IMPACT OF CHATGPT ON THE LIBRARY ENVIRONMENT

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Abstract

The effect of Chat GPT on the library system is investigated in this study work. Large-scale natural language processing and comprehension capabilities have been demonstrated by Chat GPT, a language model developed by Open AI. The article addresses the benefits, components, features, and impacts of using Chat GPT in library systems, including diminished logical thinking ability, bias, intellectual property, inability to manage sensitive material, and lack of confidentiality. The article also discusses the negative aspects of utilizing Chat GPT, including how little attention it pays to the complexities of human language, how ignorant it is of news and events that will happen beyond 2021, and how little it understands technical jargon. Chat GPT may be a useful tool in library reference services, especially when dealing with regular and easy questions. Human reference librarians, who can respond with more complicated and



sophisticated information, cannot be replaced by this technology. Overall, this study unit adds to the expanding body of work on library systems using artificial intelligence. ChatGPT, a new technology being used in many spheres of human knowledge, has had an impact on libraries in both positive and adverse ways, explored in this article.

KEYWORDS : ChatGPT, Library System, AI, Impacts.

Introduction :

As people keep on evolving, their wants and requirements also grow daily. In order to make their daily lives simpler, people have been working to advance technology. from the first generation of vacuum tube computers through the fifth generation of artificial intelligence. Based on the GPT language model technology, OpenAI created the public utility known as ChatGPT(Kirmani, 2023). It is a very intelligent chatbot that can respond to a variety of text-based requests, including basic queries and more difficult ones like writing thank-you notes and assisting people in difficult conversations regarding productivity problems (Liu et al., 2021). By utilizing its vast data stores and effective architecture, ChatGPT is able to comprehend and interpret user requests while also producing suitable answers in almost natural human language. In addition to its useful uses, As a result of its ability to create language that is similar to human speech and complete difficult tasks, ChatGPT represents an important milestone in the disciplines of natural language processing and artificial intelligence.

Earlier, people relied mostly on libraries for their information needs, but as the world expanded so quickly, so did the need for knowledge, and computers and the internet played a significant part in meeting this demand. The information industry's next major things are ChatGPT and chatbots. We can integrate ChatGPT into several library services, making it one of the library's strengths. In addition to its benefits, it also has significant drawbacks for human society, which are discussed in this article.



Review of Literature :

Many researchers wrote articles on ChatGPT related to library and some of them are reviewed as follows; (Deshmukh, 2023)focused on how Chat GPT may benefit the library, particularly with regard to reference and information services. The writers concentrated on Chat GPT's benefits and drawbacks. They discussed how Chat GPT enhances response times, the caliber of user questions, and how it lessens the workload of the librarian. The article also discusses the moral ramifications of applying Chat GPT, including concerns about prejudice and privacy. The Chat GPT can be a useful tool for reference services, but a human librarian who can offer more complicated and sensitive replies cannot be replaced. Similarly, In their study, (Lund & Wang, 2023) offered a thorough analysis of the technology underlying ChatGPT. ChatGPT has the potential to significantly boost academic research and librarianship in both unsettling and novel ways. The impact of ChatGPT on academia and libraries is discussed in this paper as well. ChatGPT responds that it can enhance academic research and scholarship in a variety of ways, including automated summarization, help with literature reviews, text generation, data analysis, and language translation. Additionally, it addresses ethical issues and privacy issues including bias, privacy, and security.

The authors(Cox & Tzoc, 2023)discussed a few recommendations and estimations of how AI tools may change users' work in searching, research, teaching, and other areas, as well as the limitations of AI tools like plagiarism, copyright, productivity, and other issues. They close by posing some crucial queries, such as how librarians may incorporate these new technologies into our work. How can we aid in lessening their prejudices and enhancing the output quality? They said that ChatGPT and AI technologies cannot take the role of human interactions, which distinguishes humanity from all other forms of technology. ChatGPT. ChatGPT has the potential to significantly boost academic research and librarianship in both unsettling

and novel ways. The impact of ChatGPT on academia and libraries is discussed in this paper as well. ChatGPT responds that it can enhance academic research and scholarship in a variety of ways, including automated summarization, help with literature reviews, text generation, data analysis, and language translation. Additionally, it addresses ethical issues and privacy issues including bias, privacy, and security.

(Dinesh Kalla, 2023) claim in their work that ChatGPT has had a substantial impact on a variety of sectors, including academia, cyber security, customer service, and software development. ChatGPT can raise user happiness, productivity, and efficiency. The ChatGPT is going to advance and get past the constraints in the future. The progression of chatbots from simple chatbots to rule-based chatbots, natural language processing to the modern deep learning chatbots is discussed by (Verma, 2023) said Improved user experience, enhanced reference assistance, personalized recommendations, navigation assistance, and user engagement are some of ChatGPT's effects on traditional libraries. According to (Panda & Kaur, 2023) modern chatbots like ChatGPT develop their own material in response to simple or complex indications whereas older chatbots provide prepared replies to particular topics. ChatGPT offers individualized services, multilingual support, data collecting and analysis, and reference aid around-the-clock.

Objectives :

- To understand the concept of Chat GPT.
- To know the advantages of Chat GPT in Library services.
- To discuss the impacts of Chat GPT.



About ChatGPT :

Definition- ChatGPT is an AI chatbot that simulates human communication by using natural language processing. The language model is capable of answering queries and writing a variety of written materials, such as articles, social media postings, essays, code, and emails.("everything you know about ChatGPT| WhatIs.com," n.d.)

Development- ChatGPT was developed and released in November 2022 by the AI research company OpenAI. Elon Musk and Sam Altman were among the entrepreneurs and scientists who created it in 2015. Microsoft is the most renowned of the many investors in OpenAI. Dall-E, a text-to-art AI generator, was also developed by OpenAI("OpenAI," n.d.).

An example of generative AI is ChatGPT, a platform that allows users to provide instructions to receive artificial intelligence-generated human-like graphics, text, or videos.As users may ask questions of ChatGPT or seek explanation on its responses, it is comparable to the automated chat services available on customer care websites. The GPT, or "Generative Pre-trained Transformer," is the term used to describe how ChatGPT interprets requests and creates answers. Human feedback and reward models that rate the best replies are used to train ChatGPT using reinforcement learning. With the use of machine learning and this input, ChatGPT can enhance its replies in the future.

A publicly accessible tool that makes use of GPT technology is called ChatGPT. It can respond to a variety of text-based requests as a professional chatbot, including simple enquiries and more complex ones like writing thank you notes and resolving productivity concerns. When a primary topic is broken down into smaller subtopics and each component is written by GPT, a whole scholarly essay may be produced utilizing the



programme. Even writing a whole report in a couple of seconds with little assistance from a researcher is feasible with an entire copy that supports lengthier replies. ChatGPT might have a big impact on a lot of different businesses in addition to perhaps influencing the writing profession. Its ability to understand natural language makes it the perfect tool for dealing with simple customer service enquiries, such as those made using websites' "ask me" functionality. The legal profession could find use for it because of its capacity for text analysis and interpretation, which might help with duties like document preparation and research. The capacity of ChatGPT to oversee the calibre of written work may also be helpful in the realm of education, maybe assisting in grading and providing comments on student tasks (Lund & Wang, 2023).

Features of ChatGPT :

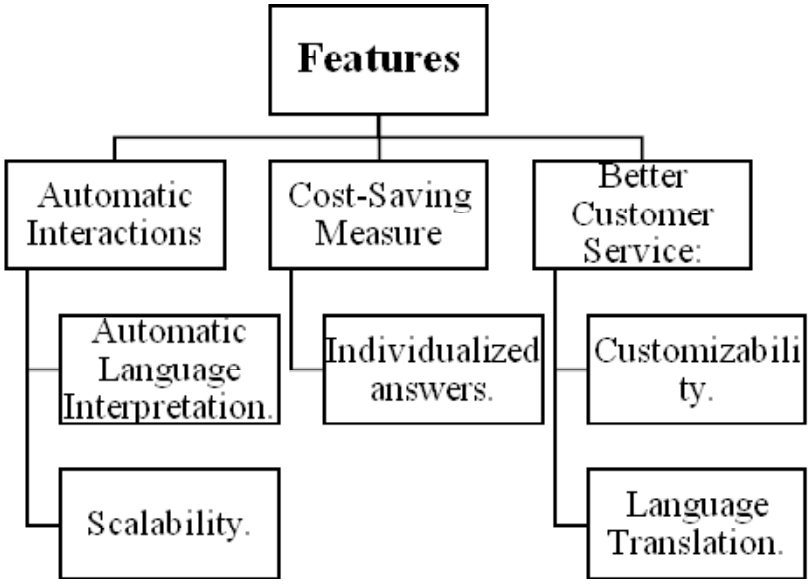


Figure 1. Features of ChatGPT

Components of ChatGPT :

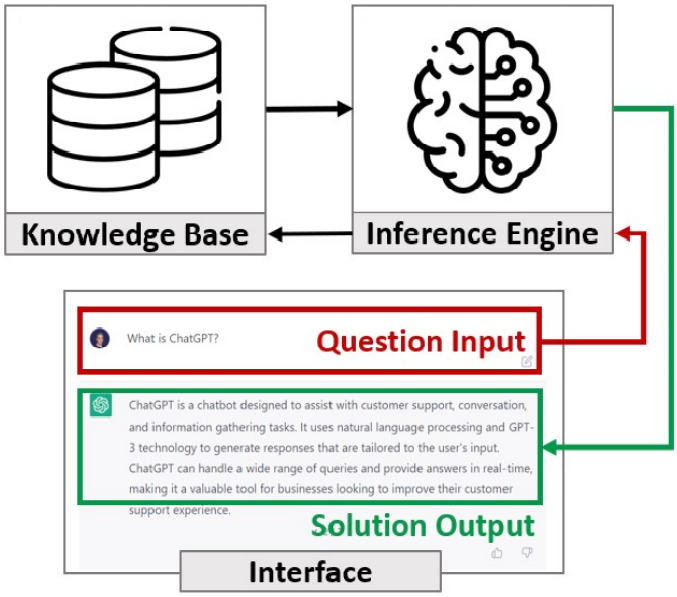


Figure2. Components of ChatGPTSource, (Wanga, Anwerb, Daic, & Liua, 2023)

ChatGPT in Libraries :

Clients of libraries can receive **virtual reference services** using Chat GPT. Users may use the chatbot to ask questions and get immediate responses around the clock, without waiting for a librarian to become available. Chat GPT can be built to answer simple inquiries about library services, resources, and regulations as well as help with trickier research queries. Users can use ChatGPT to search the library's catalogue for books, journals, and other materials. ChatGPT employs natural language processing to decipher user requests and present suitable search re

Chat GPT is also used to provide **customers recommendations** for books based on their reading habits and history. Chat GPT may recommend books to users based on the books they have previously checked out and their replies to surveys about their reading preferences. By examining patron questions to find themes and areas that are in high demand, Chat GPT can help librarians with **Collection building**. In order to determine areas where the library's collection may be updated or increased, Data about book circulation and prevailing patterns may also be analysed using Chat GPT.

Chat GPT is employed to provide customers **language conversion** services. Customers may engage with the library in their local tongue and receive replies from Chat GPT in the language of their choosing by linking the chatbot with translation software.ChatGPT can be used to deliver **interactive instruction** on the products and services offered by libraries. For instance, it may show users how to access databases and e-books, two types of electronic resources.ChatGPT is programmed to respond to commonly asked questions **(FAQs)** regarding the policies, offerings, operating hours, and other details of the library. Readers who use ChatGPT may get personalised reading suggestions based on authors, genres, and interests.

Users with disabilities may be served by ChatGPT through the provision of accessibility services. ChatGPT might be used, for instance, to give video transcripts or audio commentary on visual content. Practise exercises and other resources for language education can be provided through ChatGPT. Users can utilise ChatGPT to acquire proposals for language learning materials or to practise speaking and writing in a foreign language.

For **promotinglibrary programmes** such as Book clubs, author presentations, and workshops are just a few examples of the kind of events and programmes that may be promoted with ChatGPT. In order to find out more about forthcoming events and sign up to participate, visitors might communicate with ChatGPT. By offering prompt replies to messages and comments on social media platforms, ChatGPT may assist libraries in their **outreach and engagement efforts**(Deshmukh, 2023).



Advantages

- **Wide access to information:** Libraries provide a huge selection of books, journals, articles, and other materials on a range of subjects. ChatGPT may have access to this knowledge by utilizing library services, which will enable it to respond to users' inquiries in a more precise and thorough manner.
- **Effort-saving:** ChatGPT can benefit from library services to rapidly acquire pertinent and dependable materials without having to spend a lot of time exploring the internet.
- **24/7 virtual assistance:** Even when actual libraries are closed, ChatGPT will offer library patrons 24/7 online service.
- **Reliable sources of information:** Libraries are renowned for offering trustworthy sources of information. This can assist ChatGPT in keeping users from receiving information that is unreliable or deceptive.
- **Current information**: Libraries regularly add new materials to their holdings, enabling ChatGPT to access the most recent studies and fashions across a range of subjects.
- **Research aid:** A lot of libraries provide services for research aid that might help ChatGPT with more difficult queries or research tasks.
- **Teamwork Possibilities:** Libraries frequently have collaborative areas where people may share information or work on projects together using ChatGPT
- **Flexibility for a variety of languages:** A lot of libraries include materials in several tongues, thus ChatGPT can respond in a variety of languages and attract more users.
- **Availability to specific sources:** Libraries frequently have materials like rare books, manuscripts, and archives that are not easily accessible online. With the use of these resources, ChatGPT can offer customized and distinctive services.



Impacts of ChatGPT

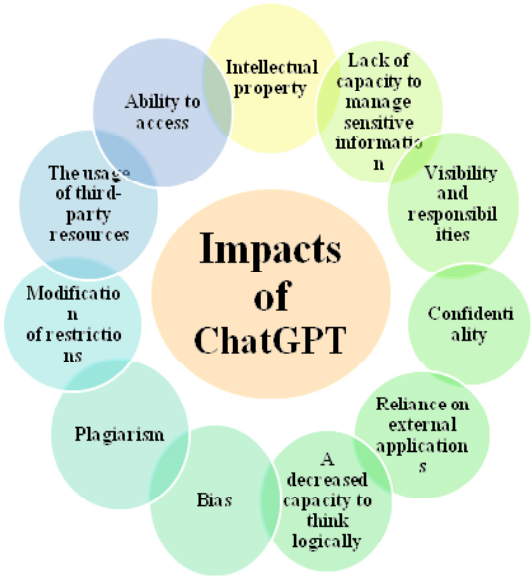


Figure 3. Impacts of ChatGPT

1. **A decreased capacity to think logically:** Using ChatGPT may cause a decline in one's ability to think critically. This is so that people won't need to independently engage in substantial thinking or problem-solving and instead may get information and respond to inquiries quickly and readily from the model. Additionally, if the data included in the model is reliable and accurate, it may cause some people to trust incorrect information without checking it.

2. **Reliance on external applications:** ChatGPT depends on outside programmes and services to operate and deliver results, and these services and libraries may experience outages or have their APIs modified. The functioning of ChatGPT may be impacted if any of these services are interrupted or stop operating.

3. **The usage of third-party resources :** by ChatGPT may give rise to security and privacy issues about personal information. If Chat GPT is given access to sensitive information, these outside services may handle and store it, which could lead to security concerns or data breaches.

4. **Modification of restrictions:** the level to which ChatGPT may be modified or adapted to particular use cases may be constrained by the usage of other services. The services it depends on have their own restrictions and limits, which prohibit ChatGPT from offering the best or most pertinent answers to some concerns.

5. **Plagiarism :** Researchers might discover it easier to commit plagiarism when using ChatGPT to generate text by misrepresenting the model's output as their own. AI-driven writing tools that paraphrase and create unique content can minimise plagiarism.

6. **Bias :** The model's answers could be influenced by the biases in the training information, which might lead to unreliable or unjust outcomes. This may have an excessively adverse effect on disadvantaged people and compromise the library's goal of ensuring fair access to knowledge.

7. **Confidentiality:** Since the model can produce very accurate synthetic text or speech, it could be used to fool or impersonate others, which is against user privacy. Additionally, the model could be able to produce delicate data that should be secured and never disclosed without specific agreement, including personal information, financial information, and even medical data.

8. **Visibility and responsibilities:** Chat GPT should have been designed, trained, and deployed in a transparent manner, including the data used to train the model, to allow for the identification and correction of any potential biases or mistakes. Clear rules and processes must also be in place to address any potential problems.



9. **Intellectual property:** ChatGPT can produce text that might be covered by copyright. As a result, it is critical to make sure that the usage of the model conforms with applicable laws and rules governing intellectual property, such as asking for and receiving permission from copyright holders when needed.

10. **Lack of capacity to manage sensitive information:** Due to the possibility of such material being made public through user interactions, ChatGPT may not be appropriate for managing sensitive or confidential information. It is crucial for LICs to consider ChatGPT's benefits and drawbacks before deciding whether it is the best option for their requirements(Panda & Kaur, 2023).

11. **Ability to access:** Although ChatGPT is available online, not all library users may be able to use it, especially those without internet access or those who might have impairments that make it challenging to use technological interfaces. Overall, ChatGPT has the potential to be a helpful tool for offering library services, but its precision, personalization, breadth, and accessibility constraints need to be carefully examined when incorporating them into library services to make sure that they are utilized properly (Kirtania, 2023).

Limitations of Chat GPT :

It is not completely cognizant of the complexities of human language- Words are generated using ChatGPT depending on input. As a result, comments could come out as superficial and lacking in profundity.

Ignorance of information and events occurring after 2021- The 2021 content is the last of the training data. Based on the data it uses, ChatGPT may deliver inaccurate information. ChatGPT could respond incorrectly if it does not completely comprehend the question. Feedback is advised while providing wrong answers because ChatGPT is still in earlier stage.



Answers could turn out robotic and artificial- ChatGPT may misuse terms like the or and since it anticipates the following word. Due to this, information must still be reviewed and edited by humans in order to make it read more naturally and sound more like human writing.

It provides summaries but no source citations- ChatGPT does not offer interpretation or analysis of any data or statistics. Despite offering a number of data, ChatGPT does not really explain what these figures imply or the way they connect to the subject.

Insufficient knowledge of jargons: ChatGPT could not be familiar enough with certain terms or jargon used in the library and information area, which might result in wrong replies.

Conclusion :

While GPT technology is an effective tool for applications involving natural language processing, it is not without its drawbacks. One of the key drawbacks of GPT models is that they rely on a statistical method that uncovers patterns from a sizable body of text, which has the potential to reinforce any prejudices and stereotypes that may already exist in the data (Dale, 2017; Lucy & Bamman, 2021). As a result, the model may produce objectionable or damaging output. Furthermore, GPT models are unable to comprehend the context and meaning of the text they produce fully, and they are unable to do effectively in tasks that call for logical or common-sense reasoning that is not covered by the training data. while the incorporation of AI-based chatbots in digital libraries provides many benefits, it is crucial to carefully analyze the possible drawbacks and put in place measures to reduce the dangers. In order to guarantee that they are



giving consumers the greatest experience possible, libraries should thoroughly assess the strengths and weaknesses of chatbots (Verma, 2023).The ChatGPT is still in its infancy compared to other technologies used in libraries. The implementation process is only getting started; thus it is difficult to assess its quality without utilizing it constantly. Since it is only getting started, there are still plenty of benefits that will be incredibly beneficial to both users and libraries. However, it also negatively affects the library profession since it offers all pre-made material, which decreases the number of people who visit the library, cannot protect individual privacy, may lead to security problems, and limits the capacity of the human mind. It is crucial to thoroughly assess technology before relying on it; do not accept it at blindly and do not rely only on it.

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