science. such as potential impact on library reference services (Chen, 2023), ChatGPT: implications for academic libraries (Cox and Tzok, 2023), new library technologies (Fernandez, 2023), equity index (Kirtania and Patra, 2023), impact on academics and libraries (Lund and Wang, 2023), and library management (Verma, 2023). Hence, the paper discusses in detail how this Artificial Intelligence, ChatGPT latest development library and how it can help information science professionals.

Overview of ChatGPT:- Late in November 2022, Chat GPT (Generative Pre-trained Transformer) exploded onto the scene. It quickly gained popularity and within a week had amassed one million users. ChatGPT is an LLM (long language model) tool that employs deep learning to produce text in answer to questions submitted to it. ChatGPT was created by OpenAI, the same company behind the ground-breaking picture generator DALL-E. It can produce text for essays, emails, music, recipes, computer code, websites, games, and even medical diagnosis. Instead of searching the internet, ChatGPT has been trained on a vast corpus of text, including news items, books, websites, academic articles, and other sources. The current corpus contains information from several languages and computer languages. The process of creating text involves anticipating the following word in a string of words to create sentences and subsequently entire pages of material. **(Cox, C)**

Objectives of the Study:-

In this work, we conducted an exploratory study on how AI-Based ChatGPT affects library services and professionals in library science. The study's goals are as follows:

1. To talk about how technology affects information gathering.

2. To assess the AI-based GPTs' capacity to deliver the appropriate information whenever needed.
3. To discuss the five questions asked to Chat-GPT on library services and library Professional.
4. To discuss Chat-GPT's characteristics, features, benefits, and drawbacks with regard to offering library services to readers.

Characteristics and Features of ChatGPT:-

Language:- ChatGPT is powered by NLP techniques, allowing it to understand and generate text in a human-like manner. It can engage in text-based conversations with users on a wide range of topics.

Large-Scale Pertaining:- Like its predecessor GPT-3, ChatGPT is pertained on a massive amount of text data from the internet. This pertained model is then fine-tuned for specific applications and tasks.

Conversational Ability:- ChatGPT is capable of engaging in back-and-forth conversations with users. It can respond to questions, provide information, offer recommendations, and generate text in a coherent and contextually relevant manner.

Customization:- Developers and organizations can fine-tune ChatGPT for specific use cases or domains, making it more specialized and relevant to particular applications, such as customer support, content generation, or virtual assistants.

Support:- ChatGPT is proficient in multiple languages and can provide responses in various languages, making it accessible to a global audience.

Context:- ChatGPT can maintain context within a conversation, allowing it to provide meaningful responses to follow-up questions and maintain the flow of a discussion.

OpenAI:- OpenAI offers access to ChatGPT through an API, enabling developers to integrate it into their applications, products, or services.

Use of Chat GPT in Library Services:-

It's a recent yet encouraging development to use ChatGPT for research in library services. The term "Generative Pretrained Transformer," or Chat GPT, refers to a particular kind of artificial intelligence language model that can provide logical and pertinent text input answers after being trained on enormous volumes of text data. Chat GPT can be used in the context of library services research to automate a number of processes, including responding to reference queries, recommending books or articles, and helping with information retrieval. In addition to giving customers faster and more effective service, this may allow library employees to concentrate on more intricate and personalized patron interactions. There are many ways to employ ChatGPT and other AI-powered chatbots to improve library services

and give patrons helpful assistance. Here are a few concrete ways that ChatGPT is used in library services:

Reference Services:- ChatGPT can provide immediate responses to user inquiries, including questions about library hours, locations, policies, and basic research assistance. It can assist users in navigating the library's catalog, databases, and online resources by answering queries and providing search tips.

Virtual Assistance:- Libraries can implement ChatGPT as a virtual assistant on their websites or within library apps to guide users in finding resources, making reservations, or accessing library services. ChatGPT can provide directions within the library, helping users locate specific sections or materials.

Research Support:- ChatGPT can assist with preliminary research tasks by suggesting keywords, relevant databases, and search strategies for specific topics. It can generate citation lists or bibliographies based on user input.

Language Support:- Libraries serving diverse communities can use ChatGPT to provide assistance in multiple languages, making their services more accessible to a broader range of patrons.

Recommendation Services:- ChatGPT can offer book, article, or resource recommendations based on user preferences, borrowing history, or specific research interests. It can curate reading lists or suggest related materials to encourage exploration.

FAQ :- ChatGPT can manage frequently asked questions by providing consistent and standardized responses to common inquiries. It can assist with inquiries related to library policies, procedures, and services.

Library Events and Programming:- ChatGPT can promote library events, workshops, and programs by providing information, answering questions, and assisting with event registration.

Accessibility Services:- ChatGPT can offer support to users with disabilities by providing information on accessible resources, assistive technologies, and library accommodations.

Feedback and Surveys:- ChatGPT can gather user feedback and conduct surveys to collect patron opinions and suggestions for improving library services.

Library Orientation and Tours:- ChatGPT can guide new library users through virtual orientations or tours, explaining library layouts, services, and available resources.

Engagement:- ChatGPT can engage users with trivia, book recommendations, literary quizzes, and interactive reading challenges to foster a sense of community and promote reading. ChatGPT can be used to engage with the library's social media audience by responding to queries, sharing information, and encouraging participation in library

initiatives. ChatGPT can help libraries engage with patrons through social media platforms, providing instant responses to messages and comments.

Data Collection:- ChatGPT can collect data on user interactions and inquiries, which libraries can use for improving services, resource allocation, and understanding user needs.

Promote Library Programs:- ChatGPT can be used to promote library programs and events, such as book clubs, author talks, and workshops. Patrons could interact with ChatGPT to learn more about upcoming events and register to attend.

Advantages of ChatGPT using library service:-

1. **24/7 Availability:-** ChatGPT can provide round-the-clock assistance, ensuring that users can access library services and get answers to their questions at any time, including outside of regular library hours.
2. **Instant Response:-** ChatGPT can deliver immediate responses, reducing user wait times and providing quick assistance for common inquiries.
3. **Efficiency:-** ChatGPT can handle multiple inquiries simultaneously, allowing libraries to serve more users efficiently and effectively.
4. **Consistency:-** ChatGPT provides consistent and standardized responses, ensuring that all users receive accurate information and guidance.
5. **Workload:-** Routine and frequently asked questions can be handled by ChatGPT, freeing up library staff to focus on more complex reference and research inquiries.
6. **Resources:-** ChatGPT can recommend relevant books, articles, databases, and other resources, helping users discover materials they might not have found otherwise.
7. **Support:-** ChatGPT can communicate with users in multiple languages, making library services more accessible to a diverse user base.
8. **Enhanced User Engagement:-** ChatGPT can engage users with interactive content, book recommendations, quizzes, and other engaging activities, fostering a sense of community and encouraging library usage.
9. **Collection:-** ChatGPT can collect data on user interactions, inquiries, and preferences, providing valuable insights that libraries can use to improve services and make data-driven
10. **Cost-Effective:-** Implementing ChatGPT can be cost-effective in comparison to hiring additional staff or extending library hours, especially for smaller libraries with limited budgets.
11. **Scalability:-** As library services expand or experience increased demand, ChatGPT can easily scale to accommodate more users and inquiries.
12. **Library Event:-** ChatGPT can assist in promoting library events, programs, and workshops, leading to increased participation and engagement.
13. **Feedback:-** ChatGPT can gather user feedback and conduct surveys, allowing libraries to collect patron opinions and suggestions for service improvement.

Disadvantages of ChatGPT using library service:-

1. **Knowledge Limitation:-** ChatGPT' knowledge is based on the data it has been trained on, and it may not have expertise in highly specialized or niche subjects. It may provide inaccurate or incomplete information for complex queries.
2. **Understanding:-** ChatGPT may struggle with understanding the context and nuances of questions, leading to responses that lack depth or relevance in some cases.
3. **Responses:-** ChatGPT can inadvertently produce biased responses based on the biases present in its training data. Libraries must actively work to mitigate biases and ensure that the information provided is fair and equitable.
4. **Privacy & Security:-** Handling user data and sensitive information securely is crucial. Libraries need to implement robust security measures to protect user privacy when using chatbots.
5. **User Engagement:-** Keeping users engaged and satisfied with the chatbot experience can be challenging. If users find the responses unhelpful or frustrating, they may abandon the service or seek assistance elsewhere.
6. **Ethical Considerations:-** Libraries must address ethical concerns related to AI use in reference services, including transparency, accountability, and ensuring that users are aware they are interacting with a chatbot.
7. **Inability to Handle Inquiries:-** ChatGPT may not be able to handle highly complex or specialized reference inquiries that require in-depth research skills and subject matter expertise. In such cases, users may still need to consult human librarians.
8. **Lack of Personalization:-** While ChatGPT can provide general recommendations, it may not offer highly personalized suggestions or insights based on individual user profiles and preferences.
9. **Information Technology:-** There is a risk that users may become overly reliant on AI chatbots and may not seek human assistance when it is necessary, potentially missing out on expert guidance.
10. **Plagiarism:-** Using ChatGPT to generate text can make it easier for researchers to engage in plagiarism by presenting text generated by the model as their work. AI-powered writing tools can make plagiarism-free text or less plagiarism by paraphrasing.

Questions and Answers by ChatGPT for Library Services:-

Q.1 How can ChatGPT be used to improve digital reference services?

ChatGPT can be a valuable tool for improving digital reference services in libraries and other institutions. Here are several ways in which ChatGPT can be effectively used to enhance digital reference services:

Real-time assistance:- ChatGPT can be used to provide real-time assistance to users who have questions or problems. This can help to improve the user experience and increase the likelihood that users will return to the service in the future.

Personalized service:- ChatGPT can be programmed to provide personalized service to users

based on their individual needs and interests. This can help to make users feel valued and increase their satisfaction with the service.

Comprehensive knowledgebase:- ChatGPT can be designed to be a comprehensive knowledgebase of information that users can access at any time. This can include frequently asked questions, troubleshooting guides, and other helpful resources.

Multilingual support:- ChatGPT can be programmed to provide support in multiple languages, which can help to increase accessibility and serve a wider range of users.

Customer analytics:- ChatGPT can be used to collect data on users' interactions with the service, which can be used to improve the service over time. This can include information on user satisfaction, common problems or questions, and other key metrics.

Frequently Asked Questions (FAQs):- ChatGPT can be programmed to handle frequently asked questions and provide standardized responses to common inquiries, further reducing the workload on human librarians.

Q. 2 Can be used as a digital reference librarian from ChatGPT?

ChatGPT can be a valuable tool for providing digital reference services, but it is not a replacement for a human reference librarian. While ChatGPT can handle routine inquiries, provide information, and assist with basic reference questions, it lacks the expertise, judgment, and ability to handle highly complex or specialized research inquiries that human librarians can address.

ChatGPT can be programmed to function as a digital reference librarian. It can provide users with research assistance; answer reference questions, help users navigate databases and other resources, and gather and analyze data on user interactions with the service. However, it should be noted that ChatGPT is an AI-based system and therefore may have limitations in terms of the complexity of questions it can answer and the level of expertise it can provide. As such, it may be necessary to have human librarians available to address more complex or specialized reference questions.

Question and Answer for Library and Information Science Professional:-

Q.1 how can ChatGPT help library users? ChatGPT can be a valuable tool for assisting library users in various ways, enhancing their overall experience and improving access to library resources and services. Here are some ways ChatGPT can help library users:

Reference assistance:- ChatGPT can help library users to quickly find answers to specific questions they may have, such as how to locate a particular book, how to use library resources, or how to conduct research on a particular topic.

Research support:- ChatGPT can assist library users in finding relevant information and resources related to a given topic or subject area, including online databases, journals, and other sources of information.

Language support:- ChatGPT can help library users who may need language support, such as those for whom English is not their first language, by providing assistance with writing, editing, or translating documents or materials.

Access to library services:- ChatGPT can provide library users with information about library services and resources, such as borrowing policies, interlibrary loan options, and other library-related services that may be available to them.

Overall, ChatGPT can help library users to access information more easily and efficiently, improving their ability to conduct research and find the resources they need. By providing quick and accurate assistance, ChatGPT can enhance the library user experience and support the mission of libraries to provide access to information and knowledge for all.

Q.2 How can ChatGPT help library and information science professionals?

ChatGPT can assist library and information science (LIS) professionals in various ways by streamlining their work processes, offering research support, and providing access to relevant information. Here are several ways ChatGPT can benefit LIS professionals:

Research assistance:- ChatGPT can help professionals to quickly find answers to specific research questions, by providing relevant information and resources related to a given topic.

Language support:- ChatGPT can assist professionals who need help with writing, editing, or translating documents or materials, by providing language support and feedback.

Professional development:- ChatGPT can provide professionals with access to educational resources, such as online courses, tutorials, and training materials, to help them stay up-to-date with the latest trends and practices in the field.

Information management:- ChatGPT can assist professionals in managing large amounts of information by providing tools for data analysis, organization, and retrieval, thereby helping to optimize their workflows and improve their productivity.

Overall, ChatGPT can be a valuable resource for library and information science professionals, helping them to access information more quickly, efficiently, and accurately, Library Policies and Ethics, Information Organization, Library Software Guidance, Library Trends and supporting them in their work to advance knowledge and improve the quality of information services.

Q.3 What challenges and limitations does ChatGPT face in providing library services?

ChatGPT faces several challenges and limitations in providing library services:

Accuracy and reliability:- While ChatGPT is capable of generating responses to a wide range of queries, there is a risk that its responses may not always be accurate or reliable, particularly when it encounters complex or nuanced questions that require human judgment or expertise.

Lack of personalization:- ChatGPT is designed to provide general responses to a wide range of queries, which may not always take into account the specific needs or preferences of individual library users. This lack of personalization can limit its ability to provide tailored assistance and support.

Limited scope:- While ChatGPT can provide information on a wide range of topics, its scope is limited to what has been included in its training data. This means that it may not be able to provide information on some niche or specialized topics that are outside its area of expertise.

Accessibility:- While ChatGPT can be accessed online, it may not be accessible to all library users, particularly those who do not have access to the internet or who may have disabilities that make it difficult to use digital interfaces. Overall, while ChatGPT has the potential to be a useful tool for providing library services, its accuracy, personalization, scope, and accessibility limitations need to be carefully considered when integrating it into library services to ensure that it is used effectively and appropriately.

Conclusion:-

Modern artificial intelligence software called ChatGPT can offer the community of library users a variety of functions. In this article, the author sent five questions to ChatGPT on the topics of library services and librarians and information scientists:

- How can ChatGPT be used to improve digital reference services?
- Can be used as a digital reference librarian from ChatGPT?
- How can ChatGPT help library users?
- How can ChatGPT help library and information science professionals?
- What challenges and limitations does ChatGPT face in providing library services?

The answers to the first and second questions demonstrate how ChatGPT may enhance library services and information management while also enhancing digital reference services and their utilisation. Reduces the workload of human librarians by being programmed to handle frequently asked questions (FAQ) and offer standardized answers to frequent enquiries. The accuracy and dependability, lack of personalization, scope, and accessibility of ChatGPT present various restrictions and difficulties for serving library patrons.

According to the answers to the third and fourth questions, ChatGPT can help library and information science workers as well as patrons of libraries in a number of ways, including reference assistance, research support, language support, access to library services, and information management. When it comes to serving library patrons, ChatGPT has some shortcomings and difficulties, including accuracy and dependability, a lack of personalization, a constrained range, and accessibility.

In response to the fifth query, ChatGPT suggests in a number of circumstances speaking with librarian experts. This proves that libraries and librarians have not been supplanted by new forms of technology. Artificial intelligence, IoT, new software, and other technologies

will only be tools for library professionals; they will never take the role of libraries and librarians. However, with ChatGPT, libraries can provide further services.

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